2020 AOSCA Southern Region Meeting
Remote Meeting
April 14, 2020
Minutes

The Southern Region Meeting scheduled to be held on April 2, 2020 in St. Louis, MO, was cancelled due to the COVID-19 pandemic. Instead, the meeting was held remotely using a videoconference service, on Tuesday, April 14, 2020.

The meeting was moderated by Sarah Wilbanks, Clemson University, South Carolina. The Chair was Richard Arnett, Missouri Crop Improvement Association. The scribes were the AOSCA staff, Chet Boruff, Peggy Gromoll, and Lynn Reeh.

Participants were: James Chastain and Meredith Martinez (AR); Brad Stancil and Sarah Wilbanks (Clemson University, SC); John Beuttenmuller (FL); Terry Hollifield, Billy Skaggs, and Blake Fleeman (GA); Board Vice-President Doug Miller (IL); Ben Eggett (KY); Greg Flint (MS); Richard Arnett (MO); Bill Foote, Dustin Auman, and Henry Edmisten (NC); Board President Ken Bertsch and Steve Sebesta (ND); Roger Osburn and Jeff Wright (OK); Andrew Altishin (OR); Jim Bostick and Brandon Dillard (SSCA); Matthew Young (TN); Jeff Claxton (TX); Tom Hardiman and Jerry Rogers (VA); Joshua Arbaugh (WVA); John Petty (WI); Mike Moore (WY); CEO Chet Boruff, Administrative Assistant Peggy Gromoll, and Office Assistant Lynn Reeh (AOSCA staff).

Chair Richard Arnett called the meeting to order at 9:05AM, Eastern. Wilbanks conducted a short videoconference tutorial. Because this was a virtual environment, Arnett reminded participants that only Vested Members or their proxies may vote. Any votes needed will be taken by voice. If not unanimous, Boruff will conduct a roll call vote.

The AOSCA anti-trust policy was reviewed.

Motion passed to approve the 2020 Southern Region Meeting agenda as distributed.

Motion passed to approve the 2019 Southern Region Meeting minutes as distributed.

The AOSCA anti-trust policy was reviewed.

The AOSCA report was given by Chet Boruff. The Southern Region Fund balance is $26,413.29. Boruff noted that the 2023 Annual Meeting would likely be in the Southern Region.

Boruff reported that the Board of Directors typically meets twice a year, a mid-winter meeting in March and at the summer annual meeting. Due to the COVID-19 pandemic, the 2020 mid-winter meeting, scheduled for March 18, 2020, in Puerto Rico, was cancelled and replaced with conference calls. Board meeting minutes can be found in the

Members Area of the AOSCA website. In the interest of time and due to the virtual environment, Board representative reports were waived. Boruff reminded the participants that at the conclusion of the meeting they will elect a representative to the Board. Jim Bostick's term expires this year.

In addition, the Region will need to elect a representative to the Council at the conclusion of the meeting. Tom Hardiman's term expires this year.

Boruff presented the financial reports. Total equity for the Association at the end of 2019 was $680,401.

AOSCA income is generated from internal sources such as dues and assessments, investment earnings, and VRB income. In addition, income is received from external sources such as project management, when possible.

Boruff reviewed assessment acres for the years 2005-2019, noting there are peaks and valleys throughout. The 2013 assessment acres were 3,052,756 at $.07/acre. For 2019, acres were 2,662,927 at $.08/acre. Even though acres have significantly decreased, with the assessment increase to $.08/acre, AOSCA is at about the same income from assessments as the 2013 acres at $.07/acre. This topic was discussed at the recent Board meetings and an assessment increase is not anticipated in the near future.

Boruff reported on the number of VRB applications for the years 2012-2020. These vary from year to year and for the different boards but notably for 2020, the number of Grass VRB number of applications was considerably lower, dropping to (28) new variety submissions, compared to (73) for 2019. Boruff expressed thanks to all of the VRB Chairs and Vice-Chairs for their work and commitment to the Boards.

There were no on-site Agency evaluations conducted in 2019 and they have been postponed for this year due to travel restrictions.

The 2020 AOSCA Annual Meeting, scheduled to be held in Seattle in June, was cancelled due to COVID-19 concerns and travel restrictions. The contracted hotel agreed to waive penalty fees if the meeting could be rescheduled for 2021. AOSCA is in the process of revising that contract. Boruff requested that members please keep this year's Annual Meeting dates free, June 22-24, as we will use remote meetings and are currently working on a revised schedule. Commodity and General Committee Chairs will be contacted to see if a meeting is needed and be held via conference call or another virtual format. Awards and recognitions will be postponed. At the recent Board meetings, action was passed to move all meetings (regional and Annual) forward one year, to be held in the same locations, same hotels, and same time frame if possible.

Boruff reported that AOSCA will participate in the Pioneer IRM project again in 2020. USEPA has shifted the focus to cotton producing states. Assessments will be conducted remotely due to travel restrictions and COVID concerns, using phone or videoconferences.

USEPA requirements have not changed. Pioneer dealers and/or DSM's will help make contacts with selected growers. Target numbers are set, and customer lists are ready. May 1 is the targeted kick-off.

Boruff provided an update on the Organic Seed Finder website. It was launched on October 1, 2012 and is funded by fees from listed seed vendors. AOSCA manages the website. Number of listings has fallen short of initial projections and its use is seasonal, but the cost is low to maintain it. It also serves as a resource for organic certifiers.

Boruff gave an update on current activities regarding the hemp industry. This new segment of the seed industry has limited knowledge about seed certification and he has fielded many calls and email requests for information. State regulatory programs differ in their approach to seed certification and this has caused confusion. Seed certification can bring confidence and credibility to this new marketplace.

One of the challenges has been educating the industry to use the correct terminology. Some hemp seed growers have called stating they have grown seed and would like to get it certified. The authority to certify seed for varietal purity is granted through the US Federal Seed Act to seed certifying agencies. AOSCA does not certify seed. Instead, seed is certified by state certifying Agencies according to AOSCA Standards.

Some state regulations have confused "Certified" with "certified" or "approved". There have been many calls requesting a list of 'approved' varieties and licensed vendors. AOSCA provided hemp comments to USDA as it has been drafting its hemp regulations, has worked closely with ASTA, and answered countless inquiries. There have been several companies making improper marketing claims on their websites about AOSCA Certified Seed. When these have been brought to our attention, the companies were notified by Boruff and in nearly all cases, they removed the claims immediately.

A Hemp Variety Review Board was established at the 2019 Annual Meeting. There have been enough applications submitted to warrant a review and that will be scheduled soon, after all three regional meetings have been held.

In conclusion, Boruff reminded the group they would now be discussing the proposed standards changes for Hemp Clones, Feminized Hemp Seed, and Hemp Transplants. In addition, there are changes to the Grass VRB application to be reviewed and Hybrid Rye standards.

Following that will be the election of the Board of Directors representative and Council Vice-Chair, in addition to determining the host for the 2021 regional meeting, chair, and scribe.

John Petty (WI) led the discussion regarding the Clone Certification Standards. The subcommittee used the North Carolina sweet potato standards and the University of Madison potato standards as the basis for these standards. Petty recognized the comments

and suggestions provided by the Southern and Western Regions, Matt Raymond (IL) and Tom Hardiman (VA) and shared his view that they make this a better document. The sub-committee intentionally stayed away from writing these standards as too prescriptive, instead to be considered minimum standards that could be enhanced by individual state Agencies. Petty suggested that a new kind of label might be needed for this standard. For example, not a certification label but something like 'Source Verified'. Growers are asking for verification that "this clone came from that plant". Petty advised that it had been suggested to reconvene the working group and revise the standards per the suggestions and present a new version at the Annual Meeting. Petty questioned whether his group could do that without direction from the Board of Directors as the working group had completed the task they had been assigned. Board President Ken Bertsch concurred with reconvening the working group.

Motion passed to move proposed standard forward to the Annual Meeting, with suggested changes.

(Note – several changes to the proposed hemp standards were discussed and may be found as tracked changes at the end of this document)

Bill Foote (NC) led the discussion regarding the Feminized Certification Standards, recognizing that there have been very good suggestions provided from the Southern and Western regions. Motion passed to move proposed standards forward to the Annual Meeting, with suggested changes.

Bill Foote (NC) led the discussion regarding the Transplant Certification Standards. Motion passed to move proposed standards forward to the Annual Meeting, with suggested changes.

Steve Sebesta (ND) provided the background on the proposed standards for Hybrid Rye. After discussing with representatives from states where hybrid rye was already being produced, the subcommittee decided to use a blended Hybrid Wheat and Hybrid Rye standard approach. Motion passed to move the proposed standard forward to the Annual Meeting. Standards change proposal may be found at the end of this document.

Boruff reviewed the proposed changes to the Grass VRB Part B application. There is a reference to a 'PVP list of standard check cultivars' in the application. Per the PVP representative on the VRB, no such list is maintained by the PVP office and it was recommended this statement be removed.

Elections were held for regional representation to AOSCA Board of Directors and Certification Requirements and Standards Council.

- Nomination made for Billy Skaggs (GA) to represent the Southern region on the AOSCA board of directors for a 2-year term. Motion passed to cease nominations and cast unanimous ballot.

- Nomination made for Tom Hardiman to represent the Southern region on the AOSCA Certification Requirements and Standards Council. Motion passed to cease nominations and cast unanimous ballot.

Upcoming Southern Region Meeting Host Responsibilities

- Missouri will host the southern region meeting in 2021. It will be held in St. Louis as previously scheduled for 2020. Date will be determined and AOSCA will try to contract with The Drury Hotel that was contracted with for 2020.
- The AOSCA annual meeting is scheduled to be held in the southern region again in 2023. Oklahoma and Florida are the only 2 southern region states that have not hosted an annual meeting and will explore possibilities to host in 2023.

Arnett thanked everyone for their time and thoughtful discussions. Appreciation was also expressed to the AOSCA staff for their assistance in coordinating and managing the meeting planning.

With no further business presented for consideration, motion passed to adjourn the meeting. Meeting adjourned at 11:00AM, Eastern.

Association of Official Seed Certifying Agencies

Proposed Changes to Standards/Guidelines

Date Submitted Dec 6, 2019

Change to AOSCA: Standards X Guidelines

Crop Kind: Hemp AOSCA Commodity Committee Hemp

Proposal Sponsor Working Group formed at 2019 Annual Meeting-John Petty, Chair

Proposal Origination: AOSCA X Region Agency Other

Clone Certification Standards

Location in the AOSCA Standards/Guidelines (give specific citation): New section, V, Clone Standards, (following Seed Standards), pg 66 in Standards Book

Text of the original and amended portion of the Standards/Guidelines: New standard applying to clones. (See below)

Brief summary about the background, purpose, and intent of this change:
This protocol is intended to address the certification of hemp clones by a Certifying Agency that is a member of the Association of Official Seed Certifying Agencies (AOSCA). It covers hemp clone production in both open field and enclosed/greenhouse settings. Sections III.A and III.B of the protocol address the separate and distinct growth environment requirements of each setting respectively. All other elements of the protocol, such as definitions and inspection, apply in both settings.

Narrative addressing seed industry impact/support/concern/other:
As the hemp industry continues to evolve and expand, there is increasing interest in producing clones from eligible varieties, usually in enclosed production facilities. Seed certifying agencies have been contacted by hemp producers and the intent of this standard is to position seed certifying agencies to provide support and credibility to this portion of the industry.

Summary of discussion(s) held by AOSCA and Seed Certifying Agencies:
The need for clone standards was discussed at the 2019 AOSCA Annual Meeting and a working group was assigned the task of drafting them. The working group aggressively took up the task, held a number of conference calls, and completed its task by early December 2019

Timeline and plan for the proposal:
The draft proposal will be reviewed by seed certifying agencies prior to the regional meetings to be held in April 2020, with the goal of Council discussion and action at the 2020 AOSCA annual meeting.

Final disposition: To be determined

Hemp Clone Standards (Proposed)

I. Explanation of General Standards as Applied to Hemp

A. The General Planting stocks (plants & cuttings) Certification Standards – **needs rewording, not the above, change to the wording used on other crops:** – as adopted are basic and together with the following specific standards constitute the standards for certification of Hemp Planting Stocks.

The general requirements for seed certification found in Section I through IV of the Genetic and Crop Standards apply to (are basic) all crops, and together with the following specific standards, constitute the certified Hemp Planting standards.

B. Definitions
Clones are hemp seedlings that come from cuttings from larger plants
Structure or Field is the production area enclosed by natural borders such as ditches, tree lines, buildings, roads, or an enclosed growth facility.
Micropropagation is the science of plant multiplication in-vitro.
Cutting is used to establish a rooted cutting in the greenhouse or field.

C. The General Planting Stock Certification Standards are further defined to apply specifically to Hemp Planting Stocks. Classes and sources of certified Planting stocks are:
1. Breeder Plant Stock is material obtained by methods disclosed and declared to the Certifying Agency**.** The grower must also declare and document the manner in which lines are selected and how the Breeder Stock standard – **what is the standard – should this be struck?** is maintained.
2. Mother Plant is a plant produced from a Breeder Plant Stock.
3. Certified Plants are plants produced by growers from Mother Plants.
Certified plants may be used to produce Certified stock in the growth facility or D1 Daughter stock.
Certified plants are propagated as follows:
Mother Plants may be cut repeatedly to produce D1 Daughter Plants ~~and used for only one planting season.~~
D1 Daughter Plants are produced by cuttings from Mother Plants. D1 Daughter plants may be cut repeatedly to produce D2 Daughter Plants.
D2 Daughter plants are produced by cuttings from D1 Daughter Plants. D2 Daughter plants may be cut repeatedly to produce D3 Daughter plants.
4. The grower shall retain documentation of the parent ~~varieties of the plant(s)~~ being used to generate clones.
5. All grower records and grower developed BMPs related to the production of hemp clones shall be available for inspection by the Certifying Agency.

II. Mother Plant Production
A. All Mother plants are to be inspected by Certifying Agency periodically. **Define**
B. Inspection of structures and fields will conform to documented and verifiable production standards listed below.

III. Growth Facilities and Field Production

A. Production Requirements for Growth Facility Production

1. Facility to be free of diseases, insects, and other pests
2. Hemp clones are to be handled in such a manner as to prevent co-mingling of varieties or types.
3. Facility is to have sufficient physical barriers between growth areas of hemp and other potential contaminating crops prior to flowering and inspection to prevent cross-contamination of type

B. Production Requirements for Open Field Production

1. **Field Eligibility** - Crops should not be grown on land where remnant seed from a previous crop may germinate and produce volunteers that may cause contamination. Crops for Mother Plant and Certified classes of hemp production must not be grown on land that produced another crop of hemp in the previous 5 years. Crops for Certified class must not be grown on land that had a hemp crop in the preceding 3 years.
2. **Field Isolation –** Ten feet or an appropriate barrier to alleviate accidental mixing of plants.
3. If Dioecious male plants within the seed production field start flowering before removal from field, all plants around them should be destroyed for a radius of 10 feet. All fields or portions of fields intended for certification must have a definite boundary such as a fence, ditch, roadway, levee, or mechanical separation.

C. Inspections

1. Grower Responsibility
   a. Maintain certification standards
2. Certifying Agency Responsibility
   a. The Agency will inspect growth facilities and fields and to audit compliance with the grower developed BMPs and their effectiveness.
   b. Mother plants are inspected within seven days before first cutting of daughters for certification.
   c. Daughter plants are inspected within seven days after planting
3. General Requirements
   a. Plant increase standards are described in Section I, C,3.

IV. General Inspection Standards of Plants

A. Plants

1. Free of diseases, insects, and other pests.
2. True-to-type characteristics.

V. Reference Hemp Transplant Certification Standards

Association of Official Seed Certifying Agencies

Proposed Changes to Standards/Guidelines

Date Submitted Dec. 20, 2019

Change to AOSCA: Standards new Guidelines _____

Crop Kind: Hemp AOSCA Commodity Committee H

Proposal Sponsor Bill Foote – North Carolina Crop Improvement Agency

Proposal Origination: AOSCA _____ Region _____ Agency x Other _____

Feminized Hemp Seed Certification Standards

Location in the AOSCA Standards/Guidelines (give specific citation):
Hemp Certification Standards-supplementary section

Text of the original and amended portion of the Standards/Guidelines:
Not applicable, supplementary section

Brief summary about the background, purpose, and intent of this change:
There is demand for feminized hemp seed certification, the proposed standards address this alternate type of seed production.

Narrative addressing seed industry impact/support/concern/other:
Feminized seed production is routinely practiced in the United States. There are reported cases of successful and unsuccessful feminized seed production. Most of the reported failures have arisen from non-stable parent material and/or from a lack of understanding of good feminized seed production standards. We are confident that a solid Variety Review Board, multiple inspections of pollen donor and receptor, and variety verification (growout or fingerprinting) requirements will address the subject of Distinct, Uniform and Stable varieties. Perhaps the biggest challenge of feminized seed production is eliminating contaminating pollen sources or uncontrolled pollen transfers. The proposed standard addresses these concerns and provide a vehicle for reputable seed producers to produce high quality, highly desirable varieties.

Summary of discussion(s) held by AOSCA and Seed Certifying Agencies:
Several seed certifying agencies, primarily in the Southeastern US, and a few seed producing companies have reviewed the standard and provided comment. In most cases those suggestions have been incorporated

Timeline and plan for the proposal:
We are requesting immediate distribution to all state certifying agencies through their respective regional representatives, and we are also asking for immediate submission to the Standards Council for immediate review. Any delay in this matter will almost assuredly lead to missing an opportunity to serve reputable seed companies when they are looking for guidance and a means to separate their product from their competitors.

Final disposition: To be determined

FEMINIZED HEMP SEED (FHS) (CANNABIS SATIVA L. SUBSP. SATIVA)
CERTIFICATION STANDARDS

I. APPLICATION OF GENETIC CERTIFICATION STANDARDS

A. The general requirements for seed certification found in Section I through IV of the Genetic and Crop Standards apply (and are basic) to all crops, and together with the following specific standards, constitute the certified Feminized Hemp standards.

B. The Genetic Standards are modified as follows:

~~1. All production of hemp crops is subject to license application approval that are required by regulatory authorities in compliance of U.S. Domestic Hemp Production Program.~~

2. Only varieties of hemp approved by official seed certifying agencies, AOSCA and OECD members, are eligible for certification.

3. Designation of Classes of Seed.

a. Only the class Certified is recognized in the production of feminized hemp seed. **See c. below for addition**

b. A feminized seed variety to be certified must be produced from seed or clonal stocks approved by the official certifying agency. These seed and clonal stocks shall consist of female lines and chemically assisted pollen shedding female lines of any class of certified seed or clones.

c. Foundation and Registered classes are allowed for the purpose of variety maintenance.

4. Growers may be required ***to submit THC test results to the certified agency*** ~~by regulatory agencies to obtain THC test results~~ according to applicable regulations. Growers are required to submit THC test results to the seed certifying agency before the seed can be certified.

II. DEFINITIONS

A. Definitions

Hemp. "Hemp" is defined by the U.S. Domestic Hemp Production Program as the plant species *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis."

Common terms:

Dioecious type: with male and female flowers on separate plants.
Monoecious type: with male and female flowers on the same plant.
Reversed female: female plants that are induced to produce pollen in replacement of true male plants
Hermaphroditic plants: monoecious plants exhibiting male and female flowers, not true females
Feminized Hemp Seed (FHS): the progeny of a dioecious female plant that has been pollinated with pollen derived from the same or another dioecious female plant that has been induced to produce pollen. It is a true female plant with XX chromosomes
Pollen donor: a reversed female plant from the female line or another reversed female line to create a hybrid
Pollen receptors: female plants used to produce feminized hemp seed

Variety means a subdivision of a kind that is distinct, uniform, and stable; "distinct" in the sense that the variety can be differentiated by one or more identifiable morphological, physiological, or other characteristics from all other varieties of public knowledge; "uniform" in the sense that variations in essential and distinctive characteristics are describable; and "stable" in the sense that the variety will remain unchanged in its essential and distinctive characteristics and its uniformity when reproduced or reconstituted as required by the different categories of varieties.
Volunteer plant *is* a hemp plant that was not intentionally planted and is the results from a previous crop.
Approved Cultivar means any variety designated as eligible for production by federal or local regulatory authorities ***THC*** means delta-nine (Δ9) tetrahydrocannabinol, which is the component of Hemp regulated by federal or local regulatory authorities.

III. GROWTH FACILITY AND LAND REQUIREMENTS

A. Growth facility must only contain certified hemp production. Multiple FHS varieties may be present but no other hemp plants are allowed except for pollen parent plants that are the pollen source.

B. Growth facility must be free of all plants for a minimum of six weeks prior to receiving plants at the beginning of the crop year or production season unless the previous crop was the same variety. If sanitation is used to reduce the hemp free period, a sanitation plan must be submitted to the certifying agency. Pollen sanitation is not required if the entire greenhouse facility produces only one pollen source and other female lines are continually rogued to prevent contaminating pollen sources.

C. Certified feminized hemp seed crops must not be grown on land which:

1. *In either of the preceding 2 years produced a non-certified crop of ~~industrial~~ hemp or a different variety of ~~industrial~~ hemp.*
2. *In the preceding year produced a certified crop of the same variety.*

#1 was #2 in the original submission; #2 was #1

D. Weeds

1. The presence of Broomrape (*Orobanche* spp.) in hemps crops is cause for rejection.
2. Excessive weeds obscuring field inspection shall be grounds for rejection.

IV. GROWTH FACILITY AND FIELD STANDARDS

A. Crop Inspection

1. It is the grower's responsibility to ensure that growth facility and field inspections are conducted by the authorized inspector at least twice prior to swathing or harvesting.
2. A growth facility or field that is cut, swathed or harvested prior to crop inspection is not eligible for certification.
3. Inspections of pollen parent plants and seed parent plants must be at a stage of growth when varietal purity is best determined. Crops not inspected at the proper stage for best determining varietal purity may be cause for rejection. A minimum of two inspections are required.
   a. First inspection for pollen donor and pollen receptor types must be made just before or at early flowering. **Add: *Prior to collection or at dispersal*.**
   b. Second inspection for pollen donor and pollen receptor types must be when pollen shed is complete.
   c. Third inspection for all classes of pollen receptors must be made during seed fill.
   d. Isolation areas will be inspected for volunteer hemp plants on each inspection.

B. Specific

1. For the production of FHS varieties via pollen shedding by the chemically reversed female plants (i.e. with Silver Nitrate, Silver Thiosulphate or other chemicals that halt ethylene production and cause the formation of male flowers):
    a. Detailed records shall be created and maintained on the pollen source, such as the chemical application dates, concentration, and the pollen collection date.
    b. Pollen storage containers (if used) must be marked with Lot number and source.
    c. Chemically reversed female plants must be removed and destroyed after pollen collection is complete.
    d. Male, sporting male, and hermaphroditic plants must be removed from the growth facility or field and a record of roguing activities must be maintained.
    e. must be maintained.

C. Isolation

1. Certified feminized hemp seed fields must be isolated from all other contaminating pollen sources by the distances provided in Table 1. Roguing to eliminate all possible contaminating pollen must be accomplished prior to visible flower formation.
2. Greenhouse production of Certified feminized seed is allowed provided mechanical isolation of pollen sources is provided. Additional greenhouse requirements include:
    i. Method of pollen exclusion must be documented and submitted to the certifying agency.
    ii. Each greenhouse facility is limited to one variety or multiple varieties when one pollen source is utilized for all varieties
    iii. Each variety must be clearly labeled and easily identifiable from one another.
3. Winter production when pollen sources are not alive may reduce the isolation requirement.

Table 1
Minimum Isolation Distances Required Between Inspected Hemp and Other Crops

Inspected Crop	**Other Hemp Crops**	**Isolation Distance Required (feet)**
Feminized Hemp Seed	- Variety of hemp, or other contaminating pollen source that has pollen shedders present, this includes other greenhouse complexes - Non-certified crop of hemp	15,748
	- Different varieties of the same type of hemp with no male shedders present in field that is not for seed production. - Planted with certified seed of the same variety that meets Certified standards for varietal purity and no male shedders present in field	15,748
	- Certified seed crop of the same variety that meets Certified standards for varietal purity	3

D. Impurity Standards

1. Impurities should be removed prior to crop inspection.
2. Any combination of impurities may be reason for declining certified status.
3. Table 2 indicates the maximum number of impurities permitted by AOSCA in approximately 10,000 plants of the inspected crop. The inspector makes at least 6 counts of a total of at least 10,000 plants to determine the number of impurities. The resulting average of these counts must not exceed the maximum impurity standards in Table 2.

Table 2

Inspected Crop	**Maximum Impurity Standards per 10,000 plants in Hemp Seed Crops**	
	Maximum Number of Plants Shedding Pollen	**Maximum Number of Off-Types or Other Varieties**
Feminized Hemp Seed	**0**	**20**

IV. SEED STANDARDS

Hemp Seed Standards
Standards for Each Class

Factor	Foundation	Registered	Certified
Pure seed (minimum)	98.00%	98.00%	98.00%
Inert matter (maximum)*	2.00%	2.00%	2.00%
Weed seeds (maximum)	0.10%	0.10%	0.10%
Total other crop seeds (maximum)	0.01%	0.03%	0.08%
Other varieties (maximum)	0.005%	0.01%	0.05%
Other kinds (maximum)**	0.01%	0.03%	0.07%
Germination (minimum)	80.00%	80.00%	80.00%
Feminized Seed***			99.00%

*Inert matter shall not include more than 0.5 per cent of material other than seed fragments of the variety under consideration.
**Other kinds shall not exceed 2 per lb. (454 grams) for Foundation; 6 for Registered; 10 for Certified.
***Determined by Variety Verification Trial or approved molecular testing

Guidelines to produce Certified Hemp Seed

1. Certified Seed Production

Although traditionally a crop with a Dioecious plant type, many Monoecious varieties of hemp (*Cannabis sativa L. subsp. sativa*) have been developed. Hemp is sexually polymorphic and often produces many different ratios of intersexual plant types that can increase roguing requirements. Variety descriptions normally define these ratios.

Quality Assurance (QA) Program standards will be equal to or exceed the AOSCA Standards for certification for varietal purity of the Certified class of seed, with the following exceptions:

1. Varietal eligibility requirements
2. Seedstock eligibility

2. Certified Seed Production

Any means of processing or conditioning of seed from a production area which may contaminate the varietal purity of the seed is prohibited.

Area of Fields

When unforeseen circumstances do not permit proper maintenance of the entire field, it is recommended that the area be reduced by destroying part of the field or by isolating a part to meet the requirements. The remainder of the field must meet the requirements for certified field production.

The area of a field includes the “walkways” provided within the field to facilitate effective roguing and inspecting.

3. Recommended Production Procedures

Field Planting

a) Fields should be planted to facilitate inspection, roguing and harvesting.

b) Fields should be planted in areas easily accessible for frequent maintenance and to provide the maximum protection from outside sources of contamination, such as roadways and building sites.

c) Regulations for land requirements are minimum standards and caution is necessary in choosing land, as volunteer growth from previous crops may vary according to local conditions.

d) The regulations for isolation are minimum standards. It is always to the grower’s advantage to provide more isolation than required. When planting fields, specific requirements may influence the location and size of the field. It is a safeguard if adjacent crops are the same variety as the field and are inspected for certified status.

Roguing

a) The field must be thoroughly and intensively rogued many times throughout the crop season.

b) Off-type male flowers must be removed before the receptive stage of female flowers in the inspected crop.

c) The numbers and kinds of plants removed should be recorded and described on the appropriate forms.

d) All male flowers rogued from the crop must be removed from the production area and burial is recommended.

e) Regrowth of rogued flowers or plants must be prevented.

Harvesting, Cleaning and Storing

a) A seed grower should have access to the necessary equipment for harvesting and cleaning the seed from the field in such a manner as to ensure that the varietal purity of the seed is maintained.

b) The seed should be stored, in compliance with federal or local regulations, in a clean, cool, dry area.

c) The seed containers should be labelled for identification.

It is recommended that not more than one variety of Hemp be grown under the management of one grower or one distinct facility.

Association of Official Seed Certifying Agencies

Proposed Changes to Standards/Guidelines

Date Submitted Feb. 14, 2020

Change to AOSCA: Standards new Guidelines

Crop Kind: Hemp AOSCA Commodity Committee H

Proposal Sponsor Bill Foote – North Carolina Crop Improvement Agency

Proposal Origination: AOSCA Region Agency x Other

HEMP TRANSPLANTS CERTIFICATION STANDARDS

Location in the AOSCA Standards/Guidelines (give specific citation):
Hemp Certification Standards-supplementary section

Text of the original and amended portion of the Standards/Guidelines:
Not applicable, supplementary section

Brief summary about the background, purpose, and intent of this change:
There is demand for certified H hemp transplants. At least two agencies have been approached to provide this service in an attempt to provide production differentiation. These companies believe that certification provides credibility and value to the final product.

Narrative addressing seed industry impact/support/concern/other:
Hemp transplant growers have become part of the business landscape in North Carolina and Georgia. One company in North Carolina provides over 10,000,000 transplants annually to Southeastern US hemp growers. That company has expressed great interest in certifying transplants. Some of the transplant providers are reputable and deliver a predictable high-quality product, while others do not. The proposed standards provide a system to certify transplants derived from certified seed and clones.

Summary of discussion(s) held by AOSCA and Seed Certifying Agencies:
Several seed certifying agencies, primarily in the Southeastern US, and a few seed producing companies have reviewed the standard and provided comment. In most cases those suggestions have been incorporated

Timeline and plan for the proposal:
We are requesting immediate distribution to all state certifying agencies through their respective regional representatives, and we are also asking for immediate submission to the Standards Council for immediate review. Any delay in this matter will almost assuredly lead to missing an opportunity to serve reputable seed companies when they are looking for guidance and a means to separate their product from their competitors.

Final disposition: To be determined

HEMP TRANSPLANTS

CERTIFICATION STANDARDS

I. Application and Amplification of General Certification Standards

A. The General Seed Certification Standards, as adopted by the association are basic and together with the following specific standards constitute the standards for certification of hemp transplants; a.k.a seedlings, plugs.

B. Definitions

1. Transplants are hemp plants that originate from either seed or clones that are kept in a vegetative state (before flowering) that will be moved to another production site.
2. Clones are the aggregate of genetically identical cells or organisms asexually produced by or from a single progenitor cell or organism (i.e. hemp that comes from cuttings of mother or daughter plants).
3. Seedlings are young plants grow from seeds.
4. Plugs are young plants raised in small, individual cells, ready to be transplanted to another production site.

C. Section V. of the General Standards is amplified as follows to apply specifically to hemp seedling certification.

1. All Certified transplants must be grown from a class of certified seed or Certified clones. Proof of seed/clone eligibility shall be established by providing either a certified tag/label with invoice showing the lot number and pounds received or documentation of clone propagation under clone standards found in the Seed Certification Handbook.
2. Seed coated or pelleted by non-approved conditioners will not be eligible for certification
3. All containers must be labeled in a manner that maintains the source, identity and certification eligibility of the transplants. All containers offered for sale must be identified by the official seed certification tag/label. The tag/label must be fixed (stapled, for example) to trays so tags/labels are not misplaced.

II. Growth Facility, Field and Transplant Standards

A. Traditional outdoor plant beds (fields) will be inspected at least two times for phenotypic purity, isolation, general physical condition and appearance of plants.

B. Growth facility produced plants shall be inspected at least two times for varietal labeling, phenotypic purity, isolation, general physical condition and appearance of plants.

C. Maximum off-type or other variety shall not exceed 0.2%, or 20 in 10,000. Non-conforming plants must be removed and destroyed.

D. At the time of the final inspection, the number of transplants produced must be verified by agency personnel.

E. Transplants may be rejected for non-compliance with these standards.

F. Inspectors may also reject transplants due to unsatisfactory appearance such as any plants that are diseased, insect infestation, leggy, or otherwise stressed or any condition which prevents thorough inspection. **(Define "leggy")**

Item F was included in Item 3 in original version. Recommended Item E should stand alone and created Item F.

G. Unlabeled or inadequately labeled transplants will be ineligible for certification.
H. At the final inspection, transplants may be collected for post-control grow outs or other identification verification tests if required by agency.
I. Certifying agency personnel may conduct additional inspections as necessary to ensure certification standards are met.

III. Growth Facility, Plant Bed Soil Mix Requirements

A. Hemp transplants must not be grown on traditional outdoor plant beds (fields) which:
   1. In either of the preceding two years produced a non-certified crop of hemp or a different variety of hemp.
   2. In the preceding year produced a certified crop of a different variety

(Revise to same terminology as used in Feminized standards doc)
#2 was #1 in original version and #1 was #2

B. Hemp transplant growers using growth facilities must use a SOP (Standard Operating Procedure) and document that the facility is free of any plant material from a previous crop.
C. For growth facility production of transplants, the soil mix must be new, soil-less media, or sanitized soil mixes.
D. The presence of Broomrape *(Orobanche spp.)* in hemp crops is cause for declining Certified status.

IV. Growth Facility Isolation Standards

A. When two or more varieties are being grown in the same greenhouse or traditional outdoor plant bed (field), there must be an 18” unplanted area between the varieties. The production area, flats and/or containers for each variety must be clearly labeled in a manner that prevents mixing or misidentification.
B. Growers must handle transplants throughout the growing, harvesting, and transplant sales in a manner that prevents the accidental or mechanical mixture of containers of different varieties.

V. Labeling Standards

A. All certified transplants offered for sale must be labeled with official certification tags or labels. Each container of transplants must have an agency certification label firmly attached to be sold as certified transplants. Failure to properly label transplants at the time of sale, will revoke the certification status and will result in not being eligible for sale as certified transplants.

Association of Official Seed Certifying Agencies

Proposed Changes to Standards/Guidelines

Date Submitted April 6, 2020

Change to AOSCA: Standards X Guidelines _____

Crop Kind: Wheat & Rye Hybrids AOSCA Commodity Committee Small Grains

Proposal Sponsor Working group formed at 2019 annual meeting – Lauren Port, Chair

Proposal Origination: AOSCA X Region _____ Agency _____ Other _____

Location in the AOSCA Standards/Guidelines (give specific citation):
Cytoplasmic Male Sterile Hybrid Wheat Co-Mingled Parent Lines – 75% to 95% Hybrid Certification Standards, currently on page 114 of standards handbook.

Text of the original and amended portion of the Standards/Guidelines: *red text with strikethrough is to be deleted, red text that is underlined is to be added.*

CYTOPLASMIC MALE STERILE HYBRID WHEAT and HYBRID RYE
CO-MINGLED PARENT LINES – 75% to 95% HYBRID
CERTIFICATION STANDARDS
(including changes effective June 2017 and June 2018)

I. APPLICATION OF GENETIC CERTIFICATION STANDARDS

A. The general requirements for seed certification found in Section I through IV of the Genetic and Crop Standards apply to (are basic) all crops, and together with the following specific standards, constitute the certified Cytoplasmic Male Sterile Hybrid Wheat and Hybrid Rye – Co-Mingled Parent Lines – 75% to 95% Hybrid standards.

B. The Genetic Standards are modified as follows:

1. Section I. Eligibility Requirements for Varieties.
Standards applicable to specific crop varieties shall apply to the production of pollinator lines.

2. Section II. Designation of Classes of Seed.

a. A commercial hybrid is one to be planted for any use except seed production.

b. Only the class Certified is recognized in the production of commercial hybrid seed.

c. A commercial hybrid to be certified must be produced from certified Foundation class seed stocks that have been field inspected. These seed stocks shall consist of male steriles, inbred lines, and/or hybrids.

d. Definition of parental types
i) Seed Parent (A-line): Cytoplasmic male sterile line (CMS), that is genetically identical to the Maintainer line, which when pollinated by a Restorer, ~~results in~~ produces hybrid seed;
ii) Maintainer (B-line): A line which is genetically identical to the Seed Parent but with normal fertile cytoplasm used as a pollinator to increase Seed Parent (A-line) seed while maintaining the male sterility of the CMS ~~seed~~ Seed ~~parent~~Parent.
iii) Restorer (R-line): Any male fertile line possessing nuclear restoration genes used as a pollinating male parent in the production of ~~a~~ commercial hybrid seed.

3. Section III. Production of Seed – Seed production fields or parts of fields shall be inspected as follows:

a. A X B production: Seed parents shall be inspected three (3) times.
i) The first inspection shall occur after heading but before anthesis begins to check for off-type plants.
ii) Two inspections should occur during anthesis to check for shedders in the Seed Parent (A-line), the presence of which shall immediately be communicated with the seed producer to allow for roguing.

b. Male lines (Maintainers and Restorers) shall receive at least one inspection for purity after the crop is fully headed.

c. Commercial hybrid production fields shall be inspected at least once.

II. LAND REQUIREMENTS

A. Pollinator lines planted for the production of Foundation class seed shall be planted on land on which another kind was grown for the two year's previous crops.

B. Maintenance of sterile lines for the production of Foundation class seed shall be planted on land on which another kind was grown for the two year's previous crops.

C. Certified class commercial hybrid fields shall be planted on fields on which the previous crop was another kind.

III. FIELD STANDARDS.

A. General

1. Isolation

a. (AXB): Fields or parts of fields acceptable for production of seed parents to be used for the production of seed of a hybrid must be so located that the seed parent is not less than 2,640 feet ~~(1/2 miles)~~ [804.67 meters] for wheat and 3,280 feet [1000 meters] for rye from fields of other kinds or varieties which would provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification.

~~b.~~ ~~Male sterile~~ Seed Parent and Maintainer lines shall be separated from each other by an unplanted strip of ground adequate to prevent mechanical mixture.

b. Maintainer (B-Line) and Restorer (R-Line) increases. Fields or parts of fields acceptable for production of pollinator lines must be so located that the line is not less than 30 feet [9 meters] for wheat and 660 feet [200 meters] for rye from fields of other kinds or varieties which could provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification.

c. Commercial Hybrids: Fields or parts of fields acceptable for production of a hybrid must be so located that the seed parent is not less than 330 feet ~~(~~[100 meters] ~~)~~ for wheat and 1,640 feet [500 meters] for rye from fields of other kinds or varieties which would provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification.

B. Specific

1. Pollen ~~Shedding by~~ Shedders in Sterile Seed Parent

Crop	~~Maximum heads shedding pollen permitted at any field inspection~~ ~~Seed Parent~~ Maximum heads shedding pollen permitted at any field inspection
Foundation Seed Parent	1:3000

2. The seed parent, the pollinator, and the commercial hybrid shall meet the following:

Factor	Maximum Permitted - Ratio of Heads ~~Seed Parent~~ Foundation Class A, B, R - Lines	Commercial Hybrid
Other varieties	1:3,000	1:3,000
Inseparable other crops	1:30,000	1:5,000

IV. SEED STANDARDS

Factor	~~Seed~~ ~~Parent~~ A, B, R - Lines Foundation		Commercial Hybrid Certified
Pure seed (minimum)	96.00%		96.00%
Hybridity (minimum)*	N/A		75%
Inert matter (maximum)**	4.00%		4.00%
Total other crop seeds (maximum)***	0.06%		0.25%
Other varieties (maximum)	0.05%		0.20%
Other kinds (~~minimum~~ maximum)	0.01%		0.05%
Germination (minimum) wheat/rye	85.00%/80.00%		85.00%/80.00%
Diseases****	--	--	--

* Hybridity will be determined by a method ~~of~~ acceptable ~~accuracy that can be reproduced by a~~ to the seed certifying agency. The ~~completed test~~ results must be submitted to the agency with a declaration of the hybridity prior to final certification of each lot of spring cereals and within 160 days of harvest for winter cereals.

**Shall not contain more than 2% inert matter other than broken seed.

***For other small grain, the maximum of 1 per pound in Foundation, and 5 per pound in the Certified hybrid must not be exceeded. This does not apply to seeds of winter grains in spring grains and vice versa, except in areas where climate conditions do not take care of the situation.

****If chemically controllable seed-borne diseases are noted upon field inspection or laboratory observation, seed treatment is recommended.

Brief summary about the background, purpose, and intent of this change:
Hybrid rye has emerged as a new seed crop, with plantings this crop year or previous in North Dakota, South Dakota, Wisconsin, Minnesota, Illinois, Canada, and Washington. In order to standardize how the crop is certified across AOSCA member agencies, the previously-approved standards for 75% to 95% hybrid wheat have been adapted to reference hybrid rye as well. The co-mingled production systems used by each crop are similar, so we opted for the more efficient route of adding hybrid rye to the existing hybrid wheat rather than drafting an entire new set of standards.

Narrative addressing seed industry impact/support/concern/other:
The main company working with hybrid rye is German-based KWS. They began hybrid rye production in the US in 2017, and worked very diligently to speak with each certifying agency that was handling their crop. In those first years of production, we were still setting our own standards and determining how the crop should be handled. Standardization in the Yellow Book should help companies like KWS, as it will empower our member agencies to adopt a standard procedure regardless of locale.

Summary of discussion(s) held by AOSCA and Seed Certifying Agencies:
Initially, draft standards were discussed at the small grains committee meeting in Chicago in 2019. At that meeting it was decided that a group of agencies familiar with hybrid rye should be tasked with drafting standards for regional review, in advance of the 2020 global meeting. That group met via phone on February 11, 2020 to plan for the combination of the co-mingled 75% to

95% hybrid wheat standards with hybrid rye, and have shared drafts over email in the time since.

Timeline and plan for the proposal:
The draft proposal will be reviewed by seed certifying agencies prior to the regional meetings to be held in April 2020, with the goal of Council discussion and action at the 2020 AOSCA annual meeting.

Final disposition:

Association of Official Seed Certifying Agencies

Proposed Changes to Standards/Guidelines

Date Submitted 3/30/20

Change to AOSCA: Standards _____ Guidelines _____

Crop Kind: Grasses AOSCA Commodity Committee Grass Committee

Proposal Sponsor North Carolina Crop Improvement / Oregon Seed Certification Service

Proposal Origination: AOSCA _____ Region _____ Agency _____ Other X -GVRB

Location in the AOSCA Standards/Guidelines (give specific citation):
ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES GRASS VARIETY REVIEW BOARD APPLICATION – PART B – 2020
Part II. Descriptive information
Part III. Primary use and evidence of performance and adaptation

Text of the original and amended portion of the Standards/Guidelines:
Part II. Descriptive information: (Documentation for Summary Statements #4) Attach tabular data for required maturity ratings and morphological measurements and other optional traits that will be used by certifying agencies to monitor the reproduction of your variety. These measurements must come from field-grown spaced plants or replicated seed yield trials and must include at least 30 plants or 30 data points for each characteristic. Morphological measurements are to be taken at or near maturity. Data must include the results from at least two years at one location or one year at two or more locations. Comparisons must include three or more ~~standard check cultivars taken from the PVP list of standard check~~ cultivars (when established) for the species. Otherwise, varieties most genetically similar to the applicant variety shall be used. **Note: At least two check varieties must be common to all years or all locations associated with presentation of comparative varietal data. Cultivars derived from the same final cross, and submitted for review, must be compared against each other and show a statistical difference (See I).**

AMENDED:
Part II. Descriptive information: (Documentation for Summary Statements #4) Attach tabular data for required maturity ratings and morphological measurements and other optional traits that will be used by certifying agencies to monitor the reproduction of your variety. These measurements must come from field-grown spaced plants or replicated seed yield trials and must include at least 30 plants or 30 data points for each characteristic. Morphological measurements are to be taken at or near maturity. Data must include the results from at least two years at one location or one year at two or more locations. Comparisons must include three or more released cultivars (when established) for the species. Otherwise, varieties most genetically similar to the applicant variety shall be used. **Note: At least two check varieties must be common to all years or all locations associated with presentation of comparative varietal data. Cultivars derived from the same final cross, and submitted for review, must be compared against each other and show a statistical difference (See I).**

Part III. Primary use and evidence of performance and adaptation: (Documentation for Summary Statements #3 and #5) Attach tabular data for required elements of primary use such as forage yield, turf quality, insect or disease resistance, environmental tolerances, and other factors supporting the

performance and/or adaptive characteristics of the variety. These performance tests may be conducted by private seed firms and/or university or other public agencies. Tests shall include three or more ~~check varieties taken from the PVP list of standard check varieties if available~~, or if not available, varieties that are used extensively in areas of intended usage may be substituted. **Note: At least two check varieties must be common to all years or all locations associated with presentation of comparative varietal data.**

AMENDED

Part III. Primary use and evidence of performance and adaptation: (Documentation for Summary Statements #3 and #5) Attach tabular data for required elements of primary use such as forage yield, turf quality, insect or disease resistance, environmental tolerances, and other factors supporting the performance and/or adaptive characteristics of the variety. These performance tests may be conducted by private seed firms and/or university or other public agencies. Tests shall include three or more released varieties for the species, or if not available, varieties that are used extensively in areas of intended usage may be substituted. **Note: At least two check varieties must be common to all years or all locations associated with presentation of comparative varietal data.**

Brief summary about the background, purpose, and intent of this change:

- During my tenure on the GVRB, this concern has come up each year as an outdated requirement. David Chalkley from the PVP office sits on the committee and has mentioned that there is no list maintained by the PVP office. It's problematic for breeders because they end up using old varieties that do not provide a check that is reflected by the reality of what is being produced and observed by the Seed Certification Agencies. The Certification process should not be asking for breeders to use varieties from a list that isn't available. I recommend that we make the highlighted changes versus creating and maintaining a "Standard Check Cultivar/Variety" list.

Narrative addressing seed industry impact/support/concern/other:

- The Grass Variety Review Board (GVRB) has addressed these concerns with the Breeders each year during submission of the new applications. With these changes (highlighted in yellow) it would allow a smoother submission process and allow the breeders to compare their new cultivars to more relevant cultivars. Ultimately, providing a better quality of data points to the GVRB for the recommendation of cultivars into the certification program.

Summary of discussion(s) held by AOSCA and Seed Certifying Agencies:

Timeline and plan for the proposal:
Submitting for Regional Meeting discussions and approval at the 2020 National AOSCA Annual Meeting.

Final disposition: