Proposed Amendment to the List of Approved Seed Cultivars  
For Consideration by the Industrial Hemp Advisory Board  
at its Meeting on December 12, 2018

In Title 3, California Code of Regulations, Division 4, Chapter 8, Article 2, adopt:

§ 4920. List of Approved Seed Cultivars.

(a) The Secretary, as provided in Section 81002 of the Food and Agricultural Code, adopts the following list of approved seed cultivars.

(1) Industrial hemp seed or propagative materials certified as breeder, foundation, registered, or certified seed or stock by one of the following agencies:

   (A) Member organizations of the Association of Official Seed Certifying Agencies,
   (B) Organization of Economic Cooperation and Development, or
   (C) An officially approved and recognized seed-certifying agency listed in Title 3, California Code of Regulations, Section 3875, as provided in Section 52401 of the Food and Agricultural Code.

(2) Industrial hemp seed or propagative materials produced in a quality assurance program approved by one of the following agencies:

   (A) Member organizations of the Association of Official Seed Certifying Agencies,
   (B) Organization of Economic Cooperation and Development, or
   (C) An officially approved and recognized seed-certifying agency listed in Title 3, California Code of Regulations, Section 3875, as provided in Section 52401 of the Food and Agricultural Code.

(3) Industrial hemp seed or propagative materials produced by a licensed participant in a state industrial hemp agricultural pilot program, pursuant to Section 7606 of the federal Agricultural Act of 2014 (7 U.S.C. Sec. 5940).

   (A) The crop from which the seed or propagative materials were harvested from shall have been tested by the licensing authority in the state of origin and found to have no more than three-tenths of one percent tetrahydrocannabinol (THC) on a dry weight basis.
   (B) The commissioner shall be notified of the importation of all propagative materials other than seed into the county. The shipment is subject to inspection by the commissioner and shall not be used for cultivation until released by the commissioner.

(4) Industrial hemp seeds or tissue culture plants imported from outside the United States that meets federal importation requirements.
(A) The crop from which the seeds or tissue culture plants were harvested from shall have been tested by the department of agriculture in the country of origin and found to have no more than three-tenths of one percent THC on a dry weight basis.

(B) The commissioner shall be notified of the importation of all propagative materials other than seed into the county. The shipment is subject to inspection by the commissioner and shall not be used for cultivation until released by the commissioner.

(C) For the purposes of this section, the term “tissue culture” means in vitro material introduced into culture from nodal cuttings at a particular time and from a single plant and grown in aseptic conditions to be used as a source of propagative material.

(5) Industrial hemp seed or propagative materials produced in California in accordance with the provisions of Division 24 of the Food and Agricultural Code and this chapter.

(A) The crop from which the seed or propagative materials were harvested from shall have been tested by a department-approved laboratory and found to have no more than three-tenths of one percent THC on a dry weight basis.

(b) Upon request from the commissioner, a registrant shall provide documentation confirming that any seeds or propagative materials are on the list of approved seed cultivars.

Note: Authority cited: Sections 407 and 81002, Food and Agricultural Code
Reference: Sections 81001 and 81002 Food and Agricultural Code
Josh,

Please share this comment with the Hemp Advisory Board. I plan to say something similar during the public comment period at the meeting as well.

Unlike any other crop produced in California, industrial hemp has both a mandatory sampling requirement along with a mandatory destruction requirement if the test samples are too high. This makes industrial hemp a highly risky crop to produce and will likely result in bankruptcies and litigation when test results are too high. This risk is greatly magnified when the planting of non-Certified seed is allowed. This is not speculation, but it has been observed in Colorado (with the destruction of thousands of acres of industrial hemp) which took a similar path when they approved the production of industrial hemp without a seed certification requirement.

In trying to think of a comparable industry where there are heavy regulations in place for the production of the crop, the organic industry comes to mind as growers must demonstrate to a third party organization that they are meeting federal process-based standards. But even in the highly regulated organic crop industry, there is not a mandatory testing requirement for minimum levels of contaminants, so there is not a risk of crop loss.

The seed certification process of varietal testing and review, along with maintenance of varietal purity through seed increases, is the best pre-emptive measure the California hemp industry can adopt to avoid planting a crop that will test too high for THC. At the same time, I recognize the current frustration with a seed certification requirement that many in the emerging hemp industry are expressing, namely, an apparent insufficiency in varietal choices and inventory. This is a short-term problem, but nevertheless a real problem for those pioneering the industry in California in the initial years. With this in mind, to prevent the liability of selling uncertified seed, but also to allow for the production of uncertified seed on a commercial scale, I propose to the Hemp Advisory Board adopt the following (or similar) addition to the proposed hemp regulations:

Cultivars developed and planting seed produced outside of a seed certification or quality assurance program cannot be marketed for sale for commercial production in California and can only be utilized for a companies’ or individual’s internal production needs.

Sincerely,
Timothy Blank
California Crop Improvement Assn.
December 12, 2018

Lawrence Serbin, Chair  
Industrial Hemp Advisory Board  
Department of Food and Agriculture  
Plant Health and Pest Prevention Services  
1220 N Street Sacramento, CA 95814

RE: Proposed Amendment to the List of Approved Seed Cultivars

Dear Chairman Serbin

I am writing regarding the proposed amendment to the List of Seed Cultivars (Title 3, California Code of Regulations, Division 4, Chapter 8, Article 2 Section 4920). There are two clarifying amendments which should be made to prevent unintended consequences regarding seed cultivars from another state or from another country.

The proposed amendment requires industrial hemp seed from another state to have been tested by the licensing authority in that state. The amendment also requires that seed cultivars from another country be tested by the department of agriculture in the country of origin. These provisions are problematic because a state regulatory or a national department of agriculture typically does not perform the testing of industrial hemp. As currently drafting, the language could result in farmers being unable bring industrial hemp seed or propagative material into California because the regulatory authority in the other state or country did not perform the testing on the industrial hemp.

In addition, states may not “license” the growing of industrial hemp. A state may “register” or otherwise regulate the cultivation of industrial hemp. The amendment should be stated more widely than is stated in the current language.
We recommend the following clarifying amendments.

Amendment 1
§ 4920 (a) (3) (A) The crop from which the seed or propagative materials were harvested from shall have been tested by the licensing in accordance with a testing method approved by the regulatory authority in the state of origin and found to have no more than three-tenths of one percent tetrahydrocannabinol (THC) on a dry weight basis.

Amendment 2
§ 4920 (a) (4) (A) The crop from which the seed or tissue culture plants were harvested from shall have been tested in accordance with a testing method approved by the department of agriculture in the country of origin and found to have no more than three-tenths of one percent THC on a dry weight basis.

We appreciate the opportunity to give input on the proposed amendment to the regulations. If you have any questions or wish to discuss, don’t hesitate to reach out.

Sincerely,

G. V. Ayers
Industrial Hemp Sampling and Testing
Extracts from the Food and Agricultural Code
As amended, effective 1/1/19

81006. Industrial Hemp Growth Limitations; Prohibitions; Imports; Laboratory Testing.

(d) (1) Except when industrial hemp is grown by an established agricultural research institution, a registrant that grows industrial hemp under this section shall, before the harvest of each crop and as provided below, obtain a laboratory test report indicating the THC levels of a random sampling of the dried flowering tops of the industrial hemp grown.

(2) Sampling shall occur no more than 30 days before harvest.

(3) The sample collected for THC testing shall be taken with the grower or seed breeder present. The department shall establish, by regulation, the sampling procedures, including all of the following:

   (A) The number of plants to be sampled per field, and any composting of samples.
   (B) The portions of the plant to be sampled.
   (C) The plant parts to be included in a sample.
   (D) Additional procedures as necessary to ensure accuracy and the sanitation of samples and fields.

(4) The sample collected for THC testing shall be accompanied by the following documentation:

   (A) The registrant's proof of registration.
   (B) Seed certification documentation for the seed cultivar used.
   (C) The THC testing report for each certified seed cultivar used.

(5) The laboratory test report shall be issued by a laboratory approved by the department, using a department-approved testing method, and indicate the percentage content of THC on a dry-weight basis, indicate the date and location of samples taken, and state the Global Positioning System coordinates and total acreage of the crop. If the laboratory test report indicates a percentage content of THC that is equal to or less than three-tenths of 1 percent, the words “PASSED AS CALIFORNIA INDUSTRIAL HEMP” shall appear at or near the top of the laboratory test report. If the laboratory test report indicates a percentage content of THC that is greater than three-tenths of 1 percent, the words “FAILED AS CALIFORNIA INDUSTRIAL HEMP” shall appear at or near the top of the laboratory test report.

(6) If the laboratory test report indicates a percentage content of THC that is equal to or less than three-tenths of 1 percent, the laboratory shall provide the person who requested the testing not less than 10 original copies signed by an employee authorized by the laboratory and shall retain one or more original copies of the laboratory test report for a minimum of two years from its date of sampling.

(7) If the laboratory test report indicates a percentage content of THC that is greater than three-tenths of 1 percent and does not exceed 1 percent, the registrant that grows industrial hemp shall submit additional samples for testing of the industrial hemp grown.

(8) A registrant that grows industrial hemp shall destroy the industrial hemp grown upon receipt of a first laboratory test report indicating a percentage content of THC that exceeds 1 percent or a second laboratory test report pursuant to paragraph (7) indicating a percentage content of THC that exceeds three-tenths of 1 percent but is less than 1 percent. If the percentage content of THC exceeds 1 percent, the destruction shall begin within 48 hours, and be completed within 7 days, after receipt of the laboratory test report. If the percentage content of THC in the second laboratory test report exceeds three-tenths of 1 percent but is less than 1 percent, the destruction shall take place as soon as practicable, but no later than 45 days after receipt of the second test report.
(9) A registrant that intends to grow industrial hemp and who complies with this section shall not be prosecuted for the cultivation or possession of marijuana as a result of a laboratory test report that indicates a percentage content of THC that is greater than three-tenths of 1 percent but does not exceed 1 percent.

(10) Established agricultural research institutions shall be permitted to cultivate or possess industrial hemp with a laboratory test report that indicates a percentage content of THC that is greater than three-tenths of 1 percent if that cultivation or possession contributes to the development of types of industrial hemp that will comply with the three-tenths of 1 percent THC limit established in this division.

(11) Except for an established agricultural research institution, a registrant that grows industrial hemp shall retain an original signed copy of the laboratory test report for two years from its date of sampling, make an original signed copy of the laboratory test report available to the department, the commissioner, or law enforcement officials or their designees upon request, and shall provide an original copy of the laboratory test report to each person purchasing, transporting, or otherwise obtaining from the registrant that grows industrial hemp the fiber, oil, cake, or seed, or any component of the seed, of the plant.
Industrial Hemp Advisory Board (IHAB)

Recommendations on Sampling

- Samples shall be collected by the county agricultural commissioner. The commissioner may designate an independent third party to collect samples on the commissioner’s behalf.
- *Samples taken with the registrant or a representative present.*
- *Sampling shall occur no more than 30 days prior to harvest.*
- Registrant shall submit a pre-harvest report to the commissioner at least 30 days prior to harvest.
- Each non-contiguous field shall be sampled separately.
- Each variety grown shall be sampled separately.
- Indoor and outdoor growing areas shall be sampled separately, even if it is the same variety.
- Each composite sample shall consist of at least five primary samples from different plants of the sampled variety.
- *Sample shall consist of the dried flowering tops.* “Dried flowering tops” is defined as the terminal cola or apex bud of the industrial hemp plant, including any stems, stalks, flowers, leaves, or seeds.*
  - Avoid sampling field edges.
  - Avoid sampling male plants.
  - Any abnormal plants should be sampled individually.
  - Place sample in brown paper bag (or other breathable bag), properly labeled and sealed in a manner to show evidence of tampering.
  - Both registrant and sampler shall sign a chain-of-custody form.
  - Samples shall be kept in cool storage, between 45-95°F.
  - Samples shall be delivered to the lab in same day sampling occurs.
  - The registrant or any representatives shall not assist the laboratory employee nor touch the sampled materials or the testing equipment during delivery, processing, or testing of the sample.
  - Registrants shall submit a harvest/destruction report to the commissioner within 7 days completing harvest or destruction. The commissioner may confirm the harvest or destruction of the crop by inspection.

*italics = requirement from SB 1409, effective 1/1/19*
Industrial Hemp Advisory Board (IHAB)

Recommendations on Testing

• Department-approved laboratory: ISO/IEC 17025 accredited.
• Department-approved testing method:
  o Gas chromatography with flame ionization detector
  o Gas chromatography coupled to mass spectrometry
  o Liquid chromatography coupled to mass spectrometry
  o Liquid chromatography with ultraviolet detector
• The laboratory shall develop and implement a chain-of-custody protocol to ensure accurate documentation of the transport, handling, storage, and destruction of samples.
• Each sample shall be maintained and tested separately.
• All plant parts submitted within the sample shall be processed and tested as a single sample. No plant parts shall be removed during sample preparation and testing.
• Samples shall be dried to a constant weight before analysis.
• Samples shall be milled to a homogenous powder-like consistency using a 1 mm screen and combined.
• If THC content is passing, sample should be retained by lab for 30 days.
• If THC content is between 0.3% and 1%, sample should be retained for 60 days.
• Registrant and commissioner shall be notified of test results within 10 days of sampling.
• Results report shall include date of sampling.

*Italics = recommendations from CDFA Center for Analytical Chemistry*
Hi there. I am re-sending this letter as I felt it wasn't understood by the committee what I was asking them to consider.

Hemp samples are taken wet and provided to the testing lab as wet samples as per law. The lab therefore has to dry the sample prior to testing and there are numerous ways to do this. We think it is important for the committee to develop a protocol for drying the wet sample. Different drying methods can result in wildly different results.

I hope that this information can be relayed to the committee.

Thank you for your attention.

Lisa

-------- Forwarded Message --------

Subject: Hemp testing protocol
Date: Mon, 15 Oct 2018 20:39:55 -0700
From: Lisa B.
To: industrialhemp@cdfa.ca.gov

Hi. Could you please forward the following comments and attachment to the Hemp Advisory Committee, including the Testing and Sampling Task Force? I assume that comments are entered into the public record.

Thank you.

Dear Committee members,

We have been attending and following your meetings since their inception and are interested in growing hemp next year under your direction. We recently followed the limited protocol for sampling and testing of some CBD plants that we grow under personal use and we were at a loss in terms of advising our local lab about a testing protocol for hemp. This is a lab that has been doing cannabis testing for years. We brought in our wet sample and told them it needed to be tested at no more than 13% moisture content. They were unsure about how to deal with the wet sample (since most of their samples come to them previously dried), whether to dry it in an oven or dry ice. They ended up using dry ice, yet didn't have a mechanism for testing moisture. In other words, they were not accustomed to dealing with wet samples and therefore we were not confident in the test results. This is a lab on your list of BCC Testing License list.

We feel that California needs to have a testing protocol for labs to follow for hemp wet samples. Sample size and type, handling, drying and test protocol. Otherwise, results will be wildly variant. We are attaching Oregon's protocol for your information.

Additionally, we recommend that for the sampling collection that both options be available to the grower, testing lab and/or Agricultural Commissioner.

Thank you for your attention. Lisa Brown and Kevin Johnson
7 Generations Producers Val X

Plant Material: Flower

Cannabinoid Profile

<table>
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<tr>
<th>Cannabinoid</th>
<th>% wt</th>
<th>mg/g</th>
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<tr>
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<td>160.4</td>
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<tr>
<td>CBGA</td>
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<tr>
<td>THCA</td>
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</table>

Total Cannabinoids 17.61 176.1

Calculated THC Yield 0.50 5.00
Calculated CBD Yield 14.36 143.57

Calculated Maximum THC Yield = THC + 0.877 * THCA
Calculated Maximum CBD Yield = CBD + 0.877 * CBDA

Marin Analytics, LLC
1281 Andersen Drive, Suite D
San Rafael, CA 94901
415-936-8477 / Support@MarinAnalytics.com

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Industrial Hemp Advisory Board (IHAB)
Agricultural Pilot Program Outline

- The Department establishes an agricultural pilot program to study the growth, cultivation, and marketing of industrial hemp.
- The agricultural pilot program includes the following participants:
  - Registered growers of industrial hemp for commercial purposes
  - Registered industrial hemp seed breeders
  - Established agricultural research institutions and institutions of higher education that register with the commissioner as either a grower of industrial hemp for commercial purposes or an industrial hemp seed breeder
- A participant in the agricultural pilot program shall:
  - Submit an registration application and other required information
  - Pay all applicable fees
  - Perform sampling and testing for THC content in accordance with Department regulations
  - Provide records pertaining to planting materials, sampling, testing, harvest, or crop destruction upon request
  - Comply with all applicable federal, state, and local provisions pertaining to the growth and cultivation of industrial hemp
- The commissioner shall transmit the following data to the Department:
  - Application and other information
  - Laboratory test results for THC content for all registered plantings
  - Laboratory test results for all service, confirmatory, or enforcement samples collected by the commissioner
  - A summary of enforcement actions taken, including acreage and/or quantity of noncompliant industrial hemp destroyed
- The Department shall produce an annual report, and shall present the report at a regular meeting of the IHAB and publish the report on its website.

From SB 1409, effective 1/1/19:

81007. As part of the registration program established pursuant to this division, the department may establish and carry out, by regulation, an agricultural pilot program pursuant to Section 7606 of the federal Agricultural Act of 2014 (7 U.S.C. Sec. 5940) in accordance with the purposes of that section.