

**A REPORT OF THE
ALFALFA AND MISCELLANEOUS LEGUMES
VARIETY REVIEW BOARD**



ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

ALFALFA AND MISCELLANEOUS LEGUMES
VARIETY REVIEW BOARD REPORT ©2019

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ALFALFA AND MISCELLANEOUS LEGUMES
VARIETY REVIEW BOARD

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES
(FEBRUARY 2019)

The Association of Official Seed Certifying Agencies (AOSCA) Alfalfa and Miscellaneous Legumes Variety Review Board reviewed the following varieties on February 7, 2019. The Board recommended the inclusion of these varieties for certification. Seed of these varieties may be certified, providing production meets all standards of the Seed Certifying Agency of the jurisdiction in which the seed is grown.

All variety information, including descriptions, claims, and research data to support any claim, was supplied to the Alfalfa and Miscellaneous Legumes Variety Review Board by the applicants. The Alfalfa and Miscellaneous Legumes Variety Review Board makes judgments regarding recommendation of varieties for inclusion into certification based on the data supplied. Beyond this, the Alfalfa and Miscellaneous Legumes Variety Review Board takes no position on the accuracy or truthfulness of any description or claim made by the applicants.

Further information on current procedures, application forms, and details regarding the Alfalfa and Miscellaneous Legumes Variety Review Board can be obtained from:

Chester Boruff, Chief Executive Officer
AOSCA
1601 52nd Ave., Suite 1
Moline, Illinois 61265

Telephone (309) 736-0120
Fax (309) 736-0115
E-Mail cboruff@aosca.org

Respectfully submitted,

Timothy Blank, Chair
Alfalfa and Miscellaneous Legumes Variety Review Board

2019 AOSCA ALFALFA & MISC LEGUMES VARIETY REVIEW BOARD

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		A – Name Change			
		B – Description			
		C – Other			

Alfalfa
AFX 429
CW 103012 (Exp)
(Amended – Change Fall Dormancy from 3 to 4)

Variety Name AFX 429
 Experimental Designation(s) CW 103012
 Date A&MLVRB first recommended this variety January 2016
 Date(s) any previous amendments were recommended January 2017, January 2018
 Date this amendment was submitted November 29, 2018

Origin and Breeding History

AFX 429 is a synthetic variety developed by Alforex Seeds with 30 parent plants selected for dense crowns, high leaf to stem ratio, vigorous roots, and no stem, crown, or root rot. Parent plants were selected from a four year old Wisconsin yield trial and three year old Iowa, Minnesota, and Wisconsin yield trials, crossed in the greenhouse, and bulk harvested as Synthetic generation 1. Yield trial source plants composed of various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage dry matter yield, high NDFD (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), Aphanomyces root rot (race 2), Anthracnose (race 1), and Leptosphaerulina leaf spot. Parentage of AFX 429 traces to the following germplasm sources: Upper Edge (17%), CW 10-027 (83%). Breeder seed was produced under cage isolation near Woodland, California in 2010. Seed was bulk harvested from all parent plants as Synthetic generation 2.

Areas of Probable Adaptation

AFX 429 is adapted to the North Central area of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. AFX 429 has been tested in Iowa, Minnesota, and Wisconsin.

Agronomic and Botanical Characteristics

AFX 429 is a dormant variety with fall dormancy similar to FD class 4 check variety. Flower color observed in the Syn.2 generation is approximately 98% purple, 1% variegated and a trace of white. AFX 429 has Low multifoliolate leaf expression rating similar to the Low MF check variety. AFX 429 has high resistance to Anthracnose (race 1), Aphanomyces root rot (race 1), Bacterial wilt, Fusarium wilt, Phytophthora root rot, and Verticillium wilt. It has resistance to Aphanomyces root rot (race 2), Blue alfalfa aphid, Pea aphid, Spotted alfalfa aphid, and Stem Nematode. Reaction to Root knot nematode, has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of AFX 429 is on a limited generation basis with two generations of breeder, three generations of foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2, Syn.3 or Syn.4), and certified (Syn.3, Syn.4 or Syn.5) classes will be recognized. Production of Syn.2 breeder, Syn.3 foundation or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2010. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of AFX 429 will be available in 2016. Certified acreage may not be published by AOSCA or member agencies.

Generations Allowed – Mark All That Apply

Foundation Syn.2, Syn.3 or Syn.4
 Registered _____
 Certified Syn.3, Syn.4, or Syn.5

Length of Stand Limitation – If None, Please State

Foundation 3
 Registered _____
 Certified 6

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa
AFX 460
CW A113005 (Exp)
(Amended – Name Change)

Variety Name AFX 460
 Experimental Designation(s) CW A113005
 Date A&MLVRB first recommended this variety January 2017
 Date(s) any previous amendments were recommended February 2018
 Date this amendment was submitted 9/17/18

Origin and Breeding History

AFX 460 is a synthetic variety with 10 parent plants selected for low Acid Detergent Lignin (ADL), high forage dry matter yield, high forage milk per acre using Milk 2000, and/or high forage NDFD. Parent plants were selected from a three year old Wisconsin selection nursery, crossed in the greenhouse, and bulk harvested as Synthetic generation 1. Nursery source plants composed of various populations that were developed by phenotypic recurrent selection for low Acid Detergent Lignin (ADL), winter hardiness, high forage dry matter yield, high NDFD (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), Aphanomyces root rot (race 2), Anthracnose (race 1), and Leptosphaerulina leaf spot. Parentage of AFX 460 traces to the following germplasm sources: CW 11-022 (100%). Breeder seed was produced under cage isolation near Woodland, California in 2011. Seed was bulk harvested from all parent plants as Synthetic generation 2.

Areas of Probable Adaptation

AFX 460 is adapted to the North Central area of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. AFX 460 has been tested in Iowa, Minnesota, and Wisconsin.

Agronomic and Botanical Characteristics

AFX 460 is a dormant variety with fall dormancy similar to FD class 4 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple with a trace of variegated, cream, white, and yellow. AFX 460 has high multifoliolate leaf expression rating similar to the high MF check variety. AFX 460 has high resistance to Anthracnose (race 1), Aphanomyces root rot (race 1), Bacterial wilt, Fusarium wilt, Phytophthora root rot, and Verticillium wilt. It has resistance to Blue alfalfa aphid, Pea aphid, Spotted alfalfa aphid, and Stem nematode. It has moderate resistance to Cowpea aphid. Reaction to Root knot nematode has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of AFX 460 is on a limited generation basis with two generations of breeder, three generations of foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2, Syn.3 or Syn.4), and certified (Syn.3, Syn.4 or Syn.5) classes will be recognized. Production of Syn.2 breeder, Syn.3 foundation or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2011. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of AFX 460 will be available in 2017. Certified acreage may not be published by AOSCA or member agencies.

**Generations Allowed –
 Mark All That Apply**

Foundation Syn.2, Syn.3 or Syn.4
 Registered _____
 Certified Syn.3, Syn.4, or Syn.5

**Length of Stand Limitation –
 If None, Please State**

Foundation 3
 Registered _____
 Certified 6

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Sep 17, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

AFX 779 098219 (Exp) (Amended – Name Change)

Variety Name AFX 779
Experimental Designation(s) 098219
Date A&MLVRB first recommended this variety January 2017
Date(s) any previous amendments were recommended February 2018
Date this amendment was submitted 9/17/18

Origin and Breeding History

AFX 779 is a synthetic variety with 190 parent plants that were selected for aphid resistance, drought tolerance, frost tolerance, leaf disease resistance, persistence and agronomic characteristics from yield trials at two locations in Argentina. Parent plants were selected from various populations that were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of AFX 779 traces to CUF 101 (19%), Cibola (14%), DK 191 (9%), Magna 860 (9%), SW9628 (9%), Magna 995 (8%), Magna 901 (6%), DK 193 (4%), Diamond (3%), DK 192 (1%), and miscellaneous Alforex Seeds breeding populations (18%). Breeder seed (Syn.1) was produced under cage isolation near Anguil, Argentina in 2009. Seed was bulk harvested from all parent plants.

Areas of Probable Adaptation

AFX 779 is adapted to Moderately Winterhardy Intermountain and Southwest areas of the U.S. and Argentina and is intended for use in the Moderately Winterhardy Intermountain and Southwest areas of the U.S. and in Argentina. AFX 779 has been tested in California and Argentina.

Agronomic and Botanical Characteristics

AFX 779 is a nondormant variety with fall dormancy similar to FD class 7 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, with a trace of variegated, white, cream, and yellow. Germination of AFX 779 under salt stress is similar to the tolerant check variety. AFX 779 has high resistance to pea aphid, spotted alfalfa aphid, and cowpea aphid, with resistance to anthracnose (race 1), Fusarium wilt, Phytophthora root rot, bacterial wilt, Verticillium wilt, blue alfalfa aphid, and stem nematode. Reaction to root knot nematode and Aphanomyces root rot (race 1) has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of AFX 779 is on a limited generation basis with two generations of breeder, and three generations of the foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2, Syn.3, or Syn.4), and certified (Syn.3, Syn.4, or Syn.5) classes will be recognized. Production of Syn.2 breeder, Syn.3 foundation, or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Anguil, Argentina in 2009. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of AFX 779 will be available in 2017. Certified acreage may not be published by AOSCA or member agencies.

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Sep 17, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

HybriForce-4400 AFXH144110, msSunstra-144110 (Exp)

Origin and Breeding History

HybriForce-4400 is a 75-95% hybrid alfalfa variety with parents consisting of a female clone, a maintainer clone, and a synthetic variety as the male pollenizer. The female clone was originally selected for male sterility, good agronomics, and good visual seed set from a full sib cross that was planted in Sloughhouse, CA. The clone was then progeny tested for seed yield, forage yield, stand persistence, and resistance to Phytophthora root rot, Aphanomyces root rot (Race 1), and Aphanomyces root rot (Race 2). This clone traces to Alforex Seeds experimental germplasm.

The maintainer clone was selected from a full sib greenhouse cross which was first screened for resistance to Phytophthora root rot and Aphanomyces root rot (race 1), and then selected for winterhardiness in a Wisconsin nursery. The clone was progeny tested for maintaining ability and seed yield, and then progeny tested for forage yield, stand persistence, and resistance to Phytophthora root rot, anthracnose (Race 1), Aphanomyces root rot (Race 1), and Aphanomyces root rot (Race 2). This clone traces to Alforex Seeds experimental germplasm.

The male pollenizer was developed as a synthetic variety consisting of 175 parental clones. These clones were progeny tested for one or more of the following traits: resistance to bacterial wilt, Fusarium wilt, Phytophthora root rot, anthracnose (Race 1), Verticillium wilt, Aphanomyces root rot (Race 1), and Aphanomyces root rot (Race 2). The parentage of the male pollenizer traces 100% to CW A113010.

Hybrid female breeder seed (D-1012) was produced by harvesting the seed from vegetatively propagated male sterile clones which were pollinated by vegetatively propagated maintainer clones in field isolation near Sloughhouse, CA in 2016 and 2017. Hybrid male breeder seed (CW A123011) was produced under cage isolation near Woodland, California in 2012. Male seed was bulk harvested from all parent plants as Synthetic generation 1. Synthetic generation 1 seed was planted in field isolation and bulk harvested as Synthetic generation 2.

Areas of Probable Adaptation

HybriForce-4400 is adapted to the North Central and East Central areas of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. HybriForce-4400 has been tested in Minnesota and Wisconsin.

Agronomic and Botanical Characteristics

HybriForce-4400 is a moderately dormant variety with fall dormancy similar to FD class 4 check variety. Flower color observed in the Syn.2 generation is approximately 90% purple, 9% variegated, and with a trace of cream, white, and yellow. HybriForce-4400 has high resistance to Anthracnose (race 1), Phytophthora root rot, Aphanomyces root rot (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Blue alfalfa aphid, and Stem nematode. It has resistance to Aphanomyces root rot (race 2), and Spotted alfalfa aphid. Reaction to Pea aphid and Root knot nematode has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of HybriForce-4400 is on a limited generation basis. Female Breeder seed must be produced by harvesting seed from vegetatively propagated cytoplasmic male sterile clones that have been pollinated by vegetatively propagated maintainer clones in field isolation. Alforex Seeds will maintain sufficient breeder seed (Syn. 1) for the projected life of the variety. Female Breeder seed was produced under field isolation near Sloughhouse, California in 2016 and 2017. Male breeder seed was produced under cage isolation near Woodland, California in 2012. Alforex Seeds will maintain sufficient foundation seed (Syn. 2 or Syn. 3) for the projected life of the variety. Use of Syn. 3 male seed requires consent of the breeder. Stands of foundation and certified hybrid seed fields are limited to 3 and 5 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of HybriForce-4400 will be available in 2019.

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

Quail CW 065033 (Exp) (Amended – Name Change)

Variety Name Quail

Experimental Designation(s) CW 065033

Date A&MLVRB first recommended this variety 2014

Date(s) any previous amendments were recommended

Date this amendment was submitted 8/21/18

Origin and Breeding History

Quail is a synthetic variety with 65 parent plants selected for high forage dry matter yield, high forage milk per acre using Milk 2000, and/or high forage NDFD. Parent plants were selected from a three year old Wisconsin selection nursery, crossed in the greenhouse, and bulk harvested as Synthetic generation 1. Nursery source plants composed of various populations that were developed by phenotypic recurrent selection for winter hardiness, high forage dry matter yield, high NDFD (using Near Infrared Reflectance Spectroscopy), and for resistance to one or more of the following pests: bacterial wilt, Fusarium Wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot, anthracnose (race 1), and Leptosphaerulina leaf spot. Percentage of Quail traces to the following germplasm sources: QWEST (2%), Radar (2%), STEALTH SF (3%), STELLAR FG (8%), CW 500 (4%), and CW 06-102 (81%). Breeder seed was produced under cage isolation near Woodland, California in 2006. Seed was bulk harvested from all parent plants as Synthetic generation 2.

Areas of Probable Adaptation

Quail is adapted to the North Central area of the U.S. and is intended for use in the North Central, East Central, Great Plains, Moderately Winterhardy Intermountain and Winterhardy Intermountain areas of the U.S. Quail has been tested in Iowa, Minnesota, and Wisconsin

Agronomic and Botanical Characteristics

Quail is a moderately dormant variety with fall dormancy similar to FD class 5 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, 1% white, and a trace variegated. Quail has moderate multifoliolate leaf expression rating similar to Moderate MF check variety.

Quail has high resistance to anthracnose (race 1), Aphanomyces root rot (race 1), bacterial wilt, Fusarium wilt, Phytophthora root rot, Verticillium wilt, and stem nematode; with resistance to pea aphid and root knot nematode; with moderate resistance to blue alfalfa aphid and cow pea aphid. Reaction to spotted alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of Quail is on a limited generation basis with two generations of breeder, foundation, and certified seed classes. Breeder (Syn.2 or Syn.3), foundation (Syn.3 or Syn.4), and certified (Syn.4 or Syn.5) classes will be recognized. Production of Syn.3 breeder or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Woodland, California in 2006. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of Quail will be available in 2014.

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Aug 21, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

AFX139067 (Exp)

Origin and Breeding History

AFX139067 is a synthetic variety with 254 parent plants that were selected for aphid resistance, drought tolerance, frost tolerance, leaf disease resistance, persistence and agronomic characteristics from yield trials at three locations in Argentina. Parent plants were selected from various populations that were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of AFX139067 traces to Magna 919 (23%), Magna 995 (17%), CW 194 (15%) and miscellaneous Alforex Seeds breeding populations (45%). Breeder seed (Syn.1) was produced under cage isolation near Anguil, Argentina in 2013. Seed was bulk harvested from all parent plants.

Areas of Probable Adaptation

AFX139067 is adapted to Moderately Winterhardy Intermountain and Southwest areas of the U.S. and Argentina and is intended for use in the Moderately Winterhardy Intermountain and Southwest areas of the U.S. and Argentina. AFX139067 has been tested in California and Argentina.

Agronomic and Botanical Characteristics

AFX139067 is a very nondormant variety with fall dormancy similar to FD class 9 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, with a trace of variegated, white, cream, and yellow. AFX139067 has high resistance to anthracnose (race 1), Fusarium wilt, pea aphid, spotted alfalfa aphid, blue alfalfa aphid, and cowpea aphid, with resistance to Verticillium wilt and stem nematode, and moderate resistance to Phytophthora root rot and bacterial wilt. Reaction to root knot nematode and Aphanomyces root rot (race 1) has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of AFX139067 is on a limited generation basis with two generations of breeder, and three generations of the foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2, Syn.3, or Syn.4), and certified (Syn.3, Syn.4, or Syn.5) classes will be recognized. Production of Syn.2 breeder, Syn.3 foundation, or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Anguil, Argentina in 2013. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of AFX139067 will be available in 2019. Certified acreage may not be published by AOSCA or member agencies.

Generations Allowed –

Mark All That Apply

Foundation Syn.2, Syn.3, or Syn.4
Registered _____
Certified Syn.3, Syn.4, or Syn.5

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered _____
Certified 6

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

AFX147087 (Exp)

Origin and Breeding History

AFX147087 is a synthetic variety with 312 parent plants that were selected for aphid resistance, drought tolerance, frost tolerance, leaf disease resistance, persistence and agronomic characteristics from yield trials at five locations in Argentina. Parent plants were selected from various populations that were developed by a combination of phenotypic recurrent selection and strain crossing with selection for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, anthracnose (race 1), spotted alfalfa aphid, blue alfalfa aphid, and stem nematode. Parentage of AFX147087 traces to PGI 709 (14%), Pastura (12%), Magna 715 (11%), WL 442 (10%), Magna 787 (6%), Sutter (2%), and miscellaneous Alforex Seeds breeding populations (45%). Breeder seed (Syn.1) was produced under cage isolation near Anguil, Argentina in 2014. Seed was bulk harvested from all parent plants.

Areas of Probable Adaptation

AFX147087 is adapted to Moderately Winterhardy Intermountain and Southwest areas of the U.S. and Argentina and is intended for use in the Moderately Winterhardy Intermountain and Southwest areas of the U.S. and Argentina. AFX147087 has been tested in California and Argentina.

Agronomic and Botanical Characteristics

AFX147087 is a nondormant variety with fall dormancy similar to FD class 7 check varieties. Flower color observed in the Syn.2 generation is approximately 99% purple, with a trace of variegated, white, cream, and yellow. AFX147087 has high resistance to Fusarium wilt, pea aphid, spotted alfalfa aphid, cowpea aphid, and stem nematode with resistance to anthracnose (race 1), Phytophthora root rot, bacterial wilt, Verticillium wilt, and blue alfalfa aphid. Reaction to root knot nematode and Aphanomyces root rot (race 1) has not been tested.

Procedures for Maintaining Seed Stock

Seed increase of AFX147087 is on a limited generation basis with two generations of breeder, and three generations of the foundation, and certified seed classes. Breeder (Syn.1 or Syn.2), foundation (Syn.2, Syn.3, or Syn.4), and certified (Syn.3, Syn.4, or Syn.5) classes will be recognized. Production of Syn.2 breeder, Syn.3 foundation, or Syn.4 foundation seed requires consent of the breeder. Breeder seed was produced under cage isolation near Anguil, Argentina in 2014. Sufficient foundation seed for the projected life of the variety will be maintained by Alforex Seeds. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed of AFX147087 will be available in 2019. Certified acreage may not be published by AOSCA or member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u>Syn.2, Syn.3, or Syn.4</u>
Registered	_____
Certified	<u>Syn.3, Syn.4, or Syn.5</u>

Length of Stand Limitation –

If None, Please State

Foundation	<u>3</u>
Registered	_____
Certified	<u>6</u>

PVP Information

No decision has been made regarding Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

6439HVXR FG H0415A3139 (Exp)

Origin and Breeding History

6439HVXR is a synthetic variety with 115 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

6439HVXR is adapted to the North Central and East Central areas. This variety has been tested in Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

6439HVXR is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 99% purple with a trace of variegated, white, cream and yellow. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

6439HVXR has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2); with resistance to stem nematode, spotted alfalfa aphid and pea aphid. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

AmeriStand 457TQ RR

FG R411A107 (Exp)

(Amended – Salt Tolerance of Germination Alfalfa Seeds)

Variety Name AmeriStand 457TQ RR

Experimental Designation(s) FG R411A107

Date A&MLVRB first recommended this variety January 10, 2017

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

AmeriStand 457TQ RR is a synthetic variety with 110 parent plants. Parent plants contained the commercial Roundup Ready event J101 and were selected for resistance to Aphanomyces root rot resistance (Race 1 and Race 2) from FGI breeding populations previously selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2011.

Areas of Probable Adaptation

AmeriStand 457TQ RR is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Idaho, Iowa, Wisconsin and Washington and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

AmeriStand 457TQ RR is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 93% purple, 2% white, 2% yellow, 2% variegated and 1% cream. This variety has high multifoliolate leaf expression.

AmeriStand 457TQ RR has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid; with resistance to spotted alfalfa aphid and stem nematode. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock:

Breeder seed (Syn1) was produced in 2011 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

AmeriStand 480 HVXRR

FG RRL43M119 (Exp)

(Amended – Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name AmeriStand 480 HVXRR

Experimental Designation(s) RRL43M119

Date A&MLVRB first recommended this variety February 9, 2017

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

AmeriStand 480 HVXRR is a synthetic variety with 270 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2013.

Areas of Probable Adaptation

AmeriStand 480 HVXRR is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Idaho, Washington, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

AmeriStand 480 HVXRR is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 92% purple, 3% cream, 2% yellow, 2% white and 1% variegated. This variety has high multifoliolate leaf expression. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

AmeriStand 480 HVXRR has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1); resistance to pea aphid, stem nematode and spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

AmeriStand 481 HVXRR FG H0415C4115 (Exp)

Origin and Breeding History

AmeriStand 481 HVXRR is a synthetic variety with 115 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by Acid Detergent Lignin (ADL), glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

AmeriStand 481 HVXRR is adapted to the North Central and East Central areas. This variety has been tested in Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

AmeriStand 481 HVXRR is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 91% purple 5% cream, 3% white with a trace of variegated and yellow. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

AmeriStand 481 HVXRR has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2); with resistance to stem nematode, spotted alfalfa aphid and pea aphid. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

AmeriStand 518NT FG 57W208 (Exp) (Amended – Name Change)

Variety Name AmeriStand 518NT
Experimental Designation(s) FG 57W208
Date A&MLVRB first recommended this variety January 2013
Date(s) previous amendments were recommended _____
Date amendment submitted August 10, 2018

Origin and Breeding History

AmeriStand 518NT is a synthetic variety with 14 parent plants that was developed by Forage Genetics International. Parent plants were selected for resistance to one or more of the following pests: Fusarium wilt, Verticillium wilt, Phytophthora root rot, stem nematode, northern root rot nematode and Aphanomyces root rot (Race 1). Phenotypic selection was used to identify the parent plants. The germplasm sources used in the development trace to Grandstand (29%), and six FGI experimental populations (71%). In 2007 Syn1 seed was produced in Nampa, ID, harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

AmeriStand 518NT is adapted to the Winterhardy Intermountain and Moderately Winterhardy Intermountain regions of the U.S. and similar environments. The variety has been tested in Washington, Oregon, Idaho and Colorado and intended use is in the Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

AmeriStand 518NT is moderately fall dormant similar to the FD 5 check. Flower color (Syn 2) is 95% Purple, 2% Variegated, trace Yellow, 1% Cream and 2% White. It expresses a high degree of multifoliolate leafiness.

The variety is highly resistant to anthracnose, bacterial wilt, *Fusarium* wilt, Phytophthora root rot, *Verticillium* wilt, *Aphanomyces* root rot (race 1), Pea aphid, Northern root knot nematode (*M. hapla*) and stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and two generations of foundation classes and certified seed classes. Production of Syn 2 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in 2007 near Nampa, ID. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in 2013 if FG 57W208 is accepted for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

Descriptive information cannot be provided to the PVP office.

Date this application was submitted: Jan 22, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

AmeriStand 955NT RR FG R813T452 (Exp)

Origin and Breeding History

AmeriStand 955NT RR is a synthetic variety with 112 parent plants that was developed by Forage Genetics International. Parent plants contain the commercial Roundup Ready event J101 and were selected from FGI breeding lines for glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: Fusarium wilt, Phytophthora root rot and stem nematode. A combination of Genotypic and Phenotypic selection was used to identify the parent plants. The germplasm sources used in the development trace to various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed near Nampa, ID in 2013.

Areas of Probable Adaptation

AmeriStand 955NT RR is adapted to the Southwest U.S. and similar environments. This variety has been tested in California and is intended for use in the Southwest region.

Agronomic and Botanical Characteristics

AmeriStand 955NT RR is Very Non-dormant similar to the FD 9 check. Flower color (Syn 2) is 99% purple, with a trace of variegated, yellow, cream and white. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

AmeriStand 955NT RR is highly resistant to bacterial wilt, Fusarium wilt, Phytophthora root rot, pea aphid, spotted alfalfa aphid and stem nematode; resistant to Verticillium wilt and blue alfalfa aphid; and moderately resistant to anthracnose. It has not been tested for other pests.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, ID. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

The breeder requires that at least one glyphosate application be made during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.) The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FF 4022.LH FG 413H323 (Exp) (Amended – Name Change)

Variety Name FF 4022.LH
Experimental Designation(s) FG 413H323
Date A&MLVRB first recommended this variety January, 2018
Date(s) any previous amendments were recommended _____
Date this amendment was submitted November 30, 2018

Origin and Breeding History

FF 4022.LH is a synthetic variety with 110 parent clones. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (Race 1 and Race 2). A combination of phenotypic and genotypic selection was used to identify the parent clones. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2013.

Areas of Probable Adaptation

FF 4022.LH is adapted to the North Central and East Central regions. This variety has been tested in Iowa, Indiana and Pennsylvania and is intended for use in the North Central and East Central regions.

Agronomic and Botanical Characteristics

FF 4022.LH is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 92% purple, 5% cream, 2% white with a trace yellow and variegated.

FF 4022.LH has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1) and potato leafhopper. Reaction to other pests has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2013. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2018 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Jan 22, 2018

Date recommended by the VRB: Feb 7, 2019



ALFALFA

GUNNER

FG 57M121 (Exp)

(Amended – Salt Tolerance Germinating Alfalfa Seeds)

Variety Name Gunner

Experimental Designation(s) FG 57M121

Date A&MLVRB first recommended this variety January, 2012

Date(s) any previous amendments were recommended February 21, 2013

Date this amendment was submitted November 30, 2018

Origin and Breeding History

GUNNER is a synthetic variety with 14 parent clones. Forage Genetics International experimental designation is FG 57M121. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent clones. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2007.

Areas of Probable Adaptation

GUNNER is adapted to the North Central, East Central, Great Plains and Winterhardy Intermountain. This variety has been tested in Nebraska, Pennsylvania, Idaho and Wisconsin and is intended for use in the North Central, East Central, Great Plains and Winterhardy Intermountain.

Agronomic and Botanical Characteristics

GUNNER is Moderately Fall Dormant similar to FD5 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 94% purple, 5% variegated and 1% yellow with a trace of cream and white. This variety has high multifoliolate leaf expression.

GUNNER has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, root knot nematode (Northern *M. Hapla*) and Aphanomyces root rot (Race 1); with resistance to pea aphid and stem nematode. Reaction to spotted alfalfa aphid and blue alfalfa aphid has not been tested. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2007. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be marketed in 2012.

Certified seed production acreage may be published by AOSCA and member agencies.

PVP Information

No decision has been made concerning Plant Variety Protection Act.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Mar 14, 2019



Alfalfa

HVX Tundra

FG H0315ML104 (Exp)

Origin and Breeding History

HVX Tundra is a synthetic variety with 115 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

HVX Tundra is adapted to the North Central and East Central areas. This variety has been tested in Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

HVX Tundra is Fall Dormant similar to FD3 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 96% purple, 2% white, 1% cream with a trace of variegated and yellow. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

HVX Tundra has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1); with resistance to pea aphid and moderate resistance to stem nematode. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
Registered
Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Mar 14, 2019



Alfalfa

Legend HvX 100 RR FG RRL44M104 (Exp) (Amended – Name Change)

Variety Name Legend HvX 100 RR
Experimental Designation(s) FG RRL44M104
Date A&MLVRB first recommended this variety January 2018
Date(s) any previous amendments were recommended _____
Date this amendment was submitted March 9, 2018

Origin and Breeding History

Legend HvX 100 RR is a synthetic variety with 115 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2014.

Areas of Probable Adaptation

Legend HvX 100 RR is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Washington, Idaho, Iowa, Pennsylvania and Wisconsin and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

Legend HvX 100 RR is Moderately Fall Dormant similar to FD4 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 99% purple with a trace of white, variegated, yellow and cream. This variety has high multifoliolate leaf expression.

Legend HvX 100 RR has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1); with resistance to stem nematode. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid, pea aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2014 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2018 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa
LG 4HVXR100
FG RRL44M377 (Exp)
(Amended – Name Change)

Variety Name LG 4HVXR100
 Experimental Designation(s) FG RRL44M377
 Date A&MLVRB first recommended this variety January 24, 2018
 Date(s) any previous amendments were recommended _____
 Date this amendment was submitted January 22, 2018

Origin and Breeding History

LG 4HVXR100 is a synthetic variety with 54 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2014.

Areas of Probable Adaptation

LG 4HVXR100 is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Washington, Idaho, Iowa, Pennsylvania and Wisconsin and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

LG 4HVXR100 is Moderately Fall Dormant similar to FD4 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 99% purple with a trace of white, variegated, cream and yellow. This variety has high multifoliolate leaf expression.

LG 4HVXR100 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1); with resistance to stem nematode and pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2014 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2018 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
 Registered _____
 Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
 Registered None
 Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Jan 22, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

LG 9C300 FG 99T097 (Exp) (Amended – Name Change)

Variety Name LG 9C300
Experimental Designation(s) FG 99T097
Date A&MLVRB first recommended this variety January 2013
Date(s) any previous amendments were recommended _____
Date this amendment was submitted March 6, 2018

Origin and Breeding History

LG 9C300 is a synthetic variety with 223 parent plants that was developed by Forage Genetics International. Parent plants were selected from old forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, vigor and freedom from leaf diseases). The germplasm sources used in the development trace to Milonga II (37%), FGI breeding lines (58%), Panalfa 90 (3%) and DK 194 (2%). In 2008 Syn1 seed was produced near Marcos Juarez, Argentina, harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

LG 9C300 is adapted to the winter active regions of Argentina. The variety has been tested in Argentina and intended use in Argentina.

Agronomic and Botanical Characteristics

LG 9C300 is very nondormant similar to the FD 9 check. Flower color (Syn 2) is 100% Purple, with a trace of Variegated, Yellow, Cream and White. This variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check

The variety is highly resistant to *Fusarium* wilt; resistant to anthracnose, Phytophthora root rot, pea aphid and stem nematode; and has moderate resistance to bacterial wilt and low resistance to *Aphanomyces* Root Rot (race 1). It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn 2) and certified (Syn 3 or Syn 4) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and two generations of foundation classes and certified seed classes. Breeder seed (Syn1) was produced in 2008 near Marcos Juarez, Argentina. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in 2013 if LG 9C300 is accepted for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

Descriptive information cannot be provided to the PVP office.

Date this application was submitted: Jan 22, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa
MPIII Max Q
FG 510M172 (Exp)
(Amended - Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name MPII MAX Q
 Experimental Designation(s) FG 510M172
 Date A&MLVRB first recommended this variety January, 2018
 Date(s) any previous amendments were recommended
 Date this amendment was submitted November 30, 2018

Origin and Breeding History

MPIII MAX Q is a synthetic variety with 110 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: Masterpiece II (50%), various FGI experimental populations (50%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2010.

Areas of Probable Adaptation

MPIII MAX Q is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

MPIII MAX Q is Moderately Fall Dormant similar to FD5 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 98% purple, 1% variegated with a trace of white, yellow and cream. This variety has high multifoliolate leaf expression.

MPIII MAX Q has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), pea aphid and stem nematode; with resistance to spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2010. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
 Registered
 Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3
 Registered None
 Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

Rebound AA FG C0415C4159 (Exp)

Origin and Breeding History

Rebound AA is a synthetic variety with 110 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: Rebound 6XT (50%) and various FGI experimental populations (50%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

Rebound AA is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

Rebound AA is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 96% purple, 2% white, 1% variegated with a trace of yellow and cream. This variety has high multifoliolate leaf expression. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Rebound AA has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2); with resistance to pea aphid and spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*), stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2015. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if it is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

Sun Titan FG 88T809 (Exp)

Origin and Breeding History

Sun Titan is a synthetic variety with 120 parent plants. Parent plants were selected from forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, fall plant height, vigor, and freedom from leaf diseases). The germplasm sources used in the development trace to FGI elite breeding populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2008.

Areas of Probable Adaptation

Sun Titan is adapted to the Southwest. This variety has been tested in California and Arizona and is intended for use in the Southwest, USA and Mexico.

Agronomic and Botanical Characteristics

Sun Titan is a Non-Dormant similar to the FD 8 check. Flower color (Syn 2) is 99% purple, with a trace of variegated, yellow, cream and white. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

The variety is highly resistant to Fusarium wilt, Phytophthora root rot, spotted alfalfa aphid, stem nematode, pea aphid and blue alfalfa aphid; resistant to Anthracnose (race 1); with moderate resistance to bacterial wilt and Verticillium wilt. It has not been tested for other pest reactions. Sun Titan exhibits salt tolerance in germinating seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Holtville, CA in 2008. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

WL 349HQ FG C0415C4149 (Exp)

Origin and Breeding History

WL 349HQ is a synthetic variety with 110 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

WL 349HQ is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

WL 349HQ is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 91% purple, 3% cream, 3% yellow, 2% variegated and 1% white. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

WL 349HQ has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid, stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2015. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if it is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa
WL 365HQ
FG 59M109 (Exp)
(Amended - Salt Tolerance of Germinating Alfalfa Seed)

Variety Name WL 365HQ
Experimental Designation(s) FG 59M109
Date A&MLVRB first recommended this variety January, 2014
Date(s) any previous amendments were recommended January, 2015
Date this amendment was submitted November 30, 2018

Origin and Breeding History

WL 365HQ is a synthetic variety with 10 parent clones developed by Forage Genetics International. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode and Aphanomyces root rot (Race 1 and Race 2). A combination of phenotypic and genotypic selection was used to identify the parent clones. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2009.

Areas of Probable Adaptation

WL 365HQ is adapted to North Central, East Central and Winterhardy Intermountain regions. This variety has been tested in New York, Idaho and Wisconsin and is intended for use in the North Central, East Central and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

WL 365HQ is Moderately Fall Dormant similar to FD5 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 93% purple, 7% variegated with a trace of cream, white and yellow.

WL 365HQ has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), pea aphid and spotted alfalfa aphid; with resistance to stem nematode. Reaction to root knot nematode (Northern *M. hapla*.) and blue alfalfa aphid has not been tested. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2009. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be marketed in 2014.

Certified seed production acreage may not be published by AOSCA and member agencies.

PVP Information

No decision has been made concerning Plant Variety Protection Act.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

WL 668HQ.RR

FG R913T453 (Exp)

Origin and Breeding History

WL 668HQ.RR is a synthetic variety with 126 parent plants that was developed by Forage Genetics International. Parent plants contain the commercial Roundup Ready event J101 and were selected from FGI breeding lines for glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: Fusarium wilt, Phytophthora root rot and stem nematode. A combination of Genotypic and Phenotypic selection was used to identify the parent plants. The germplasm sources used in the development trace to various FGI experimental populations (100%). Syn1 seed was grown in field isolation near Nampa, ID in the fall of 2013. Syn1 seed was harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

WL 668HQ.RR is adapted to the Southwest U.S. and similar environments. This variety has been tested in California and is intended for use in the Southwest regions.

Agronomic and Botanical Characteristics

WL 668HQ.RR is Very Non-dormant similar to the FD 9 check. Flower color (Syn 2) is 99% purple, with a trace of variegated, yellow, cream and white.

WL 668HQ.RR is highly resistant to anthracnose (race 1), Fusarium wilt, Phytophthora root rot, bacterial wilt, pea aphid, spotted alfalfa aphid and stem nematode; with resistance to Verticillium wilt and blue alfalfa aphid. It has not been tested for other pests. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, ID. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

The breeder requires that at least one glyphosate application be made during early stand establishment so that cp4-epsps null segregate plants are removed from the seed field prior to pollination. (Null segregate plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety.) The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 1013T183 (Exp) (Amended – Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name _____

Experimental Designation(s) FG 1013T183

Date A&MLVRB first recommended this variety January, 2018

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG 1013T183 is a synthetic variety with 216 parent plants. Parent plants were selected from forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, fall plant height, vigor, and freedom from leaf diseases). The germplasm sources used in the development trace to FGI elite breeding populations (100%). Syn1 seed was grown in field isolation near Holtville, CA fall 2013. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2013.

Areas of Probable Adaptation

FG 1013T183 is adapted to the Southwest U.S. and similar environments. This variety has been tested in California and Arizona and is intended for use in the Southwest U.S, Mexico and Argentina regions.

Agronomic and Botanical Characteristics

FG 1013T183 is very Non-Dormant like the FD 11 check. Flower color (Syn 2) is 99% Purple, with a trace of Variegated, Yellow, Cream and White. The variety is highly resistant to spotted alfalfa aphid; resistant to Fusarium wilt and Phytophthora root; moderately resistant to anthracnose and Aphanomyces root rot (race 1) and low resistance to Verticillium wilt. It has not been tested for other pest reactions. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Holtville, CA in 2013. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 109T901 (Exp) (Amended – High Resistance (HR) to Bacterial Wilt Disease)

Variety Name _____

Experimental Designation(s) FG 109T901

Date A&MLVRB first recommended this variety January 26, 2018

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG 109T901 is a synthetic variety with 51 parent plants. Parent plants were selected from forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, fall plant height, vigor, and freedom from leaf diseases). The germplasm sources used in the development trace to Fertilac 11 (12%) and FGI elite breeding populations (88%). Syn1 seed was harvested from an intercross of Syn0 parents in the greenhouse in January 2009, and from a field or cage isolation near Holtville, CA fall 2009. In both cases seed was harvested in total on all parents and bulked to form breeder seed. Syn1 seed produced in the greenhouse was only used to establish fall dormancy tests.

Areas of Probable Adaptation

FG 109T901 is adapted to the Southwest. It has been tested in California and its intended for use in the Southwest USA, Mexico and Argentina.

Agronomic and Botanical Characteristics

FG 109T901 is very Non-Dormant like the FD 11 check. Flower color (Syn 2) is 99% Purple, with a trace of Variegated, Yellow, Cream and White. The variety is highly resistant to spotted alfalfa aphid, blue alfalfa aphid and stem nematode; resistant to anthracnose, bacterial wilt, Fusarium wilt and Phytophthora root rot and Aphanomyces root rot (race 1); and moderately resistant to Verticillium wilt and Aphanomyces root rot (race 2). It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Holtville, CA in 2009. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2018 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u>X</u>
Registered	_____
Certified	<u>X</u>

Length of Stand Limitation – If None, Please State

Foundation	<u>3</u>
Registered	<u>None</u>
Certified	<u>6</u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 712M00 (Exp)

Origin and Breeding History

FG 712M00 is a synthetic variety with 165 parent plants. Parent plants were selected from old forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, vigor and freedom from leaf diseases). The germplasm sources used in the development trace to FGI breeding lines (100%). In 2012 Syn1 seed was produced near Marcos Juarez, Argentina, harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG 712M00 is adapted to the winter active regions of the Argentina. The variety has been tested in Argentina and intended for use in Winter active regions of Argentina.

Agronomic and Botanical Characteristics

FG 712M00 is Non-Dormant similar to the FD 8 check. Flower color (Syn2) is 99% purple, with a trace of variegated, yellow, cream and white. This variety is suitable for use in producing hay, haylage, greenchop and dehydrated product.

FG 712M00 is highly resistant to anthracnose (race 1), Fusarium wilt, pea aphid, spotted alfalfa aphid; resistant to bacterial wilt and Phytophthora root rot; and moderate resistant to blue alfalfa aphid. It has not been tested for other pest reactions.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn 2) and certified (Syn 2 or Syn 3) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and two generations of foundation classes and certified seed classes. Breeder seed (Syn1) was produced in 2012 near Marcos Juarez, Argentina. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> none </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 79T094 (Exp) (Amended – High Resistance (HR) to Spotted Alfalfa Aphid)

Variety Name _____

Experimental Designation(s) FG 79T094

Date NA&MLVRB first accepted this variety January, 2013

Date(s) previous amendments were accepted January, 2015

Date amendment submitted November 30, 2018

Origin and Breeding History

FG 79T094 is a synthetic variety with 251 parent plants. Parent plants were selected from old forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, vigor and freedom from leaf diseases). The germplasm sources used in the development trace to WL 611 (35%) and FGI breeding lines (65%). In 2008 Syn1 seed was produced near Marcos Juarez, Argentina, harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG 79T094 is adapted to the winter active regions of Argentina and similar environments. The variety has been tested in Argentina and is intended for use in Argentina.

Agronomic and Botanical Characteristics

FG 79T094 is nondormant similar to the FD 8 check. Flower color (Syn 2) is 100% Purple, with a trace of Variegated, Yellow, Cream and White.

The variety is highly resistant to pea aphid, spotted alfalfa aphid and stem nematode; resistant to Anthracnose, bacterial wilt, Fusarium wilt, Phytophthora root rot and blue alfalfa aphid; and has low resistance to Aphanomyces Root Rot (race 1). It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn 2 or Syn 3) and certified (Syn 3 or Syn 4) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and two generations of foundation classes and certified seed classes. Breeder seed (Syn1) was produced in 2008 near Marcos Juarez, Argentina. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in 2013 if FG 79T094 is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 812M01 (Exp)

Origin and Breeding History

FG 812M01 is a synthetic variety with 260 parent plants. Parent plants were selected from old forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, vigor and freedom from leaf diseases). The germplasm sources used in the development trace to FGI breeding lines (100%). In 2012 Syn1 seed was produced near Marcos Juarez, Argentina, harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG 812M01 is adapted to the winter active regions of the Argentina. The variety has been tested in Argentina and intended for use in Winter active regions of Argentina.

Agronomic and Botanical Characteristics

FG 812M01 is Very Non-Dormant similar to the FD 9 check. Flower color (Syn2) is 99% purple, with a trace of variegated, yellow, cream and white. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG 812M01 is highly resistant to anthracnose (race 1), Phytophthora root rot, pea aphid and Fusarium wilt; resistant to bacterial wilt, and spotted alfalfa aphid; and moderately resistant to blue alfalfa aphid. It has not been tested for other pest reactions.

Procedures for Maintaining Seed Stock

Breeder (Syn 1), foundation (Syn2) and certified (Syn2 or Syn3) classes will be recognized. Seed increase is on a limited generation basis with one generation each of breeder and two generations of foundation classes and certified seed classes. Breeder seed (Syn1) was produced in 2012 near Marcos Juarez, Argentina. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG 913M181 (Exp)

Origin and Breeding History

FG 913M181 is a synthetic variety with 296 parent plants. Parent plants were selected from forage yield trials. Phenotypic selection was used to identify the parent plants (persistence, fall plant height, vigor, and freedom from leaf diseases). The germplasm sources used in the development trace to FGI elite breeding populations (100%). Syn1 seed was grown in field isolation near Holtville, CA fall 2013. Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2013.

Areas of Probable Adaptation

FG 913M181 is adapted to the Southwest. This variety has been tested in California and is intended for use in the Southwest USA, Mexico and Argentina.

Agronomic and Botanical Characteristics

FG 913M181 is Very Non-Dormant similar to the FD 10 check. Flower color (Syn 2) is 99% purple, with a trace of variegated, yellow, cream and white. This variety is suitable for use in producing hay, haylage, greenchop and dehydrated product.

The variety is highly resistant to anthracnose (race 1), Fusarium wilt, Verticillium wilt, Phytophthora root rot and spotted alfalfa aphid; resistant to bacteria wilt, Aphanomyces root rot (Race1); and moderately resistant to blue alfalfa aphid. It has not been tested for other pest reactions.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Holtville, CA in 2013. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2) seed for the projected life of the variety. Production of Syn2 foundation seed requires the consent of the breeder. Production of foundation (Syn3) seed from foundation (Syn2) seed is not permitted. Stands of foundation and certified seed fields are limited to 3 and 6 years respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG C0316A3159 (Exp)

Origin and Breeding History

FG C0316A3159 is a synthetic variety with 115 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: LegenDairy XHD (50%) and various FGI experimental populations (50%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2016.

Areas of Probable Adaptation

FG C0316A3159 is adapted to the North Central, East Central and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0316A3159 is Fall Dormant similar to FD3 check. Test variety is Extremely Winterhardy similar to WS1 check. Flower Color (Syn2) is 97% purple, 1% cream, 1% white with a trace of yellow and variegated. This variety has high multifoliolate leaf expression. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0316A3159 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid; with resistance to spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*), stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2016. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG C0316ML134 (Exp)

Origin and Breeding History

FG C0316ML134 is a synthetic variety with 115 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2016.

Areas of Probable Adaptation

FG C0316ML134 is adapted to the North Central, East Central and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0316ML134 is Fall Dormant similar to FD3 check. Test variety is Extremely Winterhardy similar to WS1 check. Flower Color (Syn2) is 98% purple, 1% cream with a trace of yellow, white and variegated. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0316ML134 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot and Aphanomyces root rot (Race 1); with resistance to pea aphid. Reaction to root knot nematode (*M. hapla*), stem nematode, spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2016. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG C0415C3364 (Exp)

Origin and Breeding History

FG C0415C3364 is a synthetic variety with 110 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

FG C0415C3364 is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0415C3364 is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 90% purple, 5% variegated, 2% yellow, 2% cream with a trace of white. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0415C3364 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2); with resistance to stem nematode. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid, pea aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2015. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG C0415C4360 (Exp)

Origin and Breeding History

FG C0415C4360 is a synthetic variety with 110 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

FG C0415C4360 is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0415C4360 is Moderately Fall Dormant similar to FD5 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 87% purple, 5% variegated, 4% cream, 2% yellow and 2% white. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0415C4360 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid; with resistance to stem nematode. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2015. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG C0516A3153 (Exp)

Origin and Breeding History

FG C0516A3153 is a synthetic variety with 115 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2016.

Areas of Probable Adaptation

FG C0516A3153 is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Iowa, Wisconsin, Idaho and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0516A3153 is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy similar to WS2 check. Flower Color (Syn2) is 98% purple, 1% cream with a trace of yellow, white and variegated. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0516A3153 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1) and Aphanomyces root rot (Race 2); with resistance to pea aphid and spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*), stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2016. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG C0516C4155 (Exp)

Origin and Breeding History

FG C0516C4155 is a synthetic variety with 120 parent plants. Parent clones were selected for forage yield, persistence and resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2016.

Areas of Probable Adaptation

FG C0516C4155 is adapted to the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain areas. This variety has been tested in Washington, Iowa, Wisconsin, Idaho and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG C0516C4155 is Moderately Fall Dormant similar to FD4 check. Test variety is Extremely Winterhardy similar to WS1 check. Flower Color (Syn2) is 90% purple, 7% cream, 1% white, 1% yellow with a trace of variegated. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG C0516C4155 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1) and Aphanomyces root rot (Race 2); with resistance to pea aphid and spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*), stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced near Nampa, ID in 2016. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires the consent of the breeder. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG H0316ML103 (Exp)

Origin and Breeding History

FG H0316ML103 is a synthetic variety with 120 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2016.

Areas of Probable Adaptation

FG H0316ML103 is adapted to the North Central, Great Plains and East Central areas. This variety has been tested in Iowa, Wisconsin, Kansas and Pennsylvania and is intended for use in the North Central, East Central, Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG H0316ML103 is Fall Dormant similar to FD3 check. Test variety is Extremely Winterhardy, similar to WS1 check. Flower Color (Syn2) is 94% purple, 3% cream, 2% white with a trace of variegated and yellow. This variety has high multifoliolate leaf expression. This variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG H0316ML103 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1); with resistance to pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid, stem nematode and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2016 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG H0415A3138 (Exp)

Origin and Breeding History

FG H0415A3138 is a synthetic variety with 115 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode and Aphanomyces root rot (multiple races). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

FG H0415A3138 is adapted to the North Central and East Central areas. This variety has been tested in Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG H0415A3138 is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 94% purple 3% cream, 1% white, 1% yellow with a trace of variegated. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG H0415A3138 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2); with resistance to stem nematode and pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG H0415SN218 (Exp)

Origin and Breeding History

FG H0415SN218 is a synthetic variety with 49 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by Acid Detergent Lignin (ADL), glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (multiple races). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

FG H0415SN218 is adapted to the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions. This variety has been tested in Idaho, Washington and Kansas and is intended for use in the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG H0415SN218 is Moderately Fall Dormant similar to FD4 check. Flower Color (Syn2) is 99% purple, with a trace of cream, white, yellow and variegated. This variety has moderate multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop and dehydrated product.

FG H0415SN218 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot and stem nematode; with resistance to Aphanomyces root rot (Race 1), pea aphid and spotted alfalfa aphid. Reaction to root knot nematode (*M. hapla*) and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG H0415ST202 (Exp)

Origin and Breeding History

FG H0415ST202 is a synthetic variety with 92 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected out of salt nurseries from FGI breeding lines and were chosen for reduced lignin as measured by Acid Detergent Lignin (ADL), glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose (multiple races), Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (multiple races). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2015.

Areas of Probable Adaptation

FG H0415ST202 is adapted to the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain, regions. This variety has been tested in Idaho, Washington and Kansas and is intended for use in the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG H0415ST202 is Moderately Fall Dormant similar to FD4 check. Flower Color (Syn2) is 99% purple, with a trace of cream, white, yellow and variegated. This variety has moderate multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop and dehydrated product.

FG H0415ST202 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, stem nematode; with resistance to Aphanomyces root rot (Race 1) and pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid, Phytophthora root rot and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2015 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn1), foundation (Syn2), and certified (Syn2 or Syn3) classes will be recognized. Production of Syn2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG R412A137 (Exp)

Origin and Breeding History

FG R412A137 is a synthetic variety with 110 parent plants. Parent plants contained the commercial Roundup Ready event J101 and were selected from breeding populations previously selected for glyphosate tolerance, forage yield, forage quality, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2012.

Areas of Probable Adaptation

FG R412A137 is adapted to the North Central, East Central and Great Plains areas. This variety has been tested in Nebraska, Minnesota, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central and Great Plains regions.

Agronomic and Botanical Characteristics

FG R412A137 is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 99% purple with a trace of variegated, cream, white and yellow. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG R412A137 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and pea aphid; with resistance to stem nematode. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2012 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG R413A316 (Exp)

(Amended – Salt Tolerance to Germinating Alfalfa Seeds)

Variety Name _____

Experimental Designation(s) FG R413A316

Date A&MLVRB first recommended this variety January 26, 2018

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG R413A316 is a synthetic variety with 110 parent plants. Parent plants contained the commercial Roundup Ready event J101 and were selected from breeding populations previously selected for glyphosate tolerance, forage yield, forage quality, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents and bulked to form breeder seed in 2013.

Areas of Probable Adaptation

FG R413A316 is adapted to the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Washington, Idaho, Iowa, Wisconsin and Pennsylvania and is intended for use in the North Central, East Central, Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG R413A316 is Moderately Fall Dormant similar to FD4 check. Test variety is Very Winterhardy, similar to WS2 check. Flower Color (Syn2) is 94% purple, 3% cream, 2% variegated with a trace of white and yellow. This variety has high multifoliolate leaf expression.

FG R413A316 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2) and stem nematode; with resistance to pea aphid. Reaction to root knot nematode (*M. hapla*), spotted alfalfa aphid and blue alfalfa aphid has not been tested. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check.

Procedures for Maintaining Seed Stock:

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2018 if is accepted for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa
FG R513M225S (Exp)
(Amended - Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name _____
 Experimental Designation(s) FG R513M225S
 Date A&MLVRB first recommended this variety January, 2018
 Date(s) any previous amendments were recommended _____
 Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG R513M225S is a synthetic variety with 11 parent plants. Parent plants contained the commercial Roundup Ready event J101 and were elite plants chosen out of salt nurseries from breeding populations previously selected for glyphosate tolerance, forage yield, forage quality, persistence and/or resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was produced from a field isolation near Nampa, ID in 2013. Seed was harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG R513M225S is adapted to the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions of the U.S. and similar environments. The variety has been tested in Colorado, Washington, Idaho and Kansas. The intended use is in the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG R513M225S is moderately fall dormant similar to the FD 4 check. Flower color (Syn 2) is 99% Purple, with a trace of cream, Variegated, White and Yellow. It expresses a moderate degree of multifoliolate leaf expression. The variety is highly resistant to anthracnose, bacterial wilt, fusarium wilt, Verticillium wilt, Aphanomyces root rot (race 1), spotted alfalfa aphid. Resistant to Phytophthora root rot, pea aphid, blue alfalfa aphid and stem nematode. It has not been tested for other pest reactions. Test variety is "Roundup Ready" with a minimum of 90% of the plants expressing tolerance to Roundup herbicide as measured in a greenhouse grow-out seedling evaluation. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
 Registered _____
 Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3
 Registered None
 Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Mar 14, 2019



Alfalfa

FG R513W227S (Exp)

Origin and Breeding History

FG R513W227S is a synthetic variety with 41 parent plants. Parent plants contained the commercial Roundup Ready event J101 and were elite plants chosen out of salt nurseries from breeding populations previously selected for glyphosate tolerance, forage yield, forage quality, persistence and/or resistance to one or more of the following pests: bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root rot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was produced from a field isolation near Nampa, ID in 2013. Seed was harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG R513W227S is adapted to the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions of the U.S. The variety has been tested in Kansas, Colorado, Washington and Idaho and intended use is in the Great Plains, Winterhardy Intermountain and Moderately Winterhardy Intermountain regions of the U.S.

Agronomic and Botanical Characteristics

FG R513W227S is moderately fall dormant similar to the FD 5 check. Flower color (Syn 2) is 99% purple, with a trace of cream, variegated, white and yellow. It expresses a moderate degree of multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop and dehydrated product.

The variety is highly resistant to anthracnose (race 1), bacterial wilt, fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1) and stem nematode; with resistance to pea aphid, blue alfalfa aphid, spotted alfalfa aphid. It has not been tested for other pest reactions.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® trait is a patent protected trait; any and all seed increase on this variety requires a FGI seed production contract for Roundup Ready Alfalfa.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if it is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3 years
Registered None
Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 30, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

FG RRL414W208 (Exp)

Origin and Breeding History

FG RRL414W208 is a synthetic variety with 66 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by Acid Detergent Lignin (ADL), glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: potato leafhopper, bacterial wilt, Fusarium wilt, Verticillium wilt, anthracnose, Phytophthora root rot, stem nematode, northern root knot nematode, and Aphanomyces root rot (Race 1 and Race 2). Phenotypic and genotypic selection was used to identify the parent plants. The following germplasm sources were used in the development of this variety: various FGI experimental populations (100%). Syn1 seed was harvested in total on all parents in Nampa, ID and bulked to form breeder seed in 2014.

Areas of Probable Adaptation

FG RRL414W208 is adapted to the Moderately Winterhardy Intermountain and Winterhardy Intermountain regions. This variety has been tested in Washington and Idaho and is intended for use in the Moderately Winterhardy Intermountain and Winterhardy Intermountain regions.

Agronomic and Botanical Characteristics

FG RRL414W208 is Moderately Fall Dormant similar to the FD4 check. Flower Color (Syn2) is 98% purple, 1% white, with a trace of cream, variegated and yellow. This variety has high multifoliolate leaf expression. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

FG RRL414W208 has high resistance to anthracnose (Race 1), bacterial wilt, Fusarium wilt, Phytophthora root rot, Verticillium wilt, pea aphid and stem nematode; with resistance to Aphanomyces root rot (Race 1). Reaction to root knot nematode (M. hapla), spotted alfalfa aphid and blue alfalfa aphid has not been tested.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2014 near Nampa, Idaho. Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn1), foundation (Syn 2), and certified (Syn2 or Syn3) classes will be recognized. Production of Syn 2 foundation seed requires consent of the breeder. Forage Genetics will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively. At least one glyphosate application is required during early stand establishment so that cp4-epsps null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). The Roundup Ready® and HarvXtra™ traits are patent protected; any and all seed increases of this variety requires an FGI seed production contract for the respective traits.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2019 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> None </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa
FG RRL913T404 (Exp)
(Amended – Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name _____
 Experimental Designation(s) FG RRL913T404
 Date A&MLVRB first recommended this variety January 10, 2017
 Date(s) any previous amendments were recommended _____
 Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG RRL913T404 is a synthetic variety with 137 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: Fusarium wilt, Phytophthora root rot and stem nematode. Phenotypic and genotypic selection was used to identify the parent plants. The germplasm sources used in the development trace to various FGI experimental populations (100%). Syn1 seed was harvested from an intercross of from a field or cage isolation near Nampa, Idaho in the fall of 2013. Seed was harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG RRL913T404 is adapted to the nondormant regions of the southwest U.S. and similar environments. It has been tested in California and is intended for use in the Southwest.

Agronomic and Botanical Characteristics

FG RRL913T404 is very nondormant similar to the FD 8 check. Flower color (Syn2) is 99% purple with a trace of cream, yellow, variegated and white flowers.

FG RRL913T404 is highly resistant to *Fusarium* wilt and pea aphid and resistant to anthracnose, bacterial wilt, *Phytophthora* root rot, spotted alfalfa aphid and stem nematode. It has not been tested for other pest reactions. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. The variety is suitable for producing hay, haylage, greenchop or dehydrated product

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires consent of the breeder.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
 Registered _____
 Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
 Registered None
 Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Mar 14, 2019



Alfalfa
FG RRL913T455 (Exp)
(Amended – Salt Tolerance of Germinating Alfalfa Seeds)

Variety Name _____

Experimental Designation(s) FG RRL913T455

Date A&MLVRB first recommended this variety January 2017

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2018

Origin and Breeding History

FG RRL913T455 is a synthetic variety with 84 parent plants. Parent plants contain the commercial HarvXtra event KK179 and the Roundup Ready event J101. Plants were selected from FGI breeding lines for reduced lignin as measured by ADL, glyphosate tolerance, forage yield, persistence and/or resistance to one or more of the following pests: Fusarium wilt, Phytophthora root rot and stem nematode. Phenotypic selection and genotypic was used to identify the parent plants. The germplasm sources used in the development trace to various FGI experimental populations (100%). Syn1 seed was harvested from an intercross of from a field or cage isolation near Nampa, Idaho in the fall of 2013. Seed was harvested in total on all parents and bulked to form breeder seed.

Areas of Probable Adaptation

FG RRL913T455 is adapted to the nondormant regions of the Southwest U.S. and similar environments. It has been tested in California and is intended for use in the Southwest.

Agronomic and Botanical Characteristics

FG RRL913T455 is very nondormant similar to the FD 8 check. Flower color (Syn2) is 99% purple with a trace of cream, yellow, variegated and white flowers.

FG RRL913T455 is highly resistant to Anthracnose, *Fusarium* wilt, *Phytophthora* root rot, pea aphid, spotted alfalfa aphid and stem nematode and Moderately resistant to bacterial wilt. It has not been tested for other pest reactions. Test variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. The variety is suitable for producing hay, haylage, greenchop or dehydrated product.

Procedures for Maintaining Seed Stock

Breeder seed (Syn1) was produced in 2013 near Nampa, Idaho. Forage Genetics will maintain sufficient breeder (Syn1) and/or foundation (Syn2 or Syn3) seed for the projected life of the variety. Production of Syn3 foundation seed requires consent of the breeder.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if is accepted for certification. The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3
Registered None
Certified 6

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

Alfamax HD 2 Plus LS 1503 (Exp)

Origin and Breeding History

Alfamax HD 2 Plus (LS 1503) is a synthetic variety with 93 parent plants that was developed by Legacy Seeds, LLC. The 93 parent plants were selected phenotypically based on high forage yield, high forage quality, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2015.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

Alfamax HD 2 Plus is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 90% purple and 9% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1) and Aphanomyces root rot (race 2). It is moderately resistant to Stem Nematode. It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2015. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

L-457HD+ LS 1502 (Exp)

Origin and Breeding History

L-457HD+ (LS 1502) is a synthetic variety with 98 parent plants that was developed by Legacy Seeds, LLC. The 98 parent plants were selected phenotypically based on high forage yield, high forage quality, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2015.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

L-457HD+ is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 93% purple and 6% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1). It is moderately resistant to Stem Nematode and Aphanomyces root rot (race 2). It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2015. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

Touchstone EQ LS 1404 (Exp)

Origin and Breeding History

Touchstone EQ (LS 1404) is a synthetic variety with 90 parent plants that was developed by Legacy Seeds, LLC. The 90 parent plants were selected phenotypically based on high forage yield, high forage quality, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2014.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

Touchstone EQ is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 94% purple and 5% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1). It has moderate resistance to Aphanomyces root rot (race 2). It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid, stem nematode or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2014. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

LS 1401 (Exp)

Origin and Breeding History

LS 1401 is a synthetic variety with 102 parent plants that was developed by Legacy Seeds, LLC. The 102 parent plants were selected phenotypically based on high forage yield, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2014.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

LS 1401 is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 95% purple and 4% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1), Aphanomyces root rot (race 2) and Stem Nematode. It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2014. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

LS 1403 (Exp)

Origin and Breeding History

LS 1403 is a synthetic variety with 70 parent plants that was developed by Legacy Seeds, LLC. The 70 parent plants were selected phenotypically based on high forage yield, high forage quality, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2014.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

LS 1403 is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 97% purple and 2% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1). It has resistance to Stem Nematode. It is moderately resistant to Aphanomyces root rot (race 2). It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2014. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

LS 1405 (Exp)

Origin and Breeding History

LS 1405 is a synthetic variety with 80 parent plants that was developed by Legacy Seeds, LLC. The 80 parent plants were selected phenotypically based on high forage yield, good winter survival and the absence of root and crown diseases. Prior to going to the field nursery, the parent plants had been selected for resistance to Aphanomyces root rot (race 2). The breeder seed was produced near Nampa, ID in 2014.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

LS 1405 is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 89% purple and 10% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (race 1) and Aphanomyces root rot (race 2). It has moderate resistance to Stem Nematode. It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2014. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019



Alfalfa

LS 1501 (Exp)

Origin and Breeding History

LS 1501 is a synthetic variety with 72 parent plants that was developed by Legacy Seeds, LLC. The 72 parent plants were selected near Evansville, WI in the spring of 2015 from an old yield trial. Phenotypic selection was based on good winter survival after four winters and the absence of root and crown diseases. All of the components had previously been selected for high forage yield and high forage quality. The breeder seed was produced near Nampa, ID in 2015.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

LS 1501 is a moderately dormant variety similar to the FD5 check. Flower color (Syn 2) is approximately 96% purple and 3% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (race 1). It has resistance to Stem Nematode. It is moderately resistant to Aphanomyces root rot (race 2). It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root-knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2015. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

LS 1510 (Exp)

Origin and Breeding History

LS 1510 is a synthetic variety with 93 parent plants that was developed by Legacy Seeds, LLC. The 93 parent plants were selected phenotypically based on high forage yield, high forage quality, good winter survival and the absence of root and crown diseases. The breeder seed was produced near Nampa, ID in 2015.

Areas of Probable Adaptation

This variety is adapted for use in the North central and East central regions. It has been tested in Wisconsin and is intended for use in the North central and East central regions.

Agronomic and Botanical Characteristics

LS 1510 is a moderately dormant variety similar to the FD4 check. Flower color (Syn 2) is approximately 92% purple and 7% variegated with traces of white, yellow and cream.

This variety has high resistance to Anthracnose (race 1), Bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces (race 1) and Aphanomyces root rot (race 2). It is resistant to Stem Nematode. It has not been tested for resistance to pea aphid, spotted aphid, blue alfalfa aphid or root knot nematode.

Procedures for Maintaining Seed Stock

Breeder seed was produced in 2015. Two generations each for breeder (Syn 1 or Syn 2), foundation (Syn 2 or Syn 3), and certified (Syn 3 or Syn 4) are recognized. Legacy Seeds will maintain sufficient foundation seed (Syn 2 or Syn 3) for the projected life of the variety.

Certified Seed Availability and Publication of Certified Seed Production

Seed may be marketed in 2019. Certified seed production acreage may not be published by AOSCA and member agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 </u>
Registered	<u> </u>
Certified	<u> 6 </u>

PVP Information

No decision has been made concerning Plant Variety Protection. This information can be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa
54HVX42
L12XXP248, L12XXS248, SW248RL (Exp)
(Amended – High Resistance (HR) to Phytophthora Root Rot Disease)

Variety Name 54HVX42
 Experimental Designation(s) L12XXP248, L12XXS248, SW248RL
 Date A&MLVRB first recommended this variety February 14, 2017
 Date(s) any previous amendments were recommended _____
 Date this amendment was submitted November 30, 2018

Origin and Breeding History

54HVX42 (Experimental designations L12XXP248, L12XXS248, SW248RL) is a thirty-clone synthetic variety that was developed using the isolated crossing block method. Parent plants were selected by S&W Seed Company from an S&W Seed Company experimental for forage yield, persistence, forage quality, and or resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1&2), and stem nematode. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the USDA deregulated Roundup Ready® alfalfa transgenic events J101 (OECD unique identifiers: MON-00101). Parent plants also have reduced lignin content conferred by down regulated caffeoyl CoA 3-O-methyltransferase (CCOMT), specifically, USDA deregulated transgenic event KK179 (OECD unique identifier: MON 00179-5). Breeder seed (Syn 1) was produced in greenhouse isolation in 2012 in Arlington, WI. Seed was bulked in total.

Areas of Probable Adaptation

54HVX42 is adapted to the North Central and Moderately Winterhardy Intermountain regions of the U.S. and similar environments. The variety has been tested in Wisconsin and Washington. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States.

Agronomic and Botanical Characteristics

54HVX42 is moderately dormant, similar to the FD 4 check. Flower color (Syn 2) is 67% purple, 30% variegated, 1% cream, 1% white and a trace of yellow. Test variety 54HVX42 is “Roundup Ready®” with a minimum of 90% of plants expressing tolerance to Roundup® herbicide as measured in a greenhouse grow-out seedling evaluation. The variety is highly resistant to Anthracnose (Race 1), bacterial wilt, Fusarium wilt, Aphanomyces root rot (Race 1), Phytophthora root rot, and Verticillium wilt. It is resistant to pea aphid, spotted alfalfa aphid and stem nematode. It is moderately resistant to Aphanomyces root rot (Race 2). It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2), and certified (Syn 2 or Syn 3) classes will be recognized. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). Breeder seed (Syn 1) was produced in greenhouse isolation in 2012 in Arlington. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if 54HVX42 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
 Registered _____
 Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3 years
 Registered _____
 Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

54Q14

10YXP14, N09PY92 (Exp)

(Amended - Resistance (R) to Stem Nematode)

Variety Name 54Q14

Experimental Designation(s) 10YXP14, N09PY92

Date A&MLVRB first recommended this variety March 24, 2015

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 26, 2018

Origin and Breeding History

54Q14(Experimental designation 10YXP14, N09PY92) is an intracross of 168 parent plants (Syn 1) selected by DuPont Pioneer Hi-Bred International from Pioneer experimentals selected for forage yield, persistence, improved digestible fiber based on ADL and various fiber digestibility measurements using NIR, standability and or resistance to one or more of the following pests: bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Phytophthora* root rot, *Aphanomyces* root rot (Race1&2) and stem nematode. Parent plants were identified using phenotypic selection in selection nurseries for standability (lodging tolerance), forage quality, increased pectin, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 2) was grown in cage isolate in 2010 in Connell WA on 220 plants that were started in the greenhouse and transplanted to field. Seed was bulked in total.

Areas of Probable Adaptation

54Q14 is adapted to the moderately winterhardy and winterhardy intermountain regions of the U.S. and similar environments. The variety has been tested in Washington, Wisconsin, Michigan, and Ontario, Canada

Agronomic and Botanical Characteristics

54Q14 is moderately dormant, similar to the FD 4 check. Flower color (Syn 2) is 97% purple, 1% variegated 1% white with a trace of yellow and cream. The variety is highly resistant to *Aphanomyces* root rot (race 1), bacterial wilt, *Verticillium* wilt, *Fusarium* wilt, *Phytophthora* root rot and anthracnose. It is resistant to Northern root knot nematode (*M. hapla*), *Aphanomyces* root rot (race 2), pea aphid, stem nematode and spotted alfalfa aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation each of breeder and foundation and two generations of certified seed classes. Breeder (Syn 2), foundation (Syn 3-4), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 4 foundation seed requires consent of the breeder. Breeder seed was produced in cage isolation in 2010 in Connell, WA. S&W Seed Company will maintain sufficient foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2015 of 54Q14

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Mar 14, 2019



Alfalfa
54VR10
14XXP20R, R13XXP133 (Exp)
(Amended – Resistance (R) to Fusarium Wilt Disease)

Variety Name 54VR10
 Experimental Designation(s) 14XXP20R, R13XXP133
 Date A&MLVRB first recommended this variety January 31, 2017
 Date(s) any previous amendments were recommended January 24, 2018
 Date this amendment was submitted November 30, 2018

Origin and Breeding History

54VR10 (Experimental designation 14XXP20R, R13XXP133) is an intracross of 148 parent plants selected by S&W Seed Company from a S&W Seed Company experimental selected for forage yield, persistence, forage quality, standability, high resistance to Aphanomyces root rot (Race 2), and/or resistance to one or more of the following diseases and pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1), and stem nematode. Parent plants were identified using phenotypic selection in selection nurseries for standability (lodging resistance), forage quality, persistence, agronomic characteristics, and improved forage yield. Parent plants contain tolerance to Roundup® (glyphosate) herbicide conferred by the CP4 5-enolpyruvylshikimate-3-phosphate synthase (*cp4-epsps*) transgene, specifically, the USDA deregulated Roundup Ready® alfalfa transgenic events J101 (OECD unique identifiers: MON-00101). Breeder seed (Syn 1) was grown in the greenhouse isolation in early 2014 in Arlington, WI. Seed was bulked in total.

Areas of Probable Adaptation

54VR10 is adapted to the North Central and Moderately Winterhardy Intermountain regions of the U.S. and similar environments. The variety has been tested in Wisconsin and Washington. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States.

Agronomic and Botanical Characteristics

54VR10 is moderately dormant, similar to the FD 4 check. It is winterhardy. Flower color (Syn 2) is 98% purple, 1% white, and traces of yellow, variegated and cream. 54VR10 is “Roundup Ready®” with a minimum of 90% of the plants expressing tolerance to Roundup® herbicide as measured in a greenhouse grow-out seedling evaluation. The variety is highly resistant to Anthracnose (Race 1), bacterial wilt, Aphanomyces root rot (Race 1), Aphanomyces root rot (Race 2), Phytophthora root rot, pea aphid, and Verticillium wilt. It is resistant to spotted alfalfa aphid, Fusarium wilt and stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and two generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. At least one glyphosate application is required during early stand establishment so that *cp4-epsps* null segregant plants are removed from the seed field prior to pollination. (Null segregant plants are the plants that do not contain the Roundup Ready® trait due to normal genetic segregation in this variety). Breeder seed (Syn 1) was produced in greenhouse isolation in early 2014 in Arlington. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed will be available for sale in the spring of 2017 if 54VR10 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
 Registered
 Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3 years
 Registered
 Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa
FSG 421LH
SW1402Z, 14ZZC02, W13ZZC42 (Exp)
(Amended – Name Change)

Variety Name FSG 421LH
 Experimental Designation(s) SW1402Z, 14ZZC02, W13ZZC42
 Date A&MLVRB first recommended this variety February 14, 2017
 Date(s) any previous amendments were recommended January 24, 2018
⁸
 Date this amendment was submitted September 17, 2018

Origin and Breeding History

FSG 421LH - SW1402Z, 14ZZC02, W13ZZC42 (all experimental designations) is a 19 clone synthetic in which all parents originated from S&W germplasms, were selected based on half sib performance for forage yield under potato leafhopper pressure, persistence, forage quality, and or resistance to one or more of the following diseases and/or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1&2), and potato leafhopper resistance. Seed of the SYN 1 was bulked by component. Breeder seed (SYN 1) was grown in cage isolation in 2014 on 6 replicates of 19 parent plants in Connell, WA. SYN 1 seed was harvested by parent plant bulking all individual replicates and bulked equally by component parent plant.

Areas of Probable Adaptation

FSG 421LH is adapted to the North Central and East Central regions of the U.S. and similar environments. The variety has been tested in Wisconsin and Ohio. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain, Southeast and Great Plains areas of the United States.

Agronomic and Botanical Characteristics

FSG 421LH is moderately dormant, similar to the FD 4 check. It is very winterhardy. Flower color (Syn 2) is 36% purple, 38% variegated, 15% cream, and 10% white with a trace of yellow. The variety is highly resistant to Anthracnose (Race 1), bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, potato leafhopper and Aphanomyces root rot (Race 1 and 2). It is resistant to pea aphid, and spotted alfalfa aphid. It is moderately resistant to stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn1) was produced in greenhouse isolation in 2014 in Connell Washington. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2017 if FSG 421LH is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

**Generations Allowed –
Mark All That Apply**

Foundation X
 Registered
 Certified X

**Length of Stand Limitation –
If None, Please State**

Foundation 3 years
 Registered
 Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW1404, 14XXP04, N13XXP71 (Exp)

Origin and Breeding History

SW1404, 14XXP04, N13XXP71 (all experimental designations), is an intracross of 52 parent plants (Syn 1) selected by S&W Seed Company from S&W experimentals selected for forage yield, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1 and Race 2) and stem nematode. Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 2) was grown in cage isolation in Connell, WA in 2014. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, and the Moderately Winterhardy Intermountain areas of the United States. SW1404 has been tested in Minnesota, Wisconsin, Washington and Pennsylvania. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW1404 is moderately dormant, similar to the FD 4 check. Flower color (Syn 3) is 99% purple, with a trace of variegated, white, yellow, and cream. SW1404 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, Fusarium wilt, pea aphid, and Phytophthora root rot; with resistance to spotted alfalfa aphid and stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 2), foundation (Syn 3 or 4), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 2) was grown in cage isolation in Connell, WA in 2014. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW1404 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW1412Y, 14YYP12, W13YYP81(Exp)

Origin and Breeding History

SW1412Y, 14YYP12, W13YYP81 (all experimental designations) is an intracross of 108 parent plants (Syn 1) selected by S&W Seed Company from S&W experimentals selected for forage yield, persistence, forage quality, standability and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2013. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central and the Moderately Winterhardy Intermountain areas of the United States. SW1412Y has been tested in Wisconsin, Washington, Minnesota and Michigan. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW1412Y is moderately dormant, similar to the FD 4 check. It is very winterhardy. Flower color (Syn 3) is 98% purple, 1% white, with a trace of yellow, variegated, and cream. SW1412Y is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1), bacterial wilt, Verticillium wilt, Fusarium wilt, pea aphid, Phytophthora root rot and stem nematode; with resistance to spotted alfalfa aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

S&W Seed Company will maintain sufficient breeder seed (Syn 1) and/or foundation seed (Syn 2, or Syn 3) and/or certified seed (Syn 3, Syn 4 or Syn 5) for the projected life of the variety. Production of Syn 3 foundation seed requires the consent of the breeder. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2013. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW1412Y is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW15WPQ09, 15XXP09, W14XXP64 (Exp)

Origin and Breeding History

SW15WPQ09, 15XXP09, W14XXP64, (all experimental designations), is an intracross of 171 parent plants (Syn 1) selected by S&W Seed Company from S&W experimentals selected for forage yield, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain regions of the United States and Canada. SW15WPQ09 has been tested in Wisconsin, Washington, Idaho and Canada. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW15WPQ09 is moderately dormant, similar to the FD 5 check. It is very winterhardy. Flower color (Syn 3) is 99% purple, with a trace of yellow, white, variegated, and cream. SW15WPQ09 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, Fusarium wilt, and Phytophthora root rot; with resistance to spotted alfalfa aphid, pea aphid and stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

S&W Seed Company will maintain sufficient breeder seed (Syn 1) and/or foundation seed (Syn 2, or Syn 3) and/or certified seed (Syn 3, Syn 4 or Syn 5) for the projected life of the variety. Production of Syn 3 foundation seed requires the consent of the breeder. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW15WPQ09 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW15XCA11, 15XXC11, N14XXC70 (Exp)

Origin and Breeding History

SW15XCA11, 15XXC11, N14XXC70 (all experimental designations), is a 17 clone synthetic in which all parents originated from S&W germplasms, and were selected by S&W Seed Company from S&W experimentals selected based on half sib performance for forage yield, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015 on 6 replicates of 19 parent plants. Seed was harvested by parent and bulked equally.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, Winterhardy Intermountain, and Moderately Winterhardy Intermountain areas of the United States. SW15XCA11 has been tested in Wisconsin, Idaho, Washington, Minnesota, and Pennsylvania. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW15XCA11 is moderately dormant, similar to the FD 5 check. It is very winterhardy. Flower color (Syn 3) is 99% purple, with a trace of variegated, white, yellow, and cream. SW15XCA11 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, Fusarium wilt, and Phytophthora root rot; with resistance to spotted alfalfa aphid and pea aphid. SW15XCA11 is moderately resistant to stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW15XCA11 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW15XPQ06, 15XXP06, W14XXP61 (Exp)

Origin and Breeding History

SW15XPQ06, 15XXP06, W14XXP61, (all experimental designations), is an intracross of 109 parent plants (Syn 1) selected by S&W Seed Company from S&W experimentals selected for forage yield, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2014. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, Winterhardy Intermountain, and Moderately Winterhardy Intermountain areas of the United States and Canada. SW15XPQ06 has been tested in Wisconsin, Idaho, Washington, Minnesota, Pennsylvania and Canada. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW15XPQ06 is moderately dormant, similar to the FD 5 check. Flower color (Syn 3) is 99% purple, with a trace of variegated, white, yellow, and cream. SW15XPQ06 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), Verticillium wilt, and Phytophthora root rot; with resistance to spotted alfalfa aphid, pea aphid, and stem nematode. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2014. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW15XPQ06 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation – If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW15XPQ15, 15XXP15, N14XXP74 (Exp)

Origin and Breeding History

SW15XPQ15, 15XXP15, N14XXP74 (all experimental designations), is an intercross of 144 parent plants (Syn 1) selected by S&W Seed Company from S&W experimentals selected for forage yield, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1 and Race 2) and stem nematode. Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 1) was grown in greenhouse isolation in Connell, WA in 2014. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, Winterhardy Intermountain, and Moderately Winterhardy Intermountain areas of the United States and Canada. SW15XPQ15 has been tested in Wisconsin, Idaho, Washington, Minnesota, Pennsylvania and Canada. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW15XPQ15 is moderately dormant, similar to the FD 4 check. It is very winterhardy. Flower color (Syn 3) is 99% purple, with a trace of variegated, white, yellow, and cream. SW15XPQ15 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, Phytophthora root rot, and Fusarium wilt; with resistance to spotted alfalfa aphid, and pea aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in greenhouse isolation in Connell, WA in 2014. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW15XPQ15 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW15YCA20, 15YXC20, N14YXC92 (Exp)

Origin and Breeding History

SW15YCA20, 15YXC20, N14YXC92, (all experimental designations), is a 16 clone synthetic in which all parents originated from S&W germplasms, and were selected by S&W Seed Company from S&W experimentals based on half sib performance for forage yield, persistence, forage quality, standability and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, and Aphanomyces root rot (Race 1 and Race 2). Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015 on 6 replicates of 16 parent plants. Seed was harvested by parent and bulked equally.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, Moderately Winterhardy Intermountain, Winter hardy Intermountain areas of the United States and Canada. SW15YCA20 has been tested in Washington, Wisconsin, Pennsylvania, Minnesota, Idaho and Guelph Ontario, Canada. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW15YCA20 is moderately dormant, similar to the FD 5 check. It is extremely winterhardy. Flower color (Syn 3) is 85% purple, 10% variegated, 4% white, with a trace of yellow and cream. SW15YCA20 is highly resistant to Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, Fusarium wilt, pea aphid, and Phytophthora root rot; with resistance to spotted alfalfa aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in cage isolation in Connell, WA in 2015. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW15YCA20 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW16XPS16, W15XPS60 (Exp)

Origin and Breeding History

SW16XPS16, W15XPS60, (both are experimental designations), is an intracross of 99 parent plants (Syn 1) selected by S&W Seed Company from 2 S&W varieties selected for forage yield, persistence, forage quality, salt tolerance and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot and Aphanomyces root rot (Race 1). Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics and improved forage yield. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2015. Seed was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central, East Central, and Winterhardy Intermountain areas of the United States and Canada. SW16XPS16 has been tested in Wisconsin, Idaho, Minnesota, Pennsylvania and Canada. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW16XPS16 is moderately dormant, similar to the FD 5 check. Flower color (Syn 3) is 96% purple, 3% white, with a trace of variegated, yellow, and cream. SW16XPS16 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1), bacterial wilt, Verticillium wilt, and Phytophthora root rot; with resistance to Aphanomyces root rot (Race 2), pea aphid, and spotted alfalfa aphid. SW16XPS16 has improved forage production under salt stress similar to the tolerant check. This variety has improved salt tolerance of germinating alfalfa seeds similar to the tolerant check. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in greenhouse isolation in Arlington, WI in 2015. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW16XPS16 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation	<u> X </u>
Registered	<u> </u>
Certified	<u> X </u>

Length of Stand Limitation –

If None, Please State

Foundation	<u> 3 years </u>
Registered	<u> </u>
Certified	<u> 6 years </u>

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW16ZPD02, 16ZPD02, W15ZPD41 (Exp)

Origin and Breeding History

SW16ZPD02, 16ZPD02, W15ZPD41 (all experimental designations), is an intracross of 134 parent plants (Syn 1) in which all parents originated from S&W germplasms, and were selected for forage yield under potato leafhopper pressure, persistence, forage quality, and resistance to one or more of the following diseases or pests: bacterial wilt, Fusarium wilt, Verticillium wilt, Phytophthora root rot, Aphanomyces root rot (Race 1 and Races 2), and potato leafhopper resistance. Parent plants were identified using phenotypic selection in selection nurseries for increased forage quality, persistence, agronomic characteristics, potato leafhopper resistance, and improved forage yield. Breeder seed (Syn 1) was grown in cage isolation in 2016 in Connell, WA, and was bulked in total.

Areas of Probable Adaptation

This variety is adapted to the North Central and East Central areas of the United States. SW16ZPD02 has been tested in Ohio and Wisconsin. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain and Great Plains areas of the United States and Canada and similar environments.

Agronomic and Botanical Characteristics

SW16ZPD02 is moderately dormant, similar to the FD 4 check. Flower color (Syn 2) is 98% purple, 1% yellow, with a trace of variegated, white and cream. SW16ZPD02 is highly resistant to Anthracnose (Race 1), Aphanomyces root rot (Race 1 and Race 2), bacterial wilt, Verticillium wilt, potato leafhopper, and Phytophthora root rot; with resistance to pea aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

Seed increase is on a limited generation basis with one generation of breeder, two generations of foundation and three generations of certified seed classes. Breeder (Syn 1), foundation (Syn 2 or 3), and certified (Syn 3, 4 or Syn 5) classes will be recognized. Production of Syn 3 foundation seed requires consent of the breeder. Breeder seed (Syn 1) was grown in cage isolation in 2016 in Connell, WA. S&W Seed Co. will maintain sufficient breeder and foundation seed for the projected life of the variety. Seed stock will be maintained in secure climate controlled S&W Seed Company seed storage facilities. Stands of foundation and certified seed fields are limited to 3 and 6 years, respectively.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in the spring of 2019 if SW16ZPD02 is recommended for certification.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed –

Mark All That Apply

Foundation X
Registered
Certified X

Length of Stand Limitation –

If None, Please State

Foundation 3 years
Registered
Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected. Descriptive information can be provided to the PVP office.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW4203Z, 12ZZC03, W11ZZC55 (Exp) (Amended – High Resistance (HR) to Aphanomyces Root Rot Disease)

Variety Name _____

Experimental Designation(s) SW4203Z, 12ZZC03, W11ZZC55

Date A&MLVRB first recommended this variety February 1, 2016

Date(s) any previous amendments were recommended _____

Date this amendment was submitted November 30, 2017

Origin and Breeding History

SW4203Z, 12ZZC03, W11ZZC55 (all experimental designations) is an 18 clone synthetic in which all parents originated from S&W germplasms were selected based on half sib performance for forage yield under heavy potato leafhopper pressure, potato leafhopper resistance, persistence, forage quality, and or resistance to one or more of the following pests: bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Phytophthora* root rot, *Aphanomyces* root rot (Race1&2), and potato leafhopper resistance. Seed of the SYN 1 was bulked equally by component. Breeder seed (SYN 1) was grown in greenhouse isolation in 2011 on 10 replicates of each 18 parent plants in Arlington, WI. SYN 1 seed was harvested by parent plant bulking all individual replicate and bulked equally by component parent plant.

Areas of Probable Adaptation

SW4203Z is adapted to the North Central, and East Central areas of the United States and similar environments. SW4203Z has been tested in Wisconsin, Ohio and Illinois. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain, Great Plains, and Canada.

Agronomic and Botanical Characteristics

SW4203Z is moderately dormant, similar to the FD 4 check. It is winterhardy. Flower color (Syn 3) is 55% purple, 22% cream, 7% variegated, and 16% white with a trace of yellow. SW4203Z is highly resistance to *Anthracnose* (Race 1), bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Phytophthora* root rot, *Aphanomyces* root rot (Race 1 and Race 2), potato leafhopper and pea aphid, and resistant to spotted alfalfa aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

S&W Seed Company will maintain sufficient breeder seed (Syn 1) and/or foundation (Syn 2 or Syn 3) seed and/or certified seed (Syn 3, Syn 4 or Syn 5) for the projected life of the variety. Production of Syn 4 foundation seed requires the consent of the breeder. Seed stock will be maintained in secure climate-controlled S&W Seed Company seed storage facilities.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in 2016 of SW4203Z.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3 years
Registered _____
Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Alfalfa

SW4306, 13XXC06, N12XYC72 (Exp) (Amended – High Resistance (HR) to Stem Nematode)

Variety Name _____
Experimental Designation(s) SW4306, 13XXC06, N12XYC72
Date A&MLVRB first recommended this variety February 1, 2016
Date(s) any previous amendments were recommended _____
Date this amendment was submitted November 30, 2018

Origin and Breeding History

SW4306, 13XXC06, N12XYC72 (all experimental designations) is a 34 clone synthetic. All parents originated from S&W germplasms were selected based on half sib performance for forage yield, persistence, forage quality, and or resistance to one or more of the following pests: bacterial wilt, *Fusarium* wilt, *Verticillium* wilt, *Phytophthora* root rot, *Aphanomyces* root rot (Race1&2) and stem nematode. Seed of the SYN 1 was bulked equally by component. Breeder seed (SYN 1) was grown in greenhouse isolation in 2012 in Connell, WA on 6 replicates of each 34 parents started in the greenhouse as cuttings and transplanted to pots for crossing. SYN 1 seed was harvested by parent plant bulking all individual replicate and bulked equally by component parent plant.

Areas of Probable Adaptation

SW4306 is adapted to the North Central, and Moderately Winterhardy Intermountain areas of the United States and similar environments. SW4306 has been tested in Washington, and Wisconsin. Areas of intended use are: North Central, East Central, Moderately Winterhardy Intermountain, Winterhardy Intermountain, Great Plains, and Canada.

Agronomic and Botanical Characteristics

SW4306 is moderately dormant, similar to the FD 4 check. Flower color (Syn 3) is 99% purple, with traces of variegated, yellow, white and cream. SW4306 is highly resistant to *Aphanomyces* root rot (Race 1), bacterial wilt, *Phytophthora* root rot, spotted alfalfa aphid, stem nematode, and *Verticillium* wilt and resistant to *Aphanomyces* root rot (Race 2), *Anthraco*se (Race 1), *Fusarium* wilt, and pea aphid. It has not been tested for other pest reactions. This variety is suitable for use in producing hay, haylage, greenchop, and dehydrated product.

Procedures for Maintaining Seed Stock

S&W Seed Company will maintain sufficient breeder seed (Syn 1) and/or foundation (Syn 2 or Syn 3) seed and/or certified seed (Syn 3, Syn 4 or Syn 5) for the projected life of the variety. Production of Syn 4 foundation seed requires the consent of the breeder. Seed stock will be maintained in secure climate-controlled S&W Seed Company seed storage facilities.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available for sale in 2016 of SW4306.

The applicant requests that certified seed acreage not be published by AOSCA and its agencies.

Generations Allowed – Mark All That Apply

Foundation X
Registered _____
Certified X

Length of Stand Limitation – If None, Please State

Foundation 3 years
Registered _____
Certified 6 years

PVP Information

No decision has been made regarding submission of an application for Plant Variety Protection. If application is made, the Title V certification option will not be selected.

The information in this application may not be forwarded to the PVP office.

Date this application was submitted: Nov 29, 2018 Date recommended by the VRB: Feb 7, 2019



Hairy Vetch

Patagonia INTA Ascasubi INTA (Exp)

Origin and Breeding History

PATAGONIA INTA breeding program was conducted at the research station EEA H. Ascasubi of the National Institute for Agricultural Technology (INTA), in the south west of Buenos Aires province. The variety is a result of a five year selection period. The genetic background of PATAGONIA INTA are different populations (biotypes) from farmers. The breeding method begun with the evaluation of the local biotypes and then mass selection where individual plants were evaluated and those showing faster establishment, high number of stems/plant, resistance to foliar disease and synchronized flowering time, were selected. Cold and drought tolerance and total biomass production were also important selection criteria. Breeder seed was first produced in 2010. This variety is registered in Argentina under the name of ASCASUBI INTA.

Areas of Probable Adaptation

This variety has not been evaluated in United States although, areas where hairy vetch is adapted and with similar weather conditions where the variety was developed and tested are probable of adaptation. The variety was evaluated in the Pampean Region of Argentina. It showed excellent frost tolerance in different evaluations in the experimental field of H. Ascasubi, Pergamino, Balcarce and Oliveros. No plant mortality was observed, even after occasional snow events.

Agronomic and Botanical Characteristics

Classification: Vicia villosa Roth Productive Persistence Annual
Ploidy Diploid Flower Color Violet
% Flowering Seedling Year 100% % Leaf Marking at 50% Flowering ---
Stem Hairiness Present

Description of Variants: None observed

Additional Description and/or Information about Physiology, Pest Reaction, and Other Varietal Attributes

Procedures for Maintaining Seed Stock

Part of the breeder seed harvested in 2010 is stored in the cold chamber (<10 ° C) at the research station. The following multiplications will be made with an isolation of 200 meters for original (Breeder), 100 meters, or what is required by AOSCA for first multiplication (Foundation or Registered) and 50 meters, or what is required by AOSCA for second and third multiplication (Certified). INTA will be the entity responsible for maintaining seed stocks.

Certified Seed Availability and Publication of Certified Seed Production

Certified seed may be available in 2020.

Generations Allowed – Mark All That Apply

Foundation X
Registered X
Certified X

Length of Stand Limitation – If None, Please State

Foundation 1
Registered 1
Certified 1

Without any limitations on production fields, except the isolation requirements of AOSCA.

PVP Information

Is registered and protected in the National Institute of Seeds (INASE) in Argentina. No decision for making an application for US PVP has been made, currently.

Date this application was submitted: Nov 29, 2018

Date recommended by the VRB: Mar 14, 2019

