

Laboratory Selection Criteria for Prohibited Substance Testing

1. Purpose

This instruction outlines laboratory selection criteria for testing of agricultural inputs, cannabis waste, and cannabis that is to be sold, labeled, or represented as OCal. This instruction supports consistency in analytical approach and quality assurance practices that produce reliable testing data.

2. OCal regulations. Title 3 of the California Code of Regulations (3 CCR)

3 CCR § 10105 Allowed and prohibited substances and methods in OCal production.

3 CCR § 10402 Application for accreditation.

3 CCR § 10711 Inspection, testing and reporting.

3. Policy

The OCal regulations specify sampling and testing requirements for agricultural inputs, cannabis waste, and cannabis that is to be sold, labeled, or represented as OCal.

Samples are to be collected by the registered certifying agent, inspector, or the department and will be tested to detect the presence of substances prohibited under § 10105 of the OCal regulations.

Certifying agents are required to submit to the OCal Program a copy of their procedures for sampling and testing as a condition of accreditation. National Organic Program (NOP) accredited certifying agents may also be asked to submit to the OCal Program a copy of their procedures for sampling and testing.

4. Procedures

4.1 Current methods of analysis

Analytical methods capable of determining multiple pesticide residues in a single analysis have been developed in recent years and sufficient policies and procedures must be in place to ensure that false positives and false negatives are not reported.

The QuEChERS method has been readily accepted by many pesticide residue analysts. Some modifications to the original method have been subsequently introduced to ensure efficient extraction of pH dependent compounds, to minimize degradation of susceptible compounds, expand the spectrum of matrices covered, and improve recoveries of pesticides not analyzed in the original reports.

Guidance document OCal 2611-1 lists prohibited pesticides for residue testing. Laboratories employed by registered certifying agents should attempt to analyze as many compounds on the list as possible. The National Organic Program (NOP) created this list of prohibited pesticides by examining all pesticides/metabolites/environmental contaminants that have been detected in samples analyzed for the USDA Pesticide Data Program.

A laboratory should be able to test for analytes listed on OCal 2611-1, the required pesticide tests included in the Bureau of Cannabis Control's regulations, § 5719, and any additional analytes required by the certifying agent.

4.2 Laboratory selection requirements

- a. Hold a current commercial cannabis laboratory license from the Bureau of Cannabis Control, or
- b. Be approved on a case-by-case basis by OCal *and* hold current accreditation to either:
 - ISO/IEC 17025:2005, *General Requirements for the Competence of Testing and Calibration Laboratories*.
 - An alternate standard.
- c. Participate in an international proficiency testing program. A proficiency testing program is the determination of the calibration or testing performance of a laboratory by means of inter-laboratory comparison. A copy of the proficiency test results from the most recent round of proficiency testing

should be available from the laboratory together with any corrective actions taken if the laboratory has failed the proficiency test. Contact information for two international proficiency programs is provided in the references section.

- d. Be capable of screening for the list of pesticides included in OCal 2611-1, analyzing the samples using gas chromatography (GC) and/or liquid chromatography coupled to a mass spectrometer (MS) or tandem mass spectrometers (MS/MS).
- e. Provide evidence that their analytical method is appropriate for the submitted sample and that suitable validation data are available. Correspondence should be available to the certifying agent documenting that the method meets the laboratories' minimum internal quality assurance requirements.

4.3 The registered certifying agent's role

- a. Request a copy of the lab's accreditation certificate prior to shipping samples and direct the laboratory to attach the accreditation certificate to the laboratory results when they are reported back to the certifying agent
- b. Direct the laboratory to provide analytical results as follows: _

If no residue is detected, then the result should be provided as not detected (ND). The limit of detection should be provided.

If some residue is detected below the limit of quantification (LOQ), then the result should be provided as "Trace" or "BQL" (below quantifiable level).

If residue is detected at or above the LOQ, then the result should be reported in parts per million (ppm). Parts per million (ppm) is equivalent to milligrams per kilogram (mg/kg).

4.4 Suggested laboratory practices

4.4.1 Use a unique identifier to track the sample throughout the handling and analysis.

4.4.2 Homogenization

- a. Before homogenization, the sample may be stored at 4 degrees Celsius for up to 72 hours, if fresh, or stored at ambient temperature in the case of samples normally stored at room temperature.
- b. If a sample was previously frozen and shipped on ice packs, then it should be homogenized upon receipt at the laboratory.
- c. The entire sample as received should be homogenized by the laboratory to obtain a suitable representative portion for analysis.
- d. Homogenized samples should be stored at less than -20 degrees Celsius.
- e. Violative sample homogenates should be retained (preferably stored at -80 degrees Celsius) until the contamination issue is resolved by the certifying agent. Samples should not normally be washed.

4.4.3 To the extent practicable, the laboratory test methods should be consistent with the guidelines found in Bureau of Cannabis Control (BCC) commercial cannabis licensing regulations for laboratories, title 16 of the California Code of Regulations §§ 5711, 5712 and 5719 and follow the AOAC International Official Methods of Analysis for Contaminant Testing, found in *Official Methods of Analysis*, 21st Edition (2019) and the *United States Pharmacopeia and the National Formulary Methods of Analysis* (2020).

5. References

OCal Handbook documents

OCal 2610. Sampling Procedures for OCal Cannabis Testing

OCal 2611-1. Prohibited Pesticides for OCal Residue Testing

BCC Regulations. Title 16 of the California Code of Regulations (16 CCR)

16 CCR § 5711. Laboratory Analyses Standard Operating Procedures.

16 CCR § 5712. Test Methods.

OCal 2611 Laboratory Selection Criteria for Prohibited Substance Testing

16 CCR § 5719. Residual Pesticides Testing.

NOP regulations. Title 7, Code of Federal Regulations (7 CFR)

7 CFR § 205.600. Allowed and prohibited substances, methods, and ingredients in organic production and handling.

United States. Department of Agriculture. Agricultural Marketing Service. *AMS Pesticide Data Program Standard Operating Procedures: SOP No: PDP QC*. Revision 1. Washington, DC: United States Department of Agriculture, 2009.

United States. Environmental Protection Agency. *OCSPP Harmonized Test Guidelines Series 860 - Residue Chemistry Test Guidelines*. United States Environmental Protection Agency, Aug. 1996. Web. 21 Dec. 2010.

ISO/IEC 17025:2005 - General requirements for the competence of testing and calibration laboratories." ISO - International Organization for Standardization. 21 Dec. 2010.

AOAC INTERNATIONAL Homepage. 21 Dec. 2010 <<http://www.aoac.org/>>.
FAPAS Proficiency testing schemes - Quality assurance for laboratories worldwide. 21 Dec. 2010 <<http://www.fapas.com/>>.

OFFICIAL METHODS OF ANALYSIS OF AOAC INTERNATIONAL - 20TH EDITION, 2016, by AOAC International, 2016, Editor: Dr. George W. Latimer, Jr. www.aoac.org/

Quechers.com | home. 21 Dec. 2010. <http://www.quechers.com/>

Material Review

1. Purpose and scope

This instruction specifies the criteria and process that registered certifying agents (certifiers) must follow when approving substances for use in OCal production. This instruction is for certifiers, who must meet § 10401(a)(19) of the OCal regulations as part of their accreditation.

2. OCal regulations. Title 3 California Code of Regulations (3 CCR)

3 CCR § 10000. Definitions.

3 CCR § 10201. OCal cultivation and distribution system plan.

3 CCR § 10203. Soil fertility and crop nutrient management practice standard.

3 CCR § 10401. Requirements for accreditation.

3. Policy

Certifiers must review all materials used by OCal cultivators and distributors for compliance with § 10201(c)(2) of the OCal regulations, and specifically the National List of Allowed and Prohibited Substances (National List), title 7 of the Code of Federal Regulations (CFR) § 205.601 and § 205.602, and any annotations provided therein.

Certifiers have several options available for determining whether materials may be used in OCal cultivation or distribution:

1. Certifiers can verify that the material is allowed for use in OCal production by using the OCal regulations and the National List to evaluate the product, all of the ingredients within the product, and, if applicable, the manufacturing processes, source materials, and processing aids used to produce the

- ingredients or final product (e.g., contacting the supplier/ formulator/ manufacturer to obtain full disclosure of the ingredients in the product and manufacturing processes, including processing aids).
2. Certifying agents may consult with the California Department of Food and Agriculture (CDFA) Organic Input Material (OIM) program.

In all cases, a certifier must:

1. Maintain documentation to support its determination regarding whether a product is allowed or prohibited for use in OCal production, including those products that are approved based on prior determination by another certifier, a Material Review Organization (MRO) or the Environmental Protection Agency ~~or the CDFA OIM program;~~
2. Make synthetic vs. nonsynthetic determinations in compliance with the OCal regulations and this document regarding the classification of materials;
3. Ensure that personnel conducting material reviews demonstrate appropriate education, training, and experience; and
4. Create clear written protocols and procedures that the outline depth and frequency of material reviews.

4. Products with multiple reviews

Some manufacturers of materials may submit their products for review to more than one certifying agent or Material Review Organization (MRO). For the purposes of this section, an MRO is an entity with expertise in verifying compliance of production and handling materials with the USDA organic regulations. MROs provide certifiers, input manufacturers, suppliers, and organic or OCal operations with an independent review and assessment of materials intended for use in organic or OCal production. In the majority of cases, certifying agents and MROs reach the same determination regarding the allowance or prohibition of a product. On rare occasions, certifying agents and MROs reach different conclusions.

Where different certifying agents or MROs reach different conclusions on the allowance or prohibition of a material: the OCal Program will make a final determination regarding

whether the product is allowed or prohibited for use in OCal production and any additional use criteria.

When certifying agents or MROs reach different conclusions, the certifying agent should:

1. Notify the OCal Program in writing.
2. The OCal Program will review information from all parties to make a determination. The OCal Program does not approve or endorse branded (formulated) input products.
3. If the OCal Program concludes that the determination of allowance was in error and the material is prohibited for use in OCal production the OCal Program will instruct the certifying agent to rescind its approval of the product.
4. The OCal Program will communicate the determination to all certifying agents with a timeline, if appropriate, for the discontinuation of product use by certified OCal operations.

A decision made by certifying agents about the status of a branded (formulated) product remains in effect until the OCal Program notifies all certifying agents about the status of a material under the OCal Program.

5. **References**

NOP regulations. Title 7, Code of Federal Regulations (7 CFR)

7 CFR § 205.601. Synthetic substances allowed for use in organic crop production.

7 CFR § 205.602. Nonsynthetic substances prohibited for use in organic crop production.

Compost and Vermicompost in OCal Production

1. Purpose

This guidance explains allowed compost and vermicompost composition, production, and use in OCal production and clarifies the certifying agent's role in permitting use of compost and vermicompost.

OCal 5006, Processed Animal Manures, explains how heat-processed animal manures may be used in OCal production.

2. OCal regulations. Title 3 California Code of Regulations (3 CCR)

3 CCR § 10000. Definitions.

3 CCR § 10203. Soil fertility and crop nutrient management practice standard.

3. Policy

3.1 General

Certifying agents may allow the use of compost if they review the OCal system plan (OSP) and records and are assured that all production methods and source materials meet the requirements below and in § 10203 of the OCal regulations.

a. Compost requirements

1. Made from allowed feedstock materials (either nonsynthetic substances not prohibited for use or synthetic substances approved for use as plant or soil amendments on the National List of Allowed and Prohibited Substances (National List), title 7 of the Code of Federal Regulations (7 CFR) § 205.602.
2. Managed in accordance with § 10203(c)(2) of the OCal regulations.
3. The type and source of all feedstock materials, a log of the temperatures and timeframe, and practices used to achieve temperatures must be documented in the OSP.
4. Certifiers must ensure compliance with 1 through 3 during the site visit.

- b. Vermicompost requirements
 - 1. Vermicompost must be made from allowed feedstock materials (either nonsynthetic substances not prohibited for use or synthetic substances approved for use as plant or soil amendments on the National List).
 - 2. Aerobic conditions must be maintained by regular additions of layers of organic matter, turning, or by employing forced air pipes such that moisture is maintained at 70-90 percent.
 - 3. The duration of vermicompost must be sufficient to produce a finished product that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.
 - 4. Certifiers must ensure compliance with 1 through 3 during the site visit.
- c. Compost and vermicompost production practices must be described in the operation's OSP, including the type and source of all feedstock materials, a log of the temperatures and timeframe, and practices used to achieve temperatures.
- d. Certified operations are encouraged to measure chemical composition and biological activity. These measurements may include testing feedstock materials and compost for one or more characteristics, including initial and final carbon to nitrogen ratios, stability (using ammonia/nitrate ratio, O₂ demand, CO₂ respiration rate, or other standard tests), pathogenic organisms, or contaminants.

3.2 Permitted uses

Composts and vermicomposts containing animal materials that do not meet the requirements at 3.1 of this policy may be permitted subject to restrictions of § 10203(c)(1), similar to raw animal manure, provided all feedstocks are allowed materials (either nonsynthetic substances not prohibited at NOP regulations § 205.602, or synthetics approved for use as plant or soil amendments).

Compost and vermicompost made without animal materials as feedstock are not restricted in use, in accordance with the provision for uncomposted plant materials at § 10203(c)(3)

of the OCal regulations, provided all feedstocks are allowed materials (either nonsynthetic substances not prohibited for use or synthetic substances approved for use as plant or soil amendments on the National List).

4. References

NOP regulations. 7 Code of Federal Regulations (7 CFR)

7 CFR § 205.602 Nonsynthetic substances prohibited for use in organic crop production.

OCal Handbook documents

OCal 5006 Processed Animal Manures.