

**A REPORT OF THE
SUNFLOWER VARIETY REVIEW BOARD**



ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

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SUNFLOWER VARIETY REVIEW BOARD

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES (April 2016)

The Association of Official Seed Certifying Agencies (AOSCA) Sunflower Variety Review Board (SFVRB), reviewed the following varieties on April 21, 2016. The Board recommended the inclusion of these varieties for certification. Seed of these varieties may be certified, providing production meets all standards of the 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 Sunflower Variety Review Board by the applicants. The Sunflower Variety Review Board makes judgment regarding recommendation of varieties for inclusion in certification based on the data supplied. Beyond this, the Sunflower 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 Sunflower Variety Review Board can be obtained from:

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Respectfully submitted,

Gonzalo Rojas, Chairman
Sunflower Variety Review Board

2016 AOSCA SUNFLOWER VARIETY REVIEW BOARD

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Sunflower

LS444526R

1. LS444526R is a high oleic oilseed restorer line derived from the pedigree ON8330R/LS132104R//H280R*2/ZS910134R. All parents are proprietary Mycogen Seeds lines. LS444526R has an oleic acid content above 93%.
LS444526R is derived from a bulk of a F6 family tracing to a single F5 plant homozygous for high oleic.
2. Hybrids utilizing LS444526R are adapted to the major sunflower growing regions of North America and Europe, and will be used primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, overall
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	longitudinal recurved, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	orange yellow
Stigma Anthocyanin:	present, strong
Pappi Color:	rust
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	elongated
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above :

LS444526R is a medium maturing, medium height, fully branched high oleic oilseed restorer line. Some unique characteristics include: 1) lack of leaf wings, 2) orange yellow ray flowers for inside half, medium yellow for outside half, 3) orange disk flowers tipped with slight anthocyanin coloration, 4) strong anthocyanin presents of the stigmas, 5) leaf petioles streaked with purple-brown coloration. Seed is nearly solid black. +

4. No claims are made regarding resistance to disease, insects, or herbicides
5. Breeder seed increases are maintained by Mycogen Seeds under cloth bagged heads in nursery rows or in isolation cages. Up to two generations beyond breeder's seed are allowed for increase by open pollination in isolated fields for production of Foundation Seed. Isolation and other requirements will be according to the Seed Certification regulations of the state where seed is grown.
6. Certified seed of hybrids using this variety may be made available for the 2017 season. Please do not publish certified acreage.
7. It is not anticipated that a PVP application will be made on this variety

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 6, 2016

Date recommended by the VRB: May 13, 2016

Sunflower

OI4132B

1. OI4132B is a high oleic oilseed maintainer line derived from the pedigree OIN807B/ON2343B//OIN757B/EM229021B. All parents are proprietary Mycogen Seeds lines. OI4132B is resistant to imidazolinone herbicides. The imi donor genes come from the 1998 USDA public releases.
 OI4132B is derived from a bulk of a F7 family tracing to a single F6 plant homozygous for high oleic fatty acid and imidazolinone resistance.

2. Hybrids utilizing OI4132B are adapted to the major sunflower growing regions of North America and Europe, and will be used primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	very early
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: none or weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	strong
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

4. OI4132B is resistant to imidazolinone herbicides. +
5. Breeder seed increases are maintained by Mycogen Seeds under cloth bagged heads in nursery rows or in isolation cages. Up to two generations beyond breeder's seed are allowed for increase by open pollination in isolated fields for production of Foundation Seed. Isolation and other requirements will be according to the Seed Certification regulations of the state where seed is grown. +
6. Certified seed of hybrids using this variety may be made available for the 2018 season. Please do not publish certified acreage.
7. It is not anticipated that a PVP application will be made on this variety

Sunflower

OI4134B

1.

OI4134B is a high oleic oilseed maintainer line derived from the pedigree OIN807B/ON2343B//OIN757B/EM229021B. All parents are proprietary Mycogen Seeds lines. OI4134B is resistant to imidazolinone herbicides. The imi donor genes come from the 1998 USDA public releases

OI4134B is derived from a bulk of a F7 family tracing to a single F6 plant homozygous for high oleic and imidazolinone resistance.
2.

Hybrids utilizing OI4134B are adapted to the major sunflower growing regions of North America and Europe, and will be used primarily for vegetable oil.

3.

Flowering (relatively early, medium, or late?):	very early
Height (relatively short, medium or tall?):	short
Branching Type:	absent,
Distal Leaf Shape:	broad triangular
Leaf Attitude:	low
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	longitudinal recurved, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: none or weakly expressed color: grey

Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

4.

OI4134B is a very early flowering/maturing, short height, single headed maintainer female parent. Some unique characteristics include: 1) yellow rather than orange disk flower color, 2) elongated bracts with long bract tips, 3) 4 days earlier flowering than its sister line OI4132B, 4) 8 inches shorter than sister line OI4134B. Seed is mostly black with mostly marginal rather than lateral gray striping. In some environments, up to 15% of plants may express basal branching. +
4.

OI4134B is resistant to imidazolinone herbicides. +
5.

Breeder seed increases are maintained by Mycogen Seeds under cloth bagged heads in nursery rows or in isolation cages. Up to two generations beyond breeder's seed are allowed for increase by open pollination in isolated fields for production of Foundation Seed. Isolation and other requirements will be according to the Seed Certification regulations of the state where seed is grown.
6.

Certified seed of hybrids using this variety may be made available for the 2018 season. Please do not publish certified acreage.
7.

It is not anticipated that a PVP application will be made on this variety

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 6, 2016

Date recommended by the VRB: May 13, 2016

Sunflower

OID4120R

1. +
- OID4120R is a high oleic oilseed restorer line derived from the pedigree CNE922R*2//OND163R/OIN163R. All parents are proprietary Mycogen Seeds lines. OID4120R is resistant to imidazolinone herbicides. The imi donor source comes from the 1998 USDA public releases.
- OID4120R is derived from a bulk of a BC1F7 family tracing to a single BC1F6 plant homozygous for high oleic and imidazolinone resistance.
2. +
- Hybrids utilizing OID4120R are adapted to the major sunflower growing regions of North America and Europe, and will be used primarily for vegetable oil.

3. +
- | | |
|---|---|
| Flowering (relatively early, medium, or late?): | very early |
| Height (relatively short, medium or tall?): | short |
| Branching Type: | present, overall |
| Distal Leaf Shape: | broad triangular |
| Leaf Attitude: | low |
| Leaf Color: | medium green |
| Ray Flowers: | medium density, narrow ovate |
| | longitudinal recurved, medium length |
| Disk Flower Color: | yellow |
| Pollen Color: | yellow |
| Receptacle Shape: | weakly convex |
| Seed Outer Pericarp Color: | black |
| Stripe Appearance: | marginal: weakly expressed center: none or weakly expressed color: grey |
| Leaf Serration: | medium |
| Leaf Blistering: | weak |
| Ray Flower Color: | medium yellow |
| Stigma Anthocyanin: | absent, |
| Pappi Color: | green |
| Head (neck) Attitude: | half-turned down with straight stem |
| Seed Shape: | ovoid elongated |
| Seed Thickness: | medium |
| Hypocotyl Anthocyanin: | absent, |

State expected variants or other varietal information not described above :

- OID4120R is a very early flowering/maturing, short height, branching male R-line parent. Some unique characteristics include: 1) very large leaf auricles, 2) yellow rather than orange disk flower color, 3) narrow leaf canopy, 4) less than average number of leaves giving sparse appearance. Seed is mostly black with narrow gray marginal stripes and very weakly expressed lateral stripes. +
4. +
- OID4120R is resistant to imidazolinone herbicides. See table in attachment.
5. +
- Breeder seed increases are maintained by Mycogen Seeds under cloth bagged heads in nursery rows or in isolation cages. Up to two generations beyond breeder's seed are allowed for increase by open pollination in isolated fields for production of Foundation Seed. Isolation and other requirements will be according to the Seed Certification regulations of the state where seed is grown.
6. +
- Certified seed of hybrids using this variety may be made available for the 2018 season. Please do not publish certified acreage.
7. +
- It is not anticipated that a PVP application will be made on this variety

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 6, 2016

Date recommended by the VRB: May 13, 2016

Sunflower

ZN4435B

1.

ZN4435B is a high oleic oilseed maintainer line derived from the pedigree ON7436B*2/NS1982R. All parents are proprietary Mycogen Seeds lines. ZN4435B has an oleic acid content above 93%.
 ZN4435B is derived from a bulk of a BC1F6 family tracing to a single BC1F5 plant homozygous for high oleic.
2.

Hybrids utilizing ZN4435B are adapted to the major sunflower growing regions of North America and Europe, and will be used primarily for vegetable oil.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	absent, only basal
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	low
Leaf Color:	light green
Ray Flowers:	medium density, narrow ovate
	longitudinal recurved, long
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	strong
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, strong
Pappi Color:	rust
Head (neck) Attitude:	turned down with slightly curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above :

4.

ZN4435B is a medium-late maturing, medium height, single headed maintainer female parent. Some unique characteristics include: 1) lack of leaf wings, 2) long and narrow ray flowers, 3) long bract tips, 4) noticeably lighter green leaf color. Seed is nearly solid black. In some environments, up to 15% of plants may express basal branching.
5.

No claims are made regarding resistance to disease, insects, or herbicides
6.

Breeder seed increases are maintained by Mycogen Seeds under cloth bagged heads in nursery rows or in isolation cages. Up to two generations beyond breeder's seed are allowed for increase by open pollination in isolated fields for production of Foundation Seed. Isolation and other requirements will be according to the Seed Certification regulations of the state where seed is grown.
7.

Certified seed of hybrids using this variety may be made available for the 2017 season. Please do not publish certified acreage.
8.

It is not anticipated that a PVP application will be made on this variety

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 6, 2016

Date recommended by the VRB: May 13, 2016

Sunflower

7PNWF24B

1. 7PNWF24B is a linoleic oil type, imidazolinone resistant, maintainer line developed by Pioneer Hi-Bred International that derives from the cross N0626LG/B0391LG//N0736LG. N0626LG, B0391LG & N0736LG are all Pioneer proprietary lines. Selections were made for imidazolinone resistance, oil content, shorter plant stature, earlier flowering and yield, as assessed in hybrid combination.

The pedigree method was used in the development of 7PNWF24B. It is a bulk of F12 seed tracing back to single F11 selection. The sterile analog derives from CMS PET1 cytoplasm following 11 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing 7PNWF24B have been tested in and are adapted to the growing regions of Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, fusiform
	flat, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	grey
Stripe Appearance:	marginal: weakly expressed center: none or weakly expressed color: grey
Leaf Serration:	fine
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, medium

State expected variants or other varietal information not described above :

7PNWF24B is a linoleic type, imidazolinone resistant maintainer line. Compared to public line HA89, 7PNWF24B blooms and matures 1 day later and is taller in height. The broad triangular to rounded leaves are longer and wider than HA89, with a fine serration. The ovoid wide seed is, 0.5 mm longer than HA89. 7PNWF24B has seed that is gray with gray stripes. Hypocotyl anthocyanin is medium. +

4. The variety is resistant to imidazolinone herbicide.

5. Pioneer Hi-Bred International will be responsible for maintenance of all seeds stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: March 14, 2016

Date recommended by the VRB: May 24, 2016

Sunflower

F1316HG

1. F1316HG is an oleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross U0458HG/T0428LG. U0458HG and T0428LG are both Pioneer proprietary lines. Selections were made for medium flowering, disease resistance, oil & fatty acid content and yield, as assessed in hybrid combination.
 The pedigree method was used in the development of F1316HG. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 4 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing F1316HG have been tested in and are adapted to the growing regions of Central, Eastern and Western Europe

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	tall
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly concave
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with slightly curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

1316HG is an oleic oil type maintainer line. Compared to the public line HA89, F1316HG blooms 1 day later and is taller than HA89. The leaves are broad triangular to acuminate and the leaf auricles are weakly expressed. The involucre bracts are medium long and neither clearly elongated nor rounded. The seed is ovoid wide and black with grey stripes. Hypocotyl has no anthocyanin coloration. +

4. F1316HG claims no resistance to the common sunflower diseases and insects pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2016

Date recommended by the VRB: May 27, 2016

Sunflower

F1319LG

1. F1319LG is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross H04DFLG/N0626LG. H04DFLG and N0626LG are both Pioneer proprietary lines. Selections were made for mid-early flowering, oil & fatty acid content, disease resistance and yield, as assessed in hybrid combination.
 The pedigree method was used in the development of F1319LG. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 4 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing F1319LG have been tested in and are adapted to the growing regions of Central, Eastern and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	light green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: strongly expressed center: weakly expressed color: grey
Leaf Serration:	fine
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	rounded
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above :

1319LG is a linoleic oil type maintainer line. Compared to the public line HA89, F1319LG blooms 3 days earlier. The leaves are broad triangular to rounded with fine serration and larger auricles than HA89. The involucre bracts are medium long and neither clearly elongated nor rounded. The seed is rounded and smaller than HA89. F1319LG has black seeds with grey lateral and marginal stripes. +

4. F1319LG claims no resistance to the common diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2016

Date recommended by the VRB: May 27, 2016

Sunflower

H1311LG

1. H1311LG is conventional, linoleic oil type, maintainer line developed by Pioneer Hi-Bred International that derives from the cross T0511LG/H0647LG. Both T0511LG & H0647LG are Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil and yield as assessed in hybrid combinations.

The pedigree method was used in the development of H1311LG. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 4 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing H1311LG have been tested in and are adapted to the growing regions of Central, Eastern, and Western Europe

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	tall
Branching Type:	absent,
Distal Leaf Shape:	broad triangular
Leaf Attitude:	medium
Leaf Color:	dark green
Ray Flowers:	Less than, broad ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with slightly curved stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

Compared to the public line HA89, H1311LG blooms 2 days earlier and matures earlier. The cordate leaves are larger than HA89 and darker green. The broadly ovate, yellow ray flowers are shorter than HA89. The seed is ovoid wide, longer & heavier, than HA89. H1311LG has seed that are black with grey lateral and marginal stripes. Hypocotyl has no anthocyanin coloration. +

4. H1311LG claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted:

Date recommended by the VRB:

Sunflower

PH5066R

1. PH5066R is a Sulfonylurea resistant, high oleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the backcross B0652HM/B0641HM//5*D0249QM. D0249QM, B0641HM and B0652HM are Pioneer proprietary lines. B0652HM/B0641HM is a Sulfonylurea resistant line used as the donor for herbicide resistance. Selections were made for Sulfonylurea resistance and recurrent parent traits.
The pedigree method was used in the development of PH5066R. It is a bulk of BC5F5 seed tracking back to a single BC5F4 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing PH5066R have been tested and are adapted to the growing regions of the Northern Plains of the U.S. and Central, Eastern, and Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: strongly expressed color: grey
Leaf Serration:	fine
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, weak
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above :

PH5066R is a high oleic type, Sulfonylurea resistant restorer line. Compared to the public line RHA274, PH5066R blooms 2 days later and is shorter. Hypocotyl anthocyanin is present. The type of branching is predominantly apical and the head attitude is half-turned down with straight stem.

4. This variety is resistant to Sulfonylurea herbicide

5. Pioneer Hi-Bred international will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2017. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 11, 2016

Date recommended by the VRB: May 17, 2016

Sunflower

PHB055

1. PHB055 is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross LC06B/HA291. LC06B is an inbred licensed for use from the Institute for Cereals and Industrial Crops (Fundulea) and HA291 is a public line from USDA. Selections were made for earlier flowering, shorter plant height, oil and yield, as assessed in hybrid combination.

The pedigree method was used in the development of PHB055. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing PHB055 have been tested in and adapted to the growing regions of the Northern plains of the U. S. and Central, Eastern and Western Europe.

3. Flowering (relatively early, medium, or late?):	early
Height (relatively short, medium or tall?):	very short
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	light green
Ray Flowers:	Less than, broad ovate
	flat, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Receptacle Shape:	deformed
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, weak
Pappi Color:	green
Head (neck) Attitude:	vertical
Seed Shape:	ovoid wide
Seed Thickness:	thick
Hypocotyl Anthocyanin:	present, strong

State expected variants or other varietal information not described above :

PHB055 is a linoleic oil type maintainer line. Compared to the public line HA89, PHB055 blooms earlier and is shorter. Anthocyanin coloration of stigma is present. Head attitude is vertical and head shape of grain is deformed.

4. PHB055 claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted:

Date recommended by the VRB:

Sunflower

PHB113

1. PHB113 is a linoleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross LC06B/HA291. LC06B is an inbred licensed for use from the Institute for Cereals and Industrial Crops (Fundulea) and HA291 is a public line from USDA. Selections were made for earlier flowering, shorter plant height, oil and yield, as assessed in hybrid combination.

The pedigree method was used in the development of PHB113. It is a bulk of F7 seed tracing back to a single F6 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing PHB113 have been tested in and adapted to the growing regions of the Northern plains of the U. S. and Central, Eastern and Western Europe.

3. Flowering (relatively early, medium, or late?):	early
Height (relatively short, medium or tall?):	short
Branching Type:	absent,
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	light green
Ray Flowers:	Less than, narrow ovate
	flat, medium length
Disk Flower Color:	yellow
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color:
Leaf Serration:	medium
Leaf Blistering:	medium
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, medium
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	present, strong

State expected variants or other varietal information not described above :

PHB113 is a linoleic oil type maintainer line. Compared to the public line HA89, PHB113 blooms earlier and is shorter. Anthocyanin coloration of stigma is present. Head attitude is half-turned down with straight stem and head shape of grain is convex. Stripes on seed are absent.

4. PHB113 claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted:

Date recommended by the VRB:

Sunflower

T1334HG

1. T1334HG is an oleic oil type maintainer line developed by Pioneer Hi-Bred International that derives from the cross T0511LG/T0243DB1HG. T0511LG & T0243DB1HG are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil and fatty acid content and yield, as assessed in hybrid combination.
 The pedigree method was used in the development of T1334HG. It is a bulk of F8 seed tracking back to a single F7 selection. The sterile analog derives from the CMS PET1 cytoplasm following 6 generations of backcrossing. It is homozygous dominant for single heads.

2. Hybrids utilizing T1334HG have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central & Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	medium
Branching Type:	absent,
Distal Leaf Shape:	broad triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, broad ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

4. T1334HG is an oleic type maintainer line. Compared to the public line HA89, T1334HG blooms earlier. Hypocotyl anthocyanin is absent. The leaf serration is medium and the auricles small. The head attitude at maturity is turned down with straight stem.

5. T1334HG claims no resistance to the common sunflower diseases and insect pests.

6. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

7. Certified seed is first expected to be available in 2017. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 10, 2016

Date recommended by the VRB: May 17, 2016

Sunflower

T1370SUHM

1. T1370SUHM is a Sulfonylurea resistant, oleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross B0345HM/D0252JB1HM. B0345HM & D0252JB1HM are all Pioneer proprietary lines. D0252JB1HM is a Sulfonylurea resistant line used as the donor for herbicide resistance. Selections were made for Sulfonylurea resistance, earlier flowering, shorter plant height, oil and fatty acid content and yield, as assessed in hybrid combination.
The pedigree method was used in the development of T1370SUHM. It is a bulk of F7 seed tracking back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing T1370SUHM have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central & Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	narrow triangular
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	weakly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

4. T1370SUHM is an oleic type, Sulfonylurea resistant restorer line. Compared to the public line RHA274, T1370SUHM blooms later and is shorter. The disc flower stigma anthocyanin is absent. The head attitude is half-turned down with straight stem.

5. T1370SUHM is resistant to Sulfonylurea herbicide

6. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

7. Certified seed is first expected to be available in 2017. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 10, 2016

Date recommended by the VRB: May 17, 2016

Sunflower

T1460LM

1. T1460LM is a linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross H0560JB2LM/T0860LM. H0560JB2LM and T0860LM are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil content and yield, as assessed in hybrid combination.
The pedigree method was used in the development of T1460LM. It is a bulk of F7 seed tracking back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing T1460LM have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central & Western Europe.

3. Flowering (relatively early, medium, or late?):	early
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, weak
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

T1460LM is a linoleic type restorer line. Compared to the public line RHA274, T1460LM blooms earlier and is shorter. The disc flower stigma anthocyanin is absent. The bract length is long. The plant is overall branched and head size is medium. T1460LM has seed that are striped black with grey stripes, both marginally and laterally.

4. T1460LM claims no resistance to the common sunflower diseases and insect pests.

5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

6. Certified seed is first expected to be available in 2017. Please do not publish certified seed production acreage.

7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 10, 2016

Date recommended by the VRB: May 17, 2016

Sunflower

T1463LM

1. T1463LM is a linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross T0267JB1LM/D0250LM. T0267JB1LM and D0250LM are all Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant height, oil content and yield, as assessed in hybrid combination.
The pedigree method was used in the development of T1463LM. It is a bulk of F7 seed tracking back to a single F6 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing T1463LM have been tested in and are adapted to the growing regions of the Northern Plains of the U.S. and Central & Western Europe.

3. Flowering (relatively early, medium, or late?):	medium
Height (relatively short, medium or tall?):	short
Branching Type:	present, predominantly apical
Distal Leaf Shape:	broad triangular to rounded
Leaf Attitude:	medium
Leaf Color:	medium green
Ray Flowers:	medium density, narrow ovate
	flat, medium length
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: none or weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	present, weak
Pappi Color:	green
Head (neck) Attitude:	half-turned down with straight stem
Seed Shape:	ovoid wide
Seed Thickness:	medium
Hypocotyl Anthocyanin:	absent,

State expected variants or other varietal information not described above :

4. T1463LM is a linoleic type restorer line. Compared to the public line RHA274, T1463LM blooms later and is shorter. The disc flower stigma anthocyanin is absent. The leaf auricles are small. The head attitude is half-turned down with straight stem.

5. T1463LM claims no resistance to the common sunflower diseases and insect pests.

6. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.

7. Certified seed is first expected to be available in 2017. Please do not publish certified seed production acreage.

Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 10, 2016

Date recommended by the VRB: May 17, 2016

Sunflower

U06TSLM

1. U06TSLM is a linoleic oil type restorer line developed by Pioneer Hi-Bred International that derives from the cross F0001LM/ U01P6LM. Both F0001LM & U01P6LM are Pioneer proprietary lines. Selections were made for earlier flowering, shorter plant stature, oil content and yield, as assessed in hybrid combination.
 The pedigree method was used in the development of U06TSLM. It is a bulk of F12 seed tracing back to a single F11 selection. It is homozygous for dominant fertility restoration of the CMS PET 1 cytoplasm.

2. Hybrids utilizing U06TSLM have been tested in and are adapted to the growing regions of Central, Eastern, Southern and Western Europe.

3. Flowering (relatively early, medium, or late?):	late
Height (relatively short, medium or tall?):	medium
Branching Type:	present, only apical
Distal Leaf Shape:	broad triangular to acuminate
Leaf Attitude:	high
Leaf Color:	medium green
Ray Flowers:	medium density, fusiform
	flat, short
Disk Flower Color:	orange
Pollen Color:	yellow
Receptacle Shape:	strongly convex
Seed Outer Pericarp Color:	black
Stripe Appearance:	marginal: none or weakly expressed center: weakly expressed color: grey
Leaf Serration:	medium
Leaf Blistering:	weak
Ray Flower Color:	medium yellow
Stigma Anthocyanin:	absent,
Pappi Color:	green
Head (neck) Attitude:	turned down with straight stem
Seed Shape:	ovoid elongated
Seed Thickness:	thin
Hypocotyl Anthocyanin:	present, weak

State expected variants or other varietal information not described above :

U06TSLM is a linoleic type restorer line. Compared to the public line RHA274, U06TSLM blooms 2 days later and is a medium-tall line. The leaves are broad triangular to acuminate. The yellow ray flowers are short, fusiform and flat and the bracts are medium green. U06TSLM has seed black with grey stripes, both marginally & laterally. Hypocotyl anthocyanin is present of weak strength. +

4. U06TSLM claims no resistance to the common sunflower diseases and insect pests.
5. Pioneer Hi-Bred International will be responsible for the maintenance of all seed stocks. Foundation seed will be produced in open pollinated field increases in isolation as prescribed by the state where the seed is grown. A maximum of two generations beyond breeder seed will be allowed. Breeder seed will originate from cage isolations or, on occasion, from controlled bagging in nursery rows.
6. Certified seed is first expected to be available in 2016. Please do not publish certified seed production acreage.
7. Application for protection under the Plant Variety Protection Act will not be made.

INFORMATION BELOW FOR AOSCA INTERNAL USE ONLY

Date this application was submitted: Mar 14, 2016

Date recommended by the VRB: Jun 8, 2016