Methods and Materials in OCal Production

1. Purpose

This instruction clarifies whether certain methods and materials are prohibited or permitted under the OCal regulations.

2. Background

The methods and materials addressed in this document were questioned by National Organic Program (NOP) stakeholders and researched, examined and addressed by the NOP.

3. OCal Regulations, Title 3 California Code of Regulations (3 CCR)

3 CCR § 10000. Definitions.

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

3 CCR § 10711. Inspection, testing, and reporting.

4. Methods and Materials

Accredited Certifying Agent – Inspection Authority

In order to avoid potential conflicts of interest, OCal will refrain from directing certifiers to conduct compliance inspections of OCal cultivators or distributors who are either not certified or certified by another certifying agent. Similarly, certifying agents will not initiate inspections of operations that are certified by another certifying agent or uncertified operations that have not applied to them for certification.

Aquatic Plant Extracts For Use in Cannabis Production

The use of phosphoric acid and other synthetic acids for pH adjustment of aquatic plant extracts is prohibited under the annotation for aquatic plant extracts at section 205.601(j)(1) of the National List. Use of aquatic plant extract products for organic crop production that contain phosphoric acid or other synthetic acids may constitute the use of a prohibited substance.

Container Systems

The OCal Program permits the certification of container systems as long as the certifying agent determines that the system complies with OCal regulations. Certifiers must evaluate the

compliance of the overall system, including maintaining or improving natural resources, supporting nutrient cycling, promoting ecological balance, and conserving biodiversity. Container system includes container, hydroponic, and other plant pot-based systems, with or without soil as the growing media.

Genetically Modified Organisms

Genetic modification is an excluded method.

Under § 10711 (b) of the OCal regulations, certifying agents may test OCal products when there is reason to believe excluded methods were used in the cultivation or distribution of an OCal product. The OCal regulations do not establish GMO tolerance levels.

If all aspects of the organic production or handling process were followed correctly, then the presence of a detectable residue from a genetically modified organism alone does not constitute a violation of this regulation provided that all requirements in the OCal regulations have been followed.

Humic Acid Extraction – Alkali Materials Allowed

The National List § 205.601(j) (3) does not specify which alkali materials are allowed for extraction of humic acids. Therefore, there is no restriction regarding which alkali materials may be used for extraction.

Humic Acid Extraction – Amount of Synthetic Alkali Material Allowed

Extraction of humic acid with more than the necessary amount of synthetic alkali material (i.e., for the purpose of inflating the nutrient analysis of the product) does not comply with the annotation for humic acid on the National List at § 205.601(j)(3) and is prohibited in OCal cannabis production.

Nanotechnology

No engineered nanomaterial will be allowed for use in OCal production unless the substance has been: 1) petitioned for use; 2) reviewed and recommended by the NOSB; and 3) added to the National List through notice and comment rulemaking.

Synthetic Algicides, Disinfectants, and Sanitizers For Use in Cannabis Production

Substances listed on the National List at § 205.601 (a) may be used only in accordance with the allowances on the National List. The use of an algicide, disinfectant, or sanitizer for a technical or functional effect within a product formulation, when the final product is not labeled

as an algicide, disinfectant or sanitizer, is not consistent with the allowance of materials listed on the National List at § 205.601(a).

5. References

National Organic Program (NOP) Handbook

NOP Policy Memo 10-1 Accredited Certifying Agent Inspection Authority

NOP Policy Memo 11-13 Genetically Modified Organisms

NOP Policy Memo 12-1 Production and Certification of Aquatic Plants

NOP Policy Memo 13-2 Humic Acid Extraction

NOP Policy Memo 13-3 Synthetic Algicides, Disinfectants, and Sanitizers Allowed in Organic Crop Production

NOP Policy Memo 14-1 Aquatic Plant Extracts

NOP Policy Memo 15-2 Nanotechnology

Separation of Duties in Certification Decisions

1. Purpose

This instruction clarifies the separation of duties procedures to be followed by registered certifying agents when making certification decisions. Certification decisions include granting initial certification of applicants or continuing OCal certification and issuing any adverse action notices.

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

3 CCR § 10000. Definitions.

3 CCR § 10401. Requirements for accreditation.

3 CCR § 10408. Requirements for registration.

3 CCR § 10502. Review of certification application.

3 CCR § 10504. Granting certification.

3 CCR § 10506. Continuation of certification.

3 CCR § 10701. Adverse actions.

3 CCR § 10703. Non-compliance procedures for certified operations.

3 CCR § 10704. Mediation for certified operations.

3. Policy

The OCal regulations outline the roles and responsibilities of certifying agents for reviewing, inspecting, and granting certification of applicants for certification and operations continuing certification. To prevent a conflict of interest, the regulations require separation of the duties of the onsite inspector and the final certification decision-maker. The individual who conducted the onsite inspection cannot conduct a final review of documents or make a certification decision for the operation they inspected for 12 months after the date of that inspection.

The following roles are required to complete the certification process:

a. **Reviewer of documents.** Reviews the application, the OCal system plan (OSP) or annual update, inspection reports, and any other related documents.

b. **Inspector.** Conducts the onsite inspection and audit.

c. **Certification decision-maker.** Makes the final decision to grant or deny certification of an operation based on a review of the documents referenced in a, above.

These roles are typically and best filled by at least three people. Two people may fill these roles, however, so long as the person who conducted the onsite inspection does not conduct the final document review or make the final certification decision.

The OCal Program considers the issuance of a Notice of Proposed Suspension or Revocation a substantial certification decision and therefore recommends the certifying agent use at least two people when issuing this notice. A Notice of Proposed Suspension or Revocation will become a Suspension or Revocation if it is not appealed within the time allotted in section 10704 of the OCal regulations. After an appeal, if the Notice of Proposed Suspension or Revocation is upheld, the department will issue a Notice of Suspension or Revocation.

4. Procedure

4.1. Certifying agents must use at least two people to complete the certification process.

4.1.1. The person who conducted the onsite inspection cannot conduct a final review of documents or make a certification decision for an operation he or she previously inspected for 12 months after that inspection.

4.1.2. Certifying agents are encouraged to use at least three different people for the initial certification, the continuation of certification, and the adverse action process, namely, a document reviewer, an inspector, and a certification and/or adverse action decisionmaker.

4.1.3. In order to adequately perform their duties, all inspectors, document reviewers, and certification decision-makers must have sufficient expertise in organic production and handling standards and practices.

5. Compliance with this instruction will be verified by the department during compliance assessments.

Recordkeeping for Certified Operations

1. Purpose

This instruction outlines recordkeeping requirements under the OCal Program and provides examples of the types of records that should be maintained as verification of information in a certified operation's OCal system plan (OSP) and used to demonstrate compliance with the OCal regulations.

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

3 CCR § 10000. Definitions.

3 CCR § 10104. Recordkeeping by certified operations.

3 CCR § 10201. OCal system plans.

3 CCR § 10506. Continuation of certification.

3. Policy

Certifying agents verify an operator's compliance with the OCal regulations by reviewing the OSP and certification records.

Certified operations demonstrate compliance with the OCal regulations by ensuring appropriate records are maintained, up to date and sufficiently document the practices, procedures, and inputs used by the operation.

Certified operations and registered certifying agents may consider which records are needed for a specific operation when establishing their recordkeeping approaches.

Registered certifying agents may provide their certified operations with an OSP or recordkeeping forms for use or as examples.

Records maintained by a certified operation to demonstrate compliance with the OCal regulations must be listed in the OSP.

4. Procedure

Following are examples of records that can be used to demonstrate compliance with the OCal recordkeeping and documentation regulations. Records not listed below may also be used to verify compliance. A certified operation should check with its registered certifying agent to make sure it is maintaining appropriate records and documentation to demonstrate compliance.

4.1. OCal Cultivator Records

a. Seeds and Transplants – Including Cover Crop
   1. Receipts of seeds and transplants delivered to operation
   2. Invoices of seeds and transplants purchased
   3. Seed packages and labels
   4. Phone logs of attempts to obtain OCal seeds and transplants
   5. Seed catalogs
   6. Letters from seed suppliers concerning the availability of OCal seeds
   7. Copies of OCal certificates from suppliers of OCal seeds
   8. For seed savers - harvest records showing production of OCal seed
   9. Seed treatment records
   10. Verification from supplier that non-OCal seed is not genetically modified.

b. Material Application Records
   1. Fertilizer and soil amendments – application records for fertilizers, manure, compost, soil amendments, and synthetic micronutrients
   2. Pest control products – application records for pesticides, acidifiers, spreader/stickers and other spray adjuvants
   3. Crop production aids – application records for foliar sprays, gibberellic acid, kelp or other approved products
   4. Invoices or receipts for all materials purchased including custom applicator invoices

c. Production Records
   1. Operation activity log
   2. Invoices for contracted services (e.g. seeding, mowing, spreading manure, recycling etc.)

3. Recommendations from pest consultants or other field persons
4. Soil, water and tissue analysis reports
5. Records of cultivation practices, soil or nutrient recycling, and weeding and planting dates
6. Compost production records
7. Post-harvest processing equipment use and cleaning, containers, and storage and processing areas clean-out and reuse

d. Field History Records
   1. Cropping history or land use for the previous three years
   2. Material application records for the previous three years
   3. A copy of the organic or OCal certificate if the land was previously certified under another cultivator's organic or OCal certificate
   4. Lease agreements
   5. Maps

e. Track-and-Trace Records
   1. Harvest
   2. Storage
   3. Inventory reports for finished products
   4. Packaging reports
   5. Sales
   6. Receipts/invoices
   7. Transport manifests
   8. OCal tracking
   9. Certificates of analyses
   10. Other Track-and-Trace records that verify the amounts harvested and sold

f. Other Records
   1. Clean truck affidavit for bulk products transported by transport-only distributor
   2. Sales summaries from processors or distributors

4.2. OCal Distributor Records

a. Track-and-Trace records

1. Receiving and distribution manifests
2. Receipt of products
3. Inventory reports
4. Packaging reports
5. Storage
6. Sales records
7. Receipts/invoices
8. Transport manifests
9. OCal tracking
10. Other Track-and-Trace records that verify the amount received and distributed

b. Other Receipt and Distribution Records
   1. OCal certificate for each OCal product received
   2. Clean truck affidavit for bulk products transported by transport-only distributor
   3. OCal cultivator certificate
   4. Certificates of analyses or product specification sheets
   5. Sales, accounts payable, accounts receivable, and cash disbursement journals

c. Storage and Production Records – Records That Describe Handling and Processing Activities
   1. Quality control reports
   2. Records regarding reconditioning, shrinkage, dumping, container, packaging, storage and processing area clean-out and reuse
   3. Purchased inputs, including sanitizers, pest management materials
   4. Pest control and sanitation logs

Responding to Noncompliances

1. Purpose

This instruction is intended to support the quality of the corrective actions submitted by certifying agents.

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

3 CCR § 10000. Definitions.

3 CCR § 10202. Land Requirements.

3 CCR § 10401. Requirements for accreditation.

3 CCR § 10502. Review of certification application.

3. Policy

Corrective actions must adequately address noncompliances identified by the department. While certifying agents are generally cited for noncompliance with regulations associated with accreditation and registration, they may be cited noncompliant with any section of the regulations, as appropriate.

For example, a certifying agent may receive a noncompliance for the failure to adequately review an operation's certification application to determine compliance (§ 10502(a)(2)). The basis for this noncompliance may be: "A department auditor's finding revealed during a file review of a certified operation's OCal system plan (OSP) a lack of evidence that the certified land had no prohibited substances applied to it for a period of 3 years. The operation is in violation of § 10202(b), Land Requirements."

4. Procedure

4.1. General Corrective Action Guidance

When responding to accreditation noncompliances, registered certifying agents should:

a. Read the noncompliance carefully to understand the citation and the facts of the violation.

b. Communicate with the department to clarify the details and intent of the noncompliance.

c. Address the following five components in the proposed corrective action:
   1. Correcting the cause of the noncompliance. Describe the verifiable action that will bring the certifying agent into compliance.
   2. Providing documentary evidence supporting how the noncompliance was corrected. Provide documentary evidence indicating that the noncompliance was corrected.
   3. Preventing reoccurrence of the noncompliance. Describe the verifiable action that will prevent a reoccurrence of the noncompliance.
   4. Providing evidence supporting prevention of reoccurrence of the noncompliance. Provide verifiable evidence that implemented actions are effective in preventing a reoccurrence.
   5. Controlling noncompliant product, when appropriate. Describe what verifiable actions have been taken to correct noncompliant product. Examples of this may be correcting product labels, removing product from distribution, etc.

d. Submit the corrective action proposal within the required timeframe as indicated in the original notice.

e. Organize the corrective action submission so that it can be readily understood and reviewed by the Department.
   1. Identify what actions have been implemented to correct the noncompliance and prevent reoccurrence.
   2. Submit a plan of action (including a timeframe for completion) for corrective actions that have not been implemented.
   3. Submit documentary and other evidence of implementation of corrective action and prevention of reoccurrence.

Examples of Documentary Evidence

Training: Where training is indicated as a proposed corrective action, a copy of the proposed training agenda, training materials to be used, attendance list or sign in sheet, and policy memos and/or Quality Manual updates covered, or to be covered, in the training.

OCal System Plan (OSP) Updates: A copy of the updated OSP template and any related policy memo and/or Quality Manual updates, along with documents supporting any proposed or implemented training.

Procedural Changes: A copy of the updated policy memo and/or Quality Manual update, standard operating procedure update resulting from the proposed or implemented corrective action, and documents supporting any proposed or implemented training.

f. Submit the materials as one submission.

g. Be prepared to answer questions about the submission.

4.2. Review of Corrective Action Proposal

The department may respond to review of the certifying agent's proposed corrective actions as follows:

a. Request for clarification and additional material. Unless otherwise specified, the certifying agent must submit additional information within 10 days of the request.

b. Approval of the corrective action and issuance of a noncompliance correction/resolution notice to the certifying agent. The noncompliance is considered "submitted and accepted."

c. A compliance audit to verify that the corrective actions have been implemented. A noncompliance is considered "cleared" when verified by the department. Depending upon the nature of the noncompliance, verification may be conducted during the next scheduled onsite assessment or during an earlier onsite audit.

d. Denial of the corrective action and issuance of a Notice of Proposed Revocation or Suspension to the certifying agent.

5. Determining Corrective Actions and Evidence

The certifying agent shall determine the corrective action and supporting evidence. The department will assess whether the corrective action and evidence adequately address the noncompliance.

6. Records

6.1. Records obtained from applicants for certification and certified operations shall be maintained for not less than 5 years beyond their receipt.

6.2. Records created by the certifying agent regarding applicants for certification and certified operations shall be maintained for not less than 10 years beyond their creation.

6.3. Records created or received by a certifying agent pursuant to the accreditation requirements of the OCal Program or the National Organic Program (NOP), excluding any records covered by 6.2 above, shall be maintained for not less than 5 years beyond their creation or receipt.

7. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

7 CFR § 205.501. General Requirements for Accreditation.

Unannounced Inspections

1. Purpose

This instruction provides best practices for registered certifying agents conducting unannounced inspections of certified operations.

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

3 CCR § 10000. Definitions.

3 CCR § 10401. Requirements for accreditation.

3 CCR § 10408. Requirements for registration.

3 CCR § 10409. Registration.

3 CCR § 10410. Registration renewal and reporting.

3 CCR § 10500. General requirements for certification.

3 CCR § 10503. On-site inspections.

3 CCR § 10711. Inspection, testing, and reporting.

3. Policy

The OCal program encourages certifying agents to conduct unannounced inspections to ensure compliance across certified operations and gain consumer confidence. Unannounced inspections serve the dual purpose of giving the certifying agent the opportunity to observe the regular activities of an operation that has not been given time to prepare for an inspection, as provided in the annual monitoring inspections, and acting as a deterrent to violating OCal regulations.

If unannounced inspections are not possible due to State cannabis regulations or other extenuating circumstances, notice of up to 4 hours prior to the inspector arriving on-site may be given. The shorter the notice, the more likely the visit will fulfill the inspection's intended purposes.

Per OCal regulations, an operation's expected regular business hours are 8:00am – 5:00pm (Pacific Time), Monday through Friday, excluding holidays. A certified operation should inform its certifying agent of its regular businesses hours if they are different than the expected regular business hours.

3.1. General

3.1.1. Certifying agents should conduct unannounced inspections of at least five (5) percent of their total certified operations per year. Certifying agents with fewer than 20 certified operations should conduct at least one (1) unannounced inspection per year.

3.1.2. Certifying agents should have a long-term plan for conducting unannounced inspections across geographic location and certification type.

3.1.3. Certifying agents should not accept applications for certification from locations where they are unable or unwilling to conduct unannounced inspections.

3.1.4. Operations may be chosen at random or due to specific criteria. The certifying agent should disclose to the operation the reason the operation was chosen for the unannounced inspection. Criteria for conducting an unannounced inspection of an operation may include, but is not limited to:

a. Previous noncompliance issues.
b. Complaints.
c. OCal and non-OCal or non-organic production, especially of visually indistinguishable OCal and non-OCal cannabis.
d. Risk of contamination from adjoining land use or commingling, or contamination during handling.
e. Complexity of operation.

3.1.5. Unannounced inspections may be limited in scope, depth, and breadth, and may cover only certain aspects of the operation, such as parcels, facilities, products, etc. Certifying agents should direct the inspector to assess a specific area of the operation during an unannounced inspection.

3.1.6. An inspection report must be written by the inspector, sent to the client, reviewed by the certifying agent, and the results communicated to the clients pursuant to OCal regulations and the certifying agent's internal protocols.

3.1.7. Inspectors may conduct sampling during an unannounced inspection but the inspector must review aspects of the operation, in addition to collecting a sample, for the visit to be considered an unannounced inspection.

3.1.8. Certifying agents are responsible for providing adequate training for their inspectors to ensure that inspectors do not trespass or break any laws during unannounced inspections. Inspectors should not enter private property without explicit permission of the operation. Inspectors are advised to have adequate identification, such as a business card, and/or explanatory letter from the certifying agents, to demonstrate they are acting on behalf of the certifying agent.

3.1.9. If an operation refuses to allow an inspector access to any part of an operation during normal business hours, including the non-OCal portions of the operation, the operation is in violation of OCal regulations § 10503 and the certifying agent should promptly issue a Notice of Noncompliance to the operation.

3.1.10. Certifying agents are encouraged to have a written policy on unannounced inspection protocol and inspector access to certified facilities that includes expected hours of operation. This policy should be provided to all certified operations and inspectors.

3.1.11. Certifying agents may charge an operation for unannounced inspections as long as the fees are clearly disclosed to all certified operations. Fees charged must be filed with the department in accordance with OCal regulation § 10409 (b)(9).

4. Records

4.1. Certifying agents accredited by the department will maintain records according to OCal regulation § 10401(a)(9) and certifying agents accredited by the NOP will maintain records according to NOP regulation 7 CFR § 205.510(b).

4.2. Certified operations will maintain records according to OCal regulation § 10500(e).

5. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

7 CFR § 205.510. Annual Report, Recordkeeping, and Renewal of Accreditation.

Sampling Procedures
for OCal Cannabis Residue Testing

1. Purpose

This instruction assists certifying agents with establishing procedures for sampling and testing in compliance with OCal regulations.

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

3 CCR § 10000. Definitions.

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

3 CCR § 10402. Application for accreditation.

3 CCR § 10410. Registration renewal and reporting.

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, its 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 (OCal regulations § 10402(c)(6). 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. For example, during a complaint investigation that involves application of prohibited substances, the OCal Program may request copies of an NOP-accredited certifying agent's procedures.

All registered certifying agents are required to submit a copy of Certificates of Analysis (COA) for no less than 5 percent of the registered certifying agent's certified operations tested in the previous year pursuant to § 10410(d)(8) and § 10711(d) of the OCal regulations.

4. Procedure

4.1. Conditions Under Which Samples Should Be Collected.

a. When it is suspected that a prohibited substance has been applied.

b. When it is suspected that contamination from genetically modified organisms or prohibited substances may have occurred.

c. When pesticide drift may have occurred.

d. To gather evidence as part of an investigation.

e. As part of a surveillance sampling program.

4.2. Sample Selection

Agricultural inputs (i.e. seeds, soil, water, nutrients), cannabis waste, nonmanufactured cannabis and cannabis products intended to be sold, labeled or represented as OCal may be sampled.

Sample collectors may choose to select samples which attempt to detect contamination where it is most likely to occur due to risk factors present at a given operation or a location within an operation.

4.3. Sample Amounts

Sample collectors should collect samples sufficient for processing and reanalysis if necessary. If collecting from multiple containers, sample collectors should confirm the products being sampled are from the same batch.

Certifying agents should work with the lab to determine a sufficient sample amount.

4.4. Sample Integrity

a. Samples of unpackaged cannabis must be taken using gloved hands (latex or clean rubber gloves) and removed from the plant or storage bins using a clean utensil.

b. Each sample shall be packed by the sample collector using precautions to prevent sample contamination from commingling or contact with prohibited substances.

c. Sample collectors should avoid including excess dirt and foliage (as appropriate) from field samples.

d. Samples should be placed into a clean plastic bag (or other receptacle required by a given laboratory) and sealed with tape to provide a tamper-proof seal.

e. Samples should be initialed and dated by the sample collector who has bagged the sample. In addition to the initial and date, the outside of each sample bag should be permanently marked with a unique identification code.

f. Sample collectors should ensure that the transport container is properly sealed and labeled.

g. Certifying agents should follow any additional lab requirements for maintaining sample integrity for wet cannabis samples.

4.5. Sample Collection and Transport Documentation

a. Sample ID number.

b. The date the sample was collected.

c. Laboratory code.

d. Certified operation name.

e. Facility type (i.e. cultivation, cultivation-processor, cultivation-nursery, distributor)

f. Identification of sampling site (distributor address or cultivator premises address and premises map).

g. Cultivator or distributor license number.

h. Sample identifying information (i.e. harvest batch number, UID, variety name, or other identification).

i. Total sample size by weight or unit count.

j. Sampling conditions or problems encountered during the sampling process, if any.

k. Certifier name.

l. Collector's name and signature.

m. Shipper/transporter name.

n. If not a private person, shipper's commercial cannabis license number.

o. Ship date.

Note: The certified operation must be provided documentation (i.e., a receipt) when a sample is obtained for analysis.

4.5.1 Laboratory Documentation

Upon arrival at the laboratory, the following information should be recorded by the laboratory and included with the sample results:

a. Date received.

b. Name or initials of person receiving the sample.

c. Explanation for what happened to a sample that is not analyzed (e.g., chain of custody breached, rotten sample, sample miscoded).

5. References

Recommended methods of sampling for the determination of pesticide residues by The Codex Alimentarius Commission. Web. 25 Jan. 2011. www.codexalimentarius.net/download/standards/361/CXG_033e.pdf

Codex Alimentarius Commission guidance on which portion of the commodity to be sampled and recommended methods of sample preparation for the determination of residues. Web. 25 Jan. 2011. www.codexalimentarius.net/download/standards/43/CXG_041e.pdf

United States. Department of Agriculture. Agricultural Marketing Service. *AMS Pesticide Data Program Standard Operating Procedures: SOP No: PDP SAMP PROC-02*. Revision 7. Washington, DC: United States Department of Agriculture, 2009. Print.

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.

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 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 in circumstances such as an appeal by a certified operation of a certifying agent's notice of proposed revocation due to application of prohibited substances.

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.

Whatever method is used to detect pesticide residues, a laboratory should be able to test for analytes listed on OCal 2611-1, the required pesticide tests for substances prohibited for use on cannabis by California state law, and any additional analytes required by the certifying agent.

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.

4.2. Laboratory Selection Requirements

a. Hold a current commercial cannabis laboratory license from the Bureau of Cannabis Control, or

b. Hold current accreditation to ISO/IEC 17025:2005, *General Requirements for the Competence of Testing and Calibration Laboratorie*s, or

c. Be approved on a case-by-case basis by OCal *and* hold current accreditation to an alternate standard pursuant to section 10711(f) of the OCal regulations.

d. 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.

e. 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).

f. 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

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

analysis.

b. Homogenization

1. 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.

2. If a sample was previously frozen and shipped on ice packs, then it should be homogenized upon receipt at the laboratory.

3. The entire sample as received should be homogenized by the laboratory to obtain a suitable representative portion for analysis.

4. Homogenized samples should be stored at less than -20 degrees Celsius.

5. 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.

c. 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

OCal 2610. Sampling Procedures for OCal Cannabis Testing.

OCal 2611-1. Prohibited Pesticides for OCal Residue Testing.

DCC Regulations, Title 4 California Code of Regulations (4 CCR)

4 CCR § 15711. Laboratory Analyses Standard Operating Procedures.

4 CCR § 15712. Test Methods.

4 CCR § 15719. Residual Pesticides Testing.

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

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.

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Prohibited Pesticides for OCal Residue Testing

1-Naphthol
3-Hydroxycarbofuran
5-Hydroxythiabendazole
Acephate
Acetamiprid
Acetochlor
Aldicarb
Aldicarb sulfone
Aldicarb sulfoxide
Allethrin
Atrazine
Azinphos methyl
Azoxystrobin
Bendiocarb
BHC alpha
Bifenazate
Bifenthrin
Bitertanol
Boscalid
Bromacil
Buprofezin
Captan
Carbaryl
Carbendazim (MBC)
Carbofuran
Chlorantraniprole
Chlordane cis
Chlordane trans
Chlorfenapyr
Chlorothalonil
Chlorpropham
Chlorpyrifos
Chlorpyrifos methyl
Clofentezine
Clopyralid
Clothianidin
Coumaphos
Cyazofamid
Cycloate
Cyfluthrin
Cyhalothrin, Total (Cyhalothrin-L + R157836 epimer)
Cypermethrin
Cyprodinil
Cyromazine
DCPA
DDD o,p'
DDD p,p'
DDE o,p'
DDE p,p'
DDT o,p'
DDT p,p'
DEF (Tribufos)
Deltamethrin (includes parent Tralomethrin)
Diazinon
Diazinon oxygen analog
Dichlorvos (DDVP)
Dicloran
Dicofol o,p'
Dicofol p,p'
Dieldrin
Difenoconazole
Diflubenzuron
Dimethoate
Dimethomorph
Dinotefuran
Diphenamid
Diphenylamine (DPA)
Disulfoton
Disulfoton sulfone
Diuron
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Esfenvalerate+Fenvalerate Total
Ethephon
Ethion
Ethoprop
Ethoxyquin
Etoxazole
Famoxadone
Fenamidone

Fenamiphos
Fenamiphos sulfone
Fenamiphos sulfoxide
Fenarimol
Fenbuconazole
Fenhexamid
Fenpropathrin
Fenpyroximate
Fenthion
Fipronil
Flonicamid
Fludioxonil
Fluoxastrobin
Fluridone
Flutolanil
Fluvalinate
Folpet
Fonofos
Formetanate hydrochloride
Heptachlor epoxide
Hexachlorobenzene (HCB)
Hexaconazole
Hexythiazox
Hydroprene
Imazalil
Imidacloprid
Indoxacarb
Iprodione
Iprodione metabolite isomer
Lindane (BHC gamma)
Linuron
Malathion
Malathion oxygen analog
Metalaxyl
Methamidophos
Methidathion
Methiocarb
Methomyl
Methoxychlor Total
Methoxyfenozide
Metolachlor
Metribuzin
Mevinphos Total
MGK-264
Myclobutanil
Naled
Napropamide
Nonachlor cis
Nonachlor trans
Norflurazon
Norflurazon desmethyl
Omethoate
O-Phenylphenol
Oxadixyl
Oxamyl
Oxamyl oxime
Oxydemeton methyl sulfone
Parathion methyl
Pendimethalin
Pentachloroaniline (PCA)
Pentachlorobenzene (PCB)
Pentachlorophenyl methyl sulfide
Permethrin Total
Phenmedipham
Phorate sulfone
Phorate sulfoxide
Phosalone
Phosmet
Piperonyl butoxide
Pirimicarb
Pirimiphos methyl
Prallethrin
Prochloraz
Procymidone
Prometryn
Pronamide
Propargite
Propiconazole
Pymetrozine
Pyraclostrobin
Pyridaben
Pyrimethanil
Pyriproxyfen
Quinoxyfen
Quintozene (PCNB)
Resmethrin
Simazine
Spinetoram
Spiromesifen Total (parent + enol metabolite)

Sulfentrazone
Tebuconazole
Tebufenozide
Tetrachlorvinphos
Tetradifon
Tetrahydrophthalimide (THPI)
Thiabendazole
Thiacloprid
Thiamethoxam
Thiobencarb
Thiodicarb
Triadimefon
Triadimenol
Trifloxystrobin
Triflumizole
Trifluralin
Vinclozolin

References

OCal Program Handbook

OCal 2610. Sampling Procedures for OCal Cannabis.

OCal 2611. Laboratory Selection Criteria for Pesticide Residue Testing.

Responding to Results of Pesticide Residue Testing

1. Purpose

This instruction supports a consistent response by certifying agents to prohibited pesticide residue detections that result from following OCal regulations § 10711.

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

3 CCR § 10000. Definitions.

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

3 CCR § 10202. Land Requirements.

3 CCR § 10209. Commingling and contact with prohibited substance prevention practice standard.

3 CCR § 10408. Requirements for registration.

3 CCR § 10711. Inspection, testing and reporting.

3 CCR § 10712. Exclusions from sale as OCal and reporting.

3. Background

The National Organic Program (NOP) policy is to take action if residue of a prohibited pesticide is detected at or above 0.01 ppm.

If there is no EPA tolerance or FDA action level, the product will be excluded for sale as organic.

If the residue detected is at or below 5 percent of the EPA tolerance or, if there is no EPA tolerance, at or below the FDA action level, actions taken will vary but it's possible the product will not be excluded from sale as organic.

4. Policy

Section 10711 of the OCal regulations specifies testing requirements for nonmanufactured cannabis and cannabis products that will be sold, labeled, or represented as OCal.

Certifying agents are responsible for collecting samples of OCal nonmanufactured cannabis and cannabis products from certified operations and having those samples tested to detect the presence of residues in violation of the OCal regulations as specified in § 10105 or § 10711(e) of the OCal regulations.

The OCal Program has set its action level for detection of a prohibited pesticide at 0.01 ppm to reflect the NOP policy.

There are no established EPA tolerances or FDA action levels for cannabis but if the Department of Cannabis Control (DCC) has established an action level for the detected residue that is higher than 0.01 ppm and the residue detected is at or below the DCC action level, actions taken will vary (see details below) but it's possible the product will not be excluded from sale as OCal.

If there is no DCC action level for the prohibited detected pesticide, residue detected at or above 0.01 ppm will result in the product being excluded from sale as OCal.

5. Procedure

5.1. No Detected Residues

If no residues of prohibited pesticides are detected, the registered certifying agent should:

a. Notify the certified operation of the test results and indicate that the product may be sold as OCal; and

b. Retain the test results, which must be made available to the public upon request and will be reviewed as part of the next registration renewal.

5.2. Residues Detected at Less Than 0.01 ppm

If tests detect residues of prohibited pesticides at less than 0.01 parts per million (ppm), which is the same as 10 parts per billion (ppb), or below the action level set by the DCC in 4 CCR Section 15719:

a. Notify the certified operation of the test results and indicate that the product may be sold as OCal;

b. Assess why the residue is present and follow up with operation as appropriate; and

c. Retain the test results, which must be made available to the public upon request and will be reviewed as part of the next registration renewal.

5.3. Residues Detected at or Above 0.01 ppm

If a test detects a residue of a prohibited pesticide at or above 0.01 ppm, the certifying agent should first determine if the DCC has established an action level for that pesticide.

5.3.1. DCC Action Level is Established and Residue Is At or Below the DCC Action Level

If the DCC has established an action level for the detected pesticide in the tested sample, follow the appropriate instructions below based on the level detected (for residues below 0.01 ppm, see 5.2 above):

a. Notify the certified operation of the test results.

b. Assess why the residue is present.

c. If appropriate, consider a notice of noncompliance for the following violations:
   1. OCal regulations § 10202(a)(2): application of prohibited substances. The certifying agent should consider suspending or revoking the operation's certification.
   2. OCal regulations § 10202(a)(3): inadequate buffer zones to prevent the unintended application of prohibited substances. The notice should require corrective actions to prevent future contamination.
   3. OCal regulations § 10209: inadequate measures to prevent commingling or contamination of OCal cannabis. The notice should require corrective actions to prevent future contamination.

d. If residues are not a result of the application of prohibited pesticides, the cannabis may be sold as OCal.

e. If suspensions, revocations, or civil penalties are appropriate, coordinate adverse actions with the department.

f. Retain the test results, which must be made available to the public upon request and will be reviewed as part of the registration renewal.

5.3.2. DCC Action Level Is Not Established or Residue Is Above the DCC Action Level

a. Immediately notify the certified operation of the test results and indicate that the product may not be sold as OCal;

b. If appropriate, immediately report the violation to the department as described in 4.4 below; and

c. If appropriate, consider a notice of noncompliance for the following violations:
   1. OCal regulations § 10202(a)(2): application of prohibited substances. The notice should propose to suspend or revoke the operation's certification.
   2. OCal regulations § 10202(a)(3): inadequate buffer zones to prevent the unintended application of prohibited substances. The notice should require corrective actions to prevent future contamination.
   3. OCal regulations § 10209: inadequate measures to prevent commingling or contamination of OCal products. The notice should require corrective actions to prevent future contamination.

d. If suspension, revocation, or a civil penalty is appropriate, coordinate adverse actions with the department.

e. Retain the test results, which must be made available to the public upon request and will be reviewed as part of the next registration renewal.

5.3.3. Unavoidable Residual Environmental Contamination

If residue testing detects Unavoidable Residual Environmental Contamination (UREC) at levels greater than 0.01 parts per million (ppm), the certifying agent should notify the certified operation of the finding and that the cannabis product shall be excluded for sale as OCal.

5.4. Reporting Violations

If test results indicate that the tested sample contains pesticide residues that exceed the Food and Drug Administration's (FDA) or the Environmental Protection Agency's (EPA) regulatory tolerances, the registered certifying agent must promptly report such data to the department.

Violations may include application of a pesticide which is prohibited by the EPA, the California Department of Pesticide Regulation, or the Bureau of Cannabis Control or application of an allowed pesticide at levels exceeding regulatory tolerances.

6. References

Other Laws and Regulations

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

Title 40 Code of Federal Regulations Part 180. US EPA tolerances.

"Guidance for Industry: Action Levels for Poisonous or Deleterious Substances in Human Food and Animal Feed." U.S. Food and Drug Administration Home Page. 22 Dec. 2010.

Technical Assistance Instruction

1. Purpose

This instruction is intended to clarify what technical assistance registered certifying agents and inspectors may provide to OCal cultivators and distributors.

2. Scope

This instruction affects registered certifying agents and inspectors pursuant to the OCal regulations.

3. OCal Regulations, Title 3 California Code of Regulations (3 CCR)

3 CCR § 10000. Definitions.

3 CCR § 10401. Requirements for Accreditation.

4. Policy

Certifying agents and inspectors are required to provide sufficient information to applicants for certification and certified operations to enable them to comply with the applicable requirements of § 10401(a)(8) of the OCal regulations. Certifying agents may provide technical assistance to applicants for certification and certified operations that helps them understand the OCal Program requirements. Technical assistance includes:

- Providing information on the mission, goals, and objectives of the OCal Program;
- Providing information on well-known alternatives for overcoming problems, which are available to everyone and not specific or proprietary to a single operation;
- Providing educational information, such as in-house publications, conferences, workshops, informational meetings, and webinars, for which participation is voluntary and open to the general public; and
- Suggesting alternatives that are in accordance with published decisions or the OCal Program Handbook, but ensuring the operation understands their responsibility for choosing cultivation and distribution methods that comply with the OCal regulations.

Certifying agents must prevent conflicts of interest, either real or perceived, by not giving advice or providing consultancy services to applicants for certification and certified operations for overcoming identified barriers to certification (§ 10401(a)(12)(D) of the OCal regulations). Consultancy does not automatically occur every time a certifying agent provides an operation with information to overcome barriers to complying with the OCal regulations. Consultancy does occur, however, when a certifying agent:

- Does the work for an operation, or participates in any of the operation's activities or management;
- Gives specific advice or training to a single operation or small group of operations on the development and implementation of the management system, operational procedures, or competence of an operation;
- Prepares or produces an operation's manuals, handbooks, or procedures;
- Provides specific advice on a single operation's certification problems;
- Is involved in an operation's decision-making process or participates in the design or manufacture of an operation's products or production methods;
- Suggests that the certification process would be simpler, easier, or less expensive if specific activities were undertaken; or
- Suggests actual changes that would bring an operation into compliance.

Inspections are not consulting visits. Inspectors often discover new information or documentation during onsite inspections, however, and may provide technical assistance by:

- Asking and answering questions, collecting information, and explaining the OCal regulations;
- Requesting information that may be missing from the operation's OCal system plan (OSP), or accepting updates to the OSP during the onsite inspection prior to the exit interview (clarifying information may be received during the exit interview);
- Capturing information provided by the operation, but not making suggestions that would bring the operation into compliance;
- Providing information on well-known alternatives for overcoming problems, provided that they are available to everyone and are not specific or proprietary to a single operation; or
- Suggesting alternatives that are in accordance with published decisions of OCal Program or the OCal Program Handbook, but ensuring the operation understands it is their responsibility to choose methods and materials that comply with the OCal regulations.

Inspectors may not:

- Provide advice on how a specific operation can overcome barriers to certification;
- Suggest that the certification process would be simpler, easier, or less expensive if specific activities were undertaken; or
- Suggest actual changes to an operation's system or OSP that would bring an operation into compliance.

OCal System Plans, OCal System Plan Updates, and Notification of Changes

1. Purpose

This document provides instructions for registered certifying agents (certifiers) on OCal system plans (OSP). It may also help interested operations to understand how to comply with the OCal regulations with respect to OSPs. This instruction clarifies the continuing certification process and explains how a certified operation may notify its certifier of changes that may affect its compliance with the OCal regulations.

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

3 CCR § 10000. Definitions.

3 CCR § 10101. What must be certified.

3 CCR § 10104. Recordkeeping by certified operations.

3 CCR § 10201. OCal system plans.

3 CCR § 10500. General requirements for certification.

3 CCR § 10506. Continuation of certification.

3. Policy and Procedures

3.1. OCal System Plans

The OCal regulations require OSPs as part of all initial OCal Program certification applications. To maintain certification, an operator must provide its certifier with annual updates to its OSP and notify its certifier of any changes that may affect its compliance with the OCal regulations (see § 10506 and § 10500(g) of the OCal regulations). Certifiers must review OSPs, annual updates, and any reported changes to ensure that an operation can comply or is in compliance with the OCal regulations.

Certifiers should explain the OCal regulations so that operations can determine which types of changes could affect compliance and explain the procedures for notifying them of changes.

Certifiers should require that OSPs, annual updates, and notifications of changes contain sufficient information to determine whether an operation is in compliance with the OCal regulations.

Certifiers may not require additional information that does not relate to compliance with the OCal regulations.

OCal will use accreditation and registration renewal assessments to verify that certifiers are appropriately enforcing the OCal regulatory requirements for OSPs, annual updates, and notification of changes.

3.1.1. OCal System Plan Overview

To become certified, an operation must submit an application provided by the certifier, a complete OSP, and the certifier's fees for certification review(s) and inspection(s). Certifiers must publish these fees in their fee schedule, which they will make available to all applicants.

3.1.2. OCal System Plan Requirements

The OSP must address all requirements relevant to the operation identified in § 10200 - § 10210 of the OCal regulations. The OSP includes the following areas, as applicable to the operation:

a. A description of practices and procedures to be performed and maintained, including the frequency with which they will be performed. For example:
   1. Practices to maintain or improve natural resources, including biodiversity;
   2. Procedures for notifying neighbors and road departments of OCal certification to prevent contamination of OCal cannabis and nonmanufactured cannabis products by prohibited substances;
   3. Tillage practices;
   4. Cultivation practices;
   5. Crop rotation practices;
   6. Pest management practices;
   7. Procedures for obtaining certified OCal seeds;
   8. Harvest and transportation practices including equipment cleanout to prevent contamination;
   9. Storage practices;
   10. Processing methods including equipment cleanout to prevent contamination; and/or

11. Labeling procedures.

b. Documentation of each substance to be used as an agricultural input.
   1. The input's composition and source as well as the location(s) where and frequency with which it will be used.
   2. Documentation of the commercial availability of some organic or OCal inputs, as per OCal regulations. For example, if a cannabis producer plants non-OCal seeds, then the producer must show evidence that an equivalent certified OCal seed variety was not available.
   3. The OSP must show that substances approved for specific restricted uses were employed in accordance with restrictions found in the National List of Allowed and Prohibited Substances, 7 Code of Federal Regulations (CFR) § 205.601 – § 205.606.
   4. The operation must show that it attempted to use adequate preventive practices before using approved pest control substances.
   5. Production inputs may include:
      A. Soil amendments, including compost and manure;
      B. Crop production aids;
      C. Pest control inputs;
      D. Seeds;
      E. Planting stock; and/or
      F. Post-harvest materials.

c. A description of the monitoring practices and procedures, including the frequency with which they will be performed. An operation must monitor its activities to ensure that its practices are effective. The results of monitoring should help the operation identify areas that need improvement. This helps operations maintain OCal integrity and maintain or improve natural resources.

   Monitoring methods may include:
   1. Soil testing (e.g., testing for organic matter content);
   2. Monitoring soil moisture or water quality;
   3. Product quality testing;
   4. Residue testing;
   5. Monitoring crop quality; and
   6. Pest monitoring.

d. A description of the recordkeeping system implemented to comply with § 10104 of the OCal regulations.

e. A description of the management practices and physical barriers established to prevent contact of certified OCal operations and products with prohibited substances. Operations that produce or handle both certified organic/OCal and nonorganic/non-OCal cannabis and nonmanufactured cannabis must provide a description of practices and barriers to prevent commingling of these products.

Management practices and physical barriers may include:

1. Buffer zones to prevent contamination;
2. Establishment of a physical barrier (e.g., a row of trees) to prevent drift of prohibited substances;
3. Notification of neighbors and road departments; and
4. Procedures for identifying OCal cannabis and nonmanufactured cannabis products during harvest, post-harvest processing and distribution.

f. A description of practices implemented to maintain or improve the natural resources of the operation, including soil, water, wetlands, woodlands, and wildlife, and respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. For more information regarding OSP documentation of natural resources and biodiversity conservation, see OCal 5020, Natural Resources and Biodiversity Conservation.

3.2. Other Items In An Operation's OCal Certification Application

a. Applicable fees charged by the certifier.

b. Additional information deemed necessary by the certifier to demonstrate compliance with the regulations. This may include:

1. Name(s) of previous certifier(s) and years applied;
2. Results of previous applications for certification;
3. Copies of all prior Notices of Noncompliance or other adverse actions;
4. Copies of all denials of certification;
5. A description and evidence of actions taken to correct any noncompliances; and/or
6. Other information deemed necessary by the certifier.

3.3. OCal System Plan Annual Updates

Each year, the operation must submit to its certifier:

a. Certification and inspection fees;

b. Updated contact information;

c. Any changes that the operation made during the previous year;

d. Any changes that are planned for the upcoming year;

e. An update on the correction of any previously identified noncompliances; and

f. Other information deemed necessary by the certifier to demonstrate compliance with the OCal regulations.

If the operation does not submit an annual update to its certifier, then it is in violation of § 10506 of the OCal regulations. There are many ways to comply with this requirement. Certifiers may request simple written statements, modified checklists, or supplemental forms to document activities. A simple written statement may allow for easier compliance reviews if there are few changes. Certifiers are to ensure OCal integrity by obtaining enough information to verify compliance with the OCal regulations, while being careful to set sensible limits on paperwork. Any required paperwork and documentation should be necessary and relevant to the applicable OCal regulations.

The annual update adds new information to the existing OSP. Its length and complexity will vary based on the type of operation. It does not require resubmission of the entire OSP or of any information that has not changed. Since operations are continuously certified until surrendered, suspended, or revoked, the annual update is not considered a new application for certification. Nonetheless, the update is a required and integral step in the continuation of certification process.

3.4. Notification of Changes

The operation is to notify its certifier prior to making any changes to its OSP that may affect its compliance with the OCal regulations. It must demonstrate compliance with the OCal

regulations but does not need to report any changes that do not affect its compliance. Some examples of situations that would require notification to the certifier include:

a. Application of a prohibited substance to any field, production unit, product or site involved in OCal production or handling, regardless of whether it was a direct application or drift from a neighboring area, and regardless of whether or not it was intentional. The operation must notify the certifier immediately of any such events.

b. Addition of acreage, a new field, production facility, to OCal production.
   1. If the operation plans to add a new field, facility, or unique production equipment to its certification, then the certifier will conduct an additional inspection before issuing an updated certificate.
   2. If the operation sells, labels, or represents products from fields or facilities as OCal that have not been inspected and that are not included on the certificate, then the operation is in violation of § 10101(a) of the OCal regulations.

c. Removal of a field or portion thereof from OCal production.

d. Development of a new retail label for the operation's OCal cannabis or nonmanufactured cannabis products.
   1. Any new retail labels developed for the operation's OCal cannabis or nonmanufactured cannabis products must be approved by the certifier before being used.

e. New processing of OCal cannabis or nonmanufactured cannabis products not already specified in the OSP.

f. Any change in the operation's practice, input, or procedure that may affect compliance with the OCal regulations.
   1. An operation should consult its certifier prior to using any new input in order to ensure that the material complies with the OCal regulations. The use of an unapproved material may be considered an application of a prohibited substance, which would remove the operation's land from certification for three years.

The operation may notify its certifier of changes verbally and in writing.

3.5. Receipt of Changes

The certifier should document all notifications so that the information may be reviewed and verified as part of the annual certification process. If necessary, the certifier may require the operation to submit additional documentation at the time of notification. Alternatively, the operation may submit documentation with the next annual update. The certifier will determine whether and when documentation is required on a case-by-case basis.

Certifiers should clearly communicate their procedures for notification of changes to applicants and certified operations. The OCal Program will review the available evidence during accreditation or registration renewal assessments to ensure that the certifier has established appropriate requirements for being notified of changes. If the OCal Program finds that a certifier failed to enforce these requirements, or that a certifier required notification of changes that were not relevant to the regulations, the OCal Program may issue a Notice of Noncompliance to the certifier.

Certifiers may not advise operations on how to overcome barriers to certification (see OCal 2614, Technical Assistance).

If a change could affect compliance, the certifier should:

a. Inform the operation of the impact on compliance;

b. Determine if the change requires submission of records/documentation;

c. Determine if the change impacts the operation's certification status (i.e., in the case of the application of a prohibited substance); and

d. Update the operation's file with the new information and issue an adverse action if necessary.

3.6. Certification Resources

The OCal Program handbook provides resources on production standards, sample OSP templates, and certification procedures.

4. References

OCal Program Handbook

OCal 2602. Recordkeeping for Certifying Agents and Certified Operations.

OCal 2615 OSPs, OSP Updates, and Notification of Changes, April 23, 2021

OCal 2614. Technical Assistance.

OCal 5020. Natural Resources and Biodiversity Conservation.

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 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 material review organizations accredited to

ISO Guide 17065 (formerly ISO Guide 65). These material review organizations must abide by OCal guidance document series' 5033, which detail the procedures and decision trees for classifying materials used for OCal cannabis production, and 5034, which clarify certain materials for use in OCal production. These documents include an illustrative list of allowed natural and synthetic materials and a limited appendix of materials prohibited in OCal production. The California Department of Food and Agriculture (CDFA) Organic Input Material (OIM) program may be consulted for their review of organic crop materials. The Organic Materials Review Institute (OMRI) may be consulted for materials used in OCal production.

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, Material Review Organization (MRO) or the Environmental Protection Agency;
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 outline the 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

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

7 CFR § 205.601. Synthetic Substances Allowed for Use in Organic Crop Production.

7 CFR § 205.602. Substances Prohibited for Use in Organic Crop Production.

Processed Animal Manures in OCal Production

1. Purpose

This document explains the use of heat processed animal manures in OCal cannabis and nonmanufactured cannabis production operations certified under the OCal Program. This policy does not supersede requirements of other Federal and State laws and regulations. However, written procedures and records prepared by producers to meet the OCal Program requirements may be the same as those prepared to meet other regulatory requirements.

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

Processed manure may be used as a supplement to a soil building program without a specific interval between application and harvest.

As always, cultivators are expected to comply with all applicable requirements of the OCal regulations with respect to soil quality, including ensuring the soil is enhanced and maintained through proper stewardship.

Processed manure products must be treated so that all portions of the product, without causing combustion, reach a minimum temperature of either 150° F (66° C) for at least one hour or 165° F (74° C), and are dried to a maximum moisture level of 12 percent; or an equivalent heating and drying process could be used. In determining the acceptability of an equivalent process, processed manure products should not contain more than $1x10^3$ (1,000) Most Probable Number (MPN) fecal coliform per gram of processed manure sampled and should not contain more than 3 MPN Salmonella per 4 grams sample of processed manure.

Reassessed Inert Ingredients

1. Purpose

This guidance provides information to OCal certifying agents, cultivators and distributors regarding the allowance of inert ingredients, primarily used in pesticide products.

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

3 CCR § 10000. Definitions.

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

3. Background

The OCal regulations allow and prohibit substances for use in OCal production according to the National List of Allowed and Prohibited Substances (National List), at § 205.601 and § 205.602 in title 7 of the Code of Federal Regulations (CFR). The National List allows use of inert ingredients in a variety of applications, primarily as pesticides, and refers to lists maintained and managed by Environmental Protection Agency (EPA):

List 4A – Minimal Risk Inert Ingredients

List 4B – Other Ingredients for which EPA has sufficient information to reasonably conclude that the current use pattern in pesticide products will not adversely affect the public health or the environment.

The EPA has been reassessing exemptions from tolerances for inert ingredients in pesticide products to ensure that they meet the safety standard established by the Food Quality Protection Act (FQPA). FQPA requires the reassessment of inert ingredient tolerances and tolerance exemptions that were in place prior to August 3, 1996. The EPA completed their reassessment in 2006 and certain List 4 inert ingredients were revoked (below).

List 4 inert ingredients now prohibited under the OCal Program are:

- Acetylated lanolin alcohol (CAS Reg. No. 91994-94-4); Revoked in 70 FR 31401, June 1, 2005.
- Acrylic acid methyl ester, polymer with acrylonitrile and 1,3-butadiene

- (CAS Reg. No. 27012-62-0); Revoked in 71 FR 14411, March 22, 2006; the tolerance exemption is called “Nitrile rubber modified acrylonitrile methyl acrylate conforming to 21 CFR 177.1480.
- Coumarone – indene resin (CAS Reg. No. 63393-89-5); Revoked in 71 FR 14411, March 22, 2006.
- Manganous oxide (CAS Reg. No. 1344-43-0); Revoked in 71 FR 45415, August 9, 2006.
- Pentaerythritol monostearate (CAS Reg. No. 78–23–9); Revoked in 71 FR 14411, March 22, 2006.
- Pentaerythritol tetra stearate CAS Reg. No. 115–83–3); Revoked in 71 FR 14411, March 22, 2006.
- Polyglyceryl phthalate ester of coconut oil fatty acid (CAS Reg. No. 66070-87-9); Revoked in 71 FR 45415, August 9, 2006.
- Sodium fluoride (CAS Reg. No. 7681-49-4); Revoked in 70 FR 31401, June 1, 2005.

The EPA has also reclassified a number of List 3 inert ingredients (inerts of unknown toxicity) as List 4 inert ingredients. Those materials have not been added to EPA’s published List 4 documents but appear through individual approvals issued by EPA and posted on their website.

The EPA has informed the USDA NOP that it may not issue an updated List 4. The NOP plans to amend the National List of Allowed and Prohibited Substances, 7 CFR § 205.601 – § 205.606, to accommodate this change. The OCal Program will notify certifiers and certified operations when the National List has been amended that affects OCal operations.

4. Policy

Parties reviewing pesticide product ingredients for compliance with the OCal Program are advised to use the EPA’s List 4, published on the EPA Website, minus the revoked inert ingredients above, to verify allowed inert ingredients. This policy will remain in effect until superseded by regulatory changes or new guidance.

5. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

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

Other Laws and Regulations

OCal 5008 Reassessed Inert Ingredients, April 23, 2021

EPA List 4, https://www.epa.gov/pesticide-registration/categorized-lists-inert-ingredients-old-lists

United States. Cong. Food Quality Protection Act of 1996. 104th Cong. Washington: GPO, 1996. Print.

Natural Resources and Biodiversity Conservation

1. Purpose

This guidance provides examples of production practices that support conservation principles and demonstrate compliance with § 10200(b) of the OCal regulations.

This guidance also clarifies: 1) the certified operator's responsibility to select, carry out, and record production practices that "maintain or improve the natural resources of the operation;" and 2) the registered certifying agent's (certifier) responsibility to verify operator compliance with this requirement.

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

3 CCR § 10000. Definitions.

3 CCR § 10200. General.

3 CCR § 10201. OCal system plans.

3 CCR § 10402. Application for accreditation.

3. Background

Conservation of natural resources and biodiversity is a primary tenet of organic production. The natural resources and biodiversity conservation requirement at § 10200(b) of the OCal regulations requires operations to "maintain or improve the natural resources of the operation, including soil and water quality, and respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity."

"Natural resources of the operation" is defined in § 10000 of the OCal regulations "as the "physical, hydrological, and biological features of a production operation, including but not limited to soil, water, wetlands, woodlands, and wildlife."

Compliance with the requirement to conserve biodiversity requires that a cultivator or distributor implement and incorporate into their OCal system plan (OSP) practices that support biodiversity and avoid, to the extent practicable, any activities that would diminish it.

Maintaining or improving the natural resources of an operation encompasses a range of conservation principles including, but not limited to: protecting riparian areas; supporting native species and habitat; minimizing invasive species; maintaining air quality; promoting crop diversity and plant condition; and improving soil condition.

3. Policy and Procedures

Role of Certified Operations

- Certified operations and applicants for certification must develop and submit an OSP to a certifier (§ 10201 of the OCal regulations). See OCal 2615, OSP, OSP Updates, and Notification of Changes for additional OSP information.
- Per § 10201(a)(6) of the OCal regulations, the OSP must include a comprehensive description of practices the certified operation will implement to maintain or improve the natural resources of the operation, including soil, water, wetlands, woodlands, and wildlife, and respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.
- Cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity may be listed together in one section or integrated into the other sections of the OSP.
- The OSP must also document the operation's approach to monitoring these activities (e.g., visual assessment of soil erosion, species counts for biodiversity, or testing for water quality).
- Certified operations may reference Appendix A - Examples of Activities (Plans, Practices, and Enhancements) that May Maintain or Improve Natural Resources and Biodiversity - for types of production practices that could be used to support natural resources conservation and biodiversity.
- For split operations or for operations that have non-certified portions of their property, the operation may also include in its OSP the practices implemented to maintain or improve natural resources or biodiversity on a portion of their land that is not certified but is adjacent to the certified land, if this practice directly benefits the certified land.
- The operation must implement and maintain the planned production practices as described in its OSP and maintain any records (e.g., activity logs for mowing; pest monitoring; reseeding; water or soil testing results; visual observations; or conservation maps) that would support a certifier's ability to verify compliance.

Role of Certifiers

- Pursuant to § 10201(a)(6) of the OCal regulations, certifiers must ensure that an operation's OSP includes a comprehensive description of practices it will implement to maintain or improve the natural resources of the operation, including soil, water, wetlands, woodlands, and wildlife, and respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.
- Certifiers can refer to Appendix A - Examples of Activities (Plans, Practices, and Enhancements) that May Maintain or Improve Natural Resources and Biodiversity for examples of activities (plans, practices, and enhancements) that may support compliance with § 10200(b) of the OCal regulations.
- A certified operation's monitoring plan could include the frequency of monitoring, the types of observations or testing the operation plans to conduct, and the method of documentation.
- Certifiers must verify compliance with § 10200(b) of the OCal regulations by ensuring that certified OCal operations are implementing the practices described in the OSP. As part of the onsite inspection, certifiers should ensure that inspectors observe the conservation practices implemented, or review records that support implementation of conservation practices.
- If a certified operation is implementing practices to conserve natural resources or biodiversity on a portion of its land that is not covered under its OCal certification but is adjacent to the certified land, and this practice directly benefits the certified land, then the inspector and certifier may consider such practices in the assessment of whether a producer is meeting requirements.
- Pursuant to § 10402 of the OCal regulations, certifiers should ensure that inspectors are sufficiently qualified to effectively assess compliance with the general natural resources conservation and biodiversity requirements in § 10200(b) of the OCal regulations. Qualifications may include, but are not limited to, knowledge, training, and experience observing and assessing conservation activities and monitoring in OCal or organic production.

Role of Inspectors

- Inspectors must be qualified to assess compliance with § 10200(b) of the OCal regulations. More specifically, inspectors must be able to recognize and evaluate areas where: 1) natural resources and biodiversity are already conserved; 2) conservation projects are planned; and 3) improvement is needed.
- During the onsite inspection, inspectors must verify the accuracy and implementation of the operation's activities (plans, activities and enhancements) and the monitoring approaches described by the operation in its OSP.
- During the onsite inspection, inspectors may note exceptions to the conservation requirement such as extreme climatic conditions, or damage to the ecosystem beyond the control of the operation. The inspector should communicate this information to the certifier for consideration as part of its review and certification decision.

4. References

Endangered Species Act of 1973, 16 U.S.C. § 1531 et seq.

OCal Handbook

OCal 2615 OSP, OSP Updates, and Notification of Changes

Appendix A
Examples of Activities (Plans, Practices, and Enhancements) that May Maintain or Improve Natural Resources and Biodiversity

The following examples outline beneficial activities within certain ecological contexts that certified OCal operations may use to maintain or improve biodiversity in their operations. This is not an exhaustive list. There are many other activities in varied ecological settings that operations can use to reach the same compliance goal.

a. Soil Composition
   1. Adding organic matter through the diversity of crops and inputs, to the soil to increase the diversity of soil organisms and to improve nutrient cycling, competitive exclusion of plant pathogens, long-term storage of soil carbon, and adaption to extreme climatic conditions and water holding capacity.
   2. Conserving and restoring forests, shrublands, woodlands, grasslands, riparian and wetland areas, which sequester carbon in soils and aid in cycling soil nutrients.

b. Soil Stability and Water Quality
   1. Creating, conserving, and restoring vegetative covers (forests, shrublands, woodlands, grasslands, riparian areas, and wetland areas) that control erosion and filter nutrient, pesticide, and pathogen pollutants. Minimizing disturbances, maximizing diversity, living roots and cover.
   2. Using no-till or permanent cover, conservation tillage, terracing, contour farming, micro-irrigation, windbreaks, cover crops, grass waterways and soil health practices.
   3. For lands coming into production for the first time or returning to production (e.g. Conservation Reserve Program (CRP) lands leaving the federal program and requesting organic certification), a new conservation plan can examine and implement a range of alternative practices to enhance the natural resources of the land.

c. Water Quantity
   1. Using water conservation techniques that save water for crops, livestock, wildlife, and riparian ecosystems.
   2. Choosing crops and other plants that are appropriate for the climate and landscape with water conservation in mind.
   3. Using suitable irrigation systems and schedules and monitoring them for water conservation.

4. Conserving or restoring forests, shrublands, woodlands, grasslands, riparian habitat, and wetland areas that absorb and hold water for long periods as part of a healthy water cycling process.
5. Using managed systems to “bank” soil moisture if fields are drained using tiles.

d. Wildlife Benefits
   1. Maintaining or improving diverse mixtures of plants to provide food, habitat, or shelter for pollinators, insects, spiders and other beneficial organisms such as arthropods, bats, and raptors.

e. Native Species and Natural Areas of the Operation
   1. Conserving high conservation value areas that have outstanding biodiversity importance or mitigating/restoring these areas elsewhere on the farm.
   2. Conserving and restoring wildlife and native plant communities specific to the site (forests, shrublands, woodlands, grasslands, riparian habitat, and wetland areas).
   3. Documenting rare, threatened, and endangered terrestrial and aquatic plants and animals and ecologically at risk ecosystems and taking steps to protect them.
   4. Conserving wildlife corridors and large blocks of habitat that reduce fragmentation.
   5. Making improvements to streams, lakes, and rivers, enhancing habitat for fish and other aquatic species.
   6. Allowing degraded riparian areas, prairies, and wetlands to be recolonized through natural processes.
   7. Actively restoring degraded land to its native habitat using species adapted to and historically present in the area.

f. Invasive Plants and Animals
   1. Closely monitoring invasive plants and animals threatening natural areas.
   2. Controlling invasive species before they spread.
   3. Avoiding seed, planting stock, soil amendments, and mulches that may import weed seeds and other pests.

g. Soil Stability and Water Quality
   1. Using nutrient budgets to protect water quality by managing crop nutrients.

2. Designing grassed waterways, filter strips, terraces, and other non-crop vegetation, and managing them to help control erosion and filter pollutants before they reach water bodies.
3. Using stream crossings, brush mattresses, and other engineered features to prevent erosion where year-round or intermittent water flows.
4. Using sediment basins to capture eroded or disturbed soil before it leaves the farm.

h. Co-existing with Wildlife
   1. Taking measures to minimize total habitat loss on adjacent land when wildlife is restricted from entering the production area.
   2. Designing and using management strategies as much as possible to repel, rather than destroy, intended and unintended species.

i. Supporting Wildlife
   1. Using strategic mowing, tilling, and harvesting methods to preserve sites where wildlife raises their young.

j. Crop Diversity
   1. Growing a variety of crop types, heirloom crops, or several genetic strains of the same crop.
   2. Growing locally-adapted seed varieties or those suited to site-specific conditions.

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 us 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

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

OCal 5021 Compost and Vermicompost in OCal Production, April 23, 2021

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

OCal Handbook

OCal 5006 Processed Animal Manures in OCal Production.

Substances Used in Post-Harvest Handling of OCal Products

1. Purpose

This guidance clarifies, for registered certifying agents (certifiers), certified OCal operations, and certification applicants: 1) what substances may be used in post-harvest processing; and 2) the regulatory requirements for facility pest management.

Appendix A, Examples of Post-Harvest Handling Substances Affected by this Guidance, provides examples of post-harvest substances affected by this guidance and Appendix B, Questions and Answers: Substances Used in Post-Harvest Handling of OCal Products, lists frequently asked questions and answers about using this guidance.

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

3 CCR § 10000. Definitions.

3 CCR § 10205. Crop rotation practice standard.

3 CCR § 10208. Facility pest management practice standard.

3. Policy and Procedure

3.1. A substance may be used in post-harvest handling/processing if it falls into one of the following categories[1]:

- Synthetic substances that are listed in § 205.601 of the National List of Allowed and Prohibited Substances (National List) specifically for post-harvest use may be used for handling/processing on farm or at a certified processing or distribution operation (e.g., lignin sulfonate or sodium silicate).

Natural (nonsynthetic) substances allowed for use in crop production that are not restricted or prohibited in § 205.602 of the National List may be used for post-harvest handling/processing on farm or at a certified processing or distribution operation.

[1] The use of any substance must comply with the U.S. Environmental Protection Agency (EPA) or U.S. Food and Drug Administration (FDA) requirements, as applicable.

3.2. All inert ingredients used in post-harvest pest control substances on cannabis must be either nonsynthetic and not prohibited in § 205.602 of the National List or allowed in § 205.601(m) of the National List.

3.3. Facility pest management.

The OCal regulations also provide for the use of certain substances in facility pest management, under certain circumstances, even though they are not on the National List. Section 10208 of the OCal regulations describes an order of preference for facility pest management practices. Cultivators or distributors must first apply management practices to prevent or control pests as described in § 10208(a) and (b) of the OCal regulations, including the use of lures and repellents containing nonsynthetic or synthetic substances that are consistent with the National List. If these practices are not adequate, then a nonsynthetic or synthetic substance "consistent with the National List" may be applied (see § 10208(c) of the OCal regulations).

The phrase "consistent with the National List" does not specify which section of the National List should be referenced in making this determination. For instance, materials such as pheromones, sticky traps, boric acid, and Vitamin D3 are listed in § 205.601 of the National List for use in crop production. Therefore, these substances would be consistent with the National List for facility pest control purposes. If none of the practices listed in § 10208 of the OCal regulations are effective, the handler may use substances that are not on the National List, provided that there is no contact with OCal cannabis or nonmanufactured cannabis products, the certifier and producer agree on the use of the substance, and its use complies with § 10208(d) of the OCal regulations.

3.3.1. Section 10208(c) of the OCal regulations allows cultivators and distributors to use nonsynthetic or synthetic substances consistent with 7 CFR § 205.601 and § 205.602 in the National List in facility pest management.

3.3.2. Any EPA-registered pesticide substance used in a facility pest application must be labeled for that use.

3.3.3. All inert ingredients in facility pest management products permitted under § 10208(c) of the OCal regulations must be either nonsynthetic or included in 7 CFR § 205.601(m).

3.3.4. Cultivators and distributors must demonstrate compliance with § 10208 of the OCal regulations in their OCal system plans.

3.3.5. Cultivators and distributors may use substances that are not on the National List for facility pest management, provided that there is no contact with OCal cannabis or nonmanufactured cannabis products, they are used in accordance with § 10208(d) of the OCal regulations, and the certifier agrees to the use and method of application of the substance.

4. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

7 CFR § 205.601 – § 205.602, National List of Allowed and Prohibited Substances (National List).

Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §301 et seq.

Other Definitions (adapted from *FDA Guidance for Industry: Antimicrobial Food Additives, July 1999*):

- *Facility.* A structure or site where production, handling, processing, packaging or storage of organic products occurs. A facility could include packing lines, wash lines, storage units, coolers, freezing plants, feed mills, milk houses, production structures such as housing for livestock, greenhouses and mushroom buildings.
- *Post-harvest substances.* Substances used in the post-harvest handling of raw agricultural commodities which are not further processed, either on farm or in handling facilities. This includes substances used for flotation, washing, sanitizing, cooling, storing, and for facility pest management.
- *Post-harvest handling.* Post-harvest handling is the act of handling raw agricultural commodities without further processing. Post-harvest handling activities preserve the essential form of the product. Examples of these activities include, but are not limited to: flotation, washing, sanitizing, cooling, packing, separation from foreign objects or plant parts (e.g., cleaning grain), removal of stems leaves or husks, and storage and pest control practices. “Further processing” includes actions that change the essential form of the product such as chopping, peeling, cutting, waxing, coating, drying, or combining with other ingredients.

Appendix A
Examples of Post-Harvest Handling Substances Affected by this Guidance

1. Diatomaceous earth is a natural substance used in crop pest management. It is regulated by EPA as a pesticide.

- Allowed as a nonsynthetic substance permitted in crop production.
- Allowed for post-harvest handling on raw agricultural products since there are no restrictions in 7 CFR § 205.602.
- Inert ingredients must either be compliant with 7 CFR § 205.601(m), or nonsynthetic.
- Must be used in accordance with label directions.

2. Pyrethrum, Bacillus thuringiensis, or other botanical or biological pesticides.

- Allowed as nonsynthetic substances for use in crop production, provided that the EPA label permits its use.
- Allowed for post-harvest use on raw agricultural products provided that the label permits its use.
- Inert ingredients must either be compliant with 7 CFR § 205.601(m), or nonsynthetic.

3. Copper sulfate, narrow range oils, elemental sulfur, insecticidal soaps.

- Allowed in 7 CFR § 205.601 as synthetic substances permitted for insect or disease control of crops.
- Not allowed for post-harvest use in direct contact with organic and OCal products, since these synthetic substances are not on the National List for post-harvest use.
- Could be used in compliance with 3 CCR § 10208(c) for handling facility pest management.

4. Clove oil is considered a pesticide that is exempt from EPA registration requirements.

- Allowed as a nonsynthetic substance permitted in crop production.
- Allowed for post-harvest handling since there are no restrictions in 7 CFR § 205.602.
- Inert ingredients must either be compliant with 7 CFR § 205.601(m), or nonsynthetic.

5. Ethanol and isopropyl alcohol.

- Allowed for crop production as synthetic substances in 7 CFR § 205.601(a) as algicides, sanitizers and disinfectants for crop production.

- Not allowed in direct contact with food products for post-harvest use, since they are synthetic and not listed for that use. (Note—Organic ethanol is permitted for handling use).
- Could be used in compliance with 3 CCR § 10208(c) for facility pest management.

6. Boric Acid
- Allowed for crop production as a synthetic substance in 7 CFR § 205.601(e)(3) as insecticides, structural pest control, no direct contact with organic food or crops.
- Not allowed in direct contact with food products for post-harvest use, since they are synthetic and not listed for that use.
- Could be used in compliance with 3 CCR § 10208(c) for facility pest management, provided there is no direct contact with organic and OCal products, as per the restriction at 7 CFR § 205.601(e)(3).

7. Mouse bait stations that are baited with warfarin (an anticoagulant rodent poison)
- Prohibited for use in crop production, since it is a synthetic substance, not included in 7 CFR § 205.601.
- Not allowed in direct contact with food products for post-harvest use, since they are synthetic and not listed for that use.
- Could be used in compliance with 3 CCR § 10208(d) for facility pest management, provided there is no contact with organic products or ingredients, and the certifier approves the intended use and plan for application. The producer must demonstrate that preventive management practices, physical controls, and use of substances on the National List are not effective, as per 3 CCR § 10208(a)-(c).

Appendix B

Questions and Answers: Substances Used in Post-Harvest Handling of OCal Products

1. Can I use this substance for post-harvest handling of raw cannabis?

- The substance is listed in 7 CFR § 205.601 (crops), with an annotation for post-harvest use:
  - ✓ YES
- The substance is nonsynthetic, and is not prohibited or restricted in 7 CFR § 205.602:
  - ✓ YES
- The substance is synthetic, and is listed in 7 CFR § 205.601 for crop use, without annotation for post-harvest use:
  - ✓ NO

2. Can I use this substance for facility pest control?[2] [3]

- The substance is listed in 7 CFR § 205.601 without any restrictions preventing use:
  - ✓ YES
- The substance is nonsynthetic, and is not listed in 7 CFR §205.602:
  - ✓ YES
- The substance is synthetic, not on the National List:
  - May be used by handlers/processors (including cultivators) when the substance is not in contact with OCal cannabis or nonmanufactured cannabis products, and with the certifier's approval, pursuant to 3 CCR § 10208(d).

[2] All pesticides must have an EPA registration or exemption from registration for use in facility pest control.
[3] Pursuant to 3 CCR § 10208(a)(b), management practices must be demonstrated before the substance may be used.

Commingling and Contamination Prevention in OCal Production

1. Purpose

This instruction provides examples of management practices to prevent contamination and commingling and explains what should be documented in the OCal system plan (OSP). It also clarifies the certifying agent's role in making sure the certified operation is preventing commingling and contamination.

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

3 CCR § 10000. Definitions.

3 CCR § 10201. OCal system plans.

3 CCR § 10209. Commingling and contact with prohibited substance prevention practice standard.

3. Policy

3.1. General

Certified operations must clearly describe in their OSPs their management practices to prevent commingling and contamination.

The OSP description should include risk prevention and avoidance measures implemented throughout the operation, identify control points, where risk of contamination is highest, and describe procedures to address control points.

A control point is any point or procedure in an OCal production system where loss of OCal integrity may occur through commingling of OCal with non-OCal cannabis or where OCal cannabis may be contaminated by prohibited substances.

Certifying agents must verify that the OSP identifies all control points and describes the practices and procedures to prevent contamination and commingling, that all practices and procedures are implemented and monitored with appropriate record-keeping and documentation, and that the operation is in compliance with the OCal regulations.

Certifying agents should include a section in the OSP where cultivators and distributors can describe risk prevention and avoidance measures implemented throughout the operation,

identify control points, and describe procedures to address control points. This section may include checklists and narrative questions that assist the operation with describing their unique contamination risks and explaining their prevention practices.

During inspection, certifying agents should:

a. Assess the risks and verify the adequacy and implementation of the practices and procedures described in the OSP to ensure that preventive commingling and contamination activities are consistently and accurately documented and implemented;

b. Evaluate any records retained by the operation to verify practices and procedures described in the OSP; and

c. For a split operation, review non-OCal activities and areas of the certified operation to verify compliance with the commingling and contamination prevention provisions of the OCal Program regulations.

3.2. Preventive Practices

Preventive practices may include physical boundaries, buffer zones, separate receiving, and manufacturing areas for OCal products, clean-out procedures, training of OCal and non-OCal personnel, or completely separate and different storage, packaging or packaging transportation systems.

3.3. Control Points

Certified operations should identify and address their commingling and contamination risks, or control points, in their OSP. This applies to both all OCal and split operations.

a. Examples of potential sources of contamination and commingling with the operation:
   1. Sanitation and pest management materials and practices;
   2. OCal and adjoining non-OCal areas;
   3. Reuse of boxes and transportation containers;
   4. Adequacy of equipment and storage unit cleaning and purging;
   5. Receiving inputs and ingredients;
   6. Storage and identification of prohibited substances, such as pesticides, and fertilizers;
   7. Use of custom operators and their equipment; and
   8. Transportation unit clean-out, documentation and inspection.

b. Examples of potential sources of contamination outside of the operation:
   1. Environmental conditions, such as the prevailing winds, land slope, upstream uses of creeks and waterways, and their impact on the adequacy of buffer zones between OCal and adjoining non-organic/OCal areas;
   2. Types of crops grown nearby (e.g. genetically modified crops);
   3. Pest management materials used on non-organic/OCal farms nearby and how materials are applied (e.g. backpack, airplane, fumigation, spray);
   4. Pest and weed management of adjoining public roads and areas; and
   5. Any other potential point or non-point sources of contamination.

b. Examples of procedures to address control point contamination or commingling risks:
   3. Accurate and detailed documentation of the production system;
   4. Preventive actions;
   5. Monitoring activities; and
   6. Corrective actions for control points that failed to mitigate risks.

The Use of Chlorine Materials in OCal Production

1. Purpose

This guidance provides clarification regarding the use of chlorine materials in OCal production.

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

3 CCR § 10000. Definitions.

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

3. Policy

Residual chlorine levels in water in direct contact with OCal products shall not exceed the maximum residual disinfectant limit under California Code of Regulations, title 22, § 64533.5 and the Safe Drinking Water Act (collectively, SDWA). To demonstrate compliance with the OCal regulations regarding chlorine, certified operators should monitor the chlorine level at the point where the water last contacts the OCal product in direct applications. The operation's OCal system plan (OSP), should contain a description of the operation's monitoring procedure. Certifying agents should review and verify records used by certified operations to demonstrate compliance during the operation's annual inspection.

3.1. Cultivators

a. Residual chlorine levels in water that's in direct contact with cannabis (when used pre-harvest) or as water from cleaning irrigation systems applied to soil should not exceed the maximum residual disinfectant level under the SDWA (currently 4mg/L expressed as Cl_2).

b. Chlorine products may be used up to maximum labeled rates for disinfecting and sanitizing equipment or tools. No intervening event is necessary before equipment is used in contact with crops.

3.2. Distributors

a. Chlorine materials may be used up to maximum-labeled rates for disinfecting and sanitizing cannabis contact surfaces. Rinsing is not required unless mandated by the label use directions.

b. Water used in direct post-harvest cannabis contact is permitted to contain chlorine materials at levels approved by the Food and Drug Administration or the Environmental Protection Agency for such purpose.
   1. Rinsing with potable water that does not exceed the maximum residual disinfectant level for the chlorine material under the SDWA must immediately follow this permitted use.
   2. Certified operators should monitor the chlorine level of the final rinse water, the point at which the water last contacts the product. The level of chlorine in the final rinse water must meet limits as set forth by the SDWA.

4. References

California Code of Regulations (CCR)

22 CCR § 64533.5. Maximum Residual Disinfectant Levels.

Code of Federal Regulations (CFR)

7 CFR § 205.601. Synthetic Substances Allowed For Use in Organic Crop Production.

40 CFR § 141.2. Definitions. “Maximum residual disinfectant level” means the highest level of a disinfectant allowed in drinking water.

40 CFR Part 142. National Primary Drinking Water Regulations Implementation.

United States Code (USC)

42 USC § 300f (4) (B) (III). Authorizes national primary drinking water regulations/Safe Drinking Water Act.

National Organic Standards Board (NOSB) Recommendations – Background

November 1995 NOSB recommendation on the use of chlorine materials in organic production.

May 2003 NOSB recommendation on the use of chlorine materials in organic production.

Seeds and Planting Stock in OCal Cultivation

1. Purpose

This guidance delineates the criteria that must be met for a cultivator to declare OCal seeds or planting stock as commercially unavailable, describes satisfactory documentation of commercial availability in the OCal system plan (OSP), and provides examples of acceptable evidence of following commercial availability guidelines and inputs documented in the OSP. This guidance also outlines factors a certified operation should consider when procuring inputs and substances used during OCal cannabis cultivation, including seed treatments.

This guidance does not apply to cover crop seeds, which are considered agricultural inputs and addressed in § 10105(c) of the OCal regulations.

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

3 CCR § 10000. Definitions.

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

3 CCR § 10201. OCal system plans.

3 CCR § 10204. Seeds and planting stock practice standard.

3 CCR § 10205. Crop rotation practice standard.

3 CCR § 10210. Temporary variances.

3 CCR § 10503. On-site inspections.

3. Policy

Documentation of commercial availability of OCal seeds and planting stock is not required during the first 12 months of the OCal Program.

Producers should develop and follow procedures for procuring OCal seeds, annual seedlings, and planting stock and maintain adequate records as evidence of these practices in their OCal system plan (OSP). Producers must also provide clear documentation regarding the inputs and

materials used during cannabis production (as required at § 10201(c)(2) of the OCal regulations).

Certifying agents must assess procedures and documentation of certified production and handling operations as they source seeds, annual seedlings, and planting stock on an annual basis. Each of these concepts is described in more detail below.

3.1. Sourcing of Seeds and Planting Stock

3.1.1. Certified operations must use OCal seed and planting stock in accordance with the requirements of the OCal regulations § 10204.

3.1.2. Seeds and planting stock must be procured according to the OCal seeds and planting stock practice standard in the OCal regulations § 10204.

3.1.3. Certified operations may use non-OCal seeds and planting stock only if equivalent varieties of OCal seeds and planting stock are not commercially available. When sourcing non-OCal seeds and planting stock, certified operations must comply with the following:

a. Operations should contact three or more seeds or planting stock sources to ascertain the availability of OCal seeds and planting stock.

b. Price cannot be a consideration in determining commercial availability.

An “equivalent variety” is a variety of the same “type” or with similar agronomic or marketing characteristics needed to meet site specific requirements for an operation. Characteristics considered when assessing an equivalent variety may include but are not limited to: number of days until harvest; color, flavor, moisture, chemical, or nutrient profiles of the variety of the harvested cannabis; vigor or yield of harvested cannabis; regional adaptation, and disease and pest resistance.

3.2. Recordkeeping for OCal Cultivators

3.2.1. The following records should be maintained by OCal cultivators:

a. A list of all seeds and planting stock indicating any non-OCal seeds or planting stock used, and a justification for their use, including lack of equivalent variety, form, quality or quantity considerations.

1. Records describing on-farm trials of OCal seed and planting stock can be used to demonstrate lack of equivalent varieties for site specific conditions.

b. A list of all substances used to treat seeds or planting stock.

c. The search and procurement methods used to source OCal seed and planting stock varieties, such as documentation of contact with three or more seed or planting stock sources to ascertain the availability of equivalent OCal seed or planting stock. Sources should include companies that offer OCal seeds and planting stock.

d. Acceptable verifying evidence may include, but is not limited to: agricultural input packaging, letters, email correspondence, purchase receipts, receiving documents, invoices, and inventory control documents.

3.3. Inputs Used for Treatment of Seeds or Planting Stock

3.3.1. Substances used in the treatment of seed and planting stock should be described in the OSP. Allowed treatments:

a. Peracetic acid is specifically allowed for use in disinfecting seed per the National List of Allowed and Prohibited Substances (National List) § 205.601(a)(6), found in title 7 of the Code of Federal Regulations.

b. Chlorine materials may be used per the National List § 205.601(a)(2). Use of chlorine products in handling of seeds on-farm can be considered a production use that is not in direct contact with cannabis, provided the treatment is followed by immediate rinsing with potable water that does not exceed the maximum residual disinfectant limit under the California Code of Regulations § 64533.5 (see references).

c. Other synthetic substances listed for appropriate uses on the National List at § 205.601 (e.g. for pest or disease control, or as a soil or plant amendment).

d. Nonsynthetic substances that are not prohibited are allowed as seed or planting stock treatments.

3.4. Examples of Types of Treatments That Should Be Reviewed by the Certifying Agent

a. Pesticides, including fungicides, herbicides and insecticides. All pesticides used as seed treatments must be compliant for organic production, including inert and active ingredients. Botanical or biological preparations cannot be genetically modified per prohibition for excluded methods as defined in the OCal regulations § 10105(a)(4).

b. Pelleting: A clay coating applied to seed to increase its size and modify its shape into a more uniform ball. Pelleting allows for more even and efficient direct seeding of fields or containers either by hand or mechanically with the use of seeding equipment calibrated to the specific sizes and shapes of the pelleted seed. Ingredients used in pelleting must be nonsynthetic or included on the National List at 7 CFR § 205.601 for an appropriate use.

c. Inoculants: bacteria that fix nitrogen from the air and soil that are commercially prepared for use with legumes during seeding. The materials used in Rhizobium or other microbial preparations cannot be genetically modified per the prohibition of excluded methods as defined in the OCal regulations § 10105(a)(4).

3.4.1. Substances used by a seed or planting stock purveyor prior to the harvest of their non-OCal seeds or non-OCal planting stock for sale and use in OCal cultivation are not considered “treatment”. Substances that are used by a seed or planting stock purveyor for seed cleaning and preparation (e.g. trisodium phosphate and chlorine solutions) after they harvest their non-OCal seeds for sale in OCal production are also not considered “treatment”, since they do not remain on the seed when it is planted. These substances do not need to be described in the OSP by the certified operation and do not require review by the certifying agent.

4. Role of the Certifying Agent

4.1. Certifying agents should annually review OSP documentation of commercial availability, agricultural inputs, and substances used to treat seeds and planting stock and assess compliance with OCal regulation § 10201(c)(2).

4.2. Certifying agents assess an operation’s progress in obtaining OCal seeds and planting stock by comparing current information to previous years.

4.3. Certifying agents should use on-site evidence, such as the examples provided in 3.3.1 (c) and (d), to verify OSP documentation.

5. References

California Code of Regulations (CCR)

22 CCR § 64533.5. Maximum Residual Disinfectant Levels.

Code of Federal Regulations (CFR)

7 CFR § 205.601. Synthetic Substances Allowed For Use in Organic Crop Production.

40 CFR § 141.2. Definitions. “Maximum residual disinfectant level” means the highest level of a disinfectant allowed in drinking water.

40 CFR § 141.65. Maximum residual disinfectant levels.

40 CFR Part 142. National Primary Drinking Water Regulations Implementation.

United States Code (USC)

42 USC § 300f (4) (B) (III). Safe Drinking Water Act. Authorizes national primary drinking water regulations.

National Organic Standards Board (NOSB) Recommendations - Background

August 2005 and November 2008 NOSB recommendations on determining commercial availability of organic seeds and planting stock and the responsibilities of the NOP, certifying agents, and operations for promoting and sourcing organic seeds and planting stock.

OCal Program Handbook

OCal 5026 The Use of Chlorine Materials in OCal Production.

Classification of Unique Materials

1. Purpose

This instruction clarifies how materials that are the result of naturally occurring biological processes, separation and extraction, and burning and combustion are classified under the National Organic Program (NOP) regulations National List of Allowed and Prohibited Substances (National List), starting at 7 CFR 205.600.

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

3 CCR § 10203. Crop nutrient practice standard.

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

3. Background

3.1. The organic industry typically uses the words “material” and “substance” interchangeably. Therefore, “substance” and “material” are synonymous and used interchangeably throughout this document.

3.2. National List § 205.601 and § 205.602 are incorporated into the OCal regulations under 3 CCR § 10105.

a. Substances may be classified as nonsynthetic (natural) or synthetic.

b. § 205.601 lists synthetic substances allowed in OCal production.

c. § 205.602 lists nonsynthetic (natural) substances prohibited in OCal production.

d. The NOP, the National Organic Standards Board (NOSB), USDA-accredited certifying agents, and material evaluation programs conduct substance classifications to determine (1) whether a substance is allowed or prohibited in organic production, (2) whether the substance needs to be considered for the National List, and (3) where on the National List the substance should be placed. More information regarding the National List can be found on the NOP website or in the NOP Handbook.

4. Policy

4.1. Products of naturally occurring biological processes

Products of naturally occurring biological processes, such as fermentation and composting, are considered natural and nonsynthetic. Examples of nonsynthetic materials produced from naturally occurring biological processes include vinegar, citric acid, compost, gibberellic acid, and spinosad. Additional examples are provided in Table 1 of OCal 5033-1, Decision Tree for Classification of Materials.

4.2. Separation and extraction of materials (not ingredients)

Some materials (not ingredients) used in nonmanufactured OCal cannabis production are produced using separation and extraction techniques. Separation and extraction methods used to create substances for use in OCal production may include, but are not limited to, distillation, solvent extraction, acid-base extraction, and physical or mechanical methods (e.g., filtration, crushing, centrifugation, or gravity separation).

For purposes of classifying a separated or extracted material as synthetic or nonsynthetic, a material may be classified as nonsynthetic (natural) if the extraction or separation technique results in a material that meets all of the following criteria:

a. At the end of the extraction process, the material has not been transformed into a different substance via chemical change;

b. The material has not been altered into a form that does not occur in nature; and

c. Any synthetic materials used to separate, isolate, or extract the substance have been removed from the final substance (e.g., via evaporation, distillation, precipitation, or other means) such that they have no technical or functional effect in the final product.

4.3. Burning or combustion

Burning of biological matter (e.g., plant or animal material) is considered a natural process and the product is classified as nonsynthetic (natural). For example, ash from manure burning is considered a nonsynthetic substance, though it is prohibited at § 205.602 of the National List.

The use of other types of ash must comply with the soil fertility and crop nutrient management practice standard in OCal regulation § 10203.

For purposes of classification of materials, pyrolysis (i.e., high temperature decomposition of substances in the absence of oxygen) may be treated as equivalent to burning or combustion.

The products of heating or burning non-biological matter (e.g., minerals) to cause a chemical reaction are classified as synthetic. For example, limestone (calcium carbonate, $CaCO_3$) heated to release carbon dioxide and produce quicklime (calcium oxide, CaO) is classified as a synthetic process.

Materials which are chemically changed due to allowed processing methods (e.g., cooking, baking, etc.) do not result in classification of the processed agricultural product as synthetic.

5. Resources

OCal Program Handbook

OCal 3012 Material Review. Describes the criteria and process registered certifying agents must follow when approving substances for use in OCal production.

OCal 5033-1 Decision Tree for Classification of Materials. Describes the procedure used to classify input materials for OCal cannabis production as nonsynthetic (natural) or synthetic.

OCal 5034 Materials for Use in OCal Cannabis Production. Catalogues and describes resources that help to determine whether an input material is allowed for use in OCal production.

OCal 5034-1 List of Materials for OCal Cannabis Production. An illustrative list of allowed nonsynthetic (natural) and synthetic materials for OCal cannabis production.

OCal 5034-2 List of Materials Prohibited for Use in OCal Cannabis Production. An illustrative list of synthetic materials prohibited for use in OCal cannabis production.

6. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

7 CFR § 205.601. Synthetic Substances Allowed for Use in Organic Crop Production.

OCal 5033 Classification of Unique Materials, April 23, 2021

7 CFR § 205.602. Nonsynthetic Substances Prohibited for Use in Organic Crop Production.

National Organic Standards Board - Background

April 29, 2011 NOSB recommendation on the classification of materials.

May 24, 2010 NOSB recommendation on the classification of materials.

November 5, 2009 NOSB recommendation on the classification of materials.

August 27, 2005 NOSB recommendation on the review of synthetic and non-synthetic substances.

NOP Memorandum to the National Organic Standards Board, Request for Clarification of "Other Ingredients" in Processed Organic Products, (https://www.ams.usda.gov/sites/default/files/media/NOSB%20Memo%20Request%20for%20Clarification%20of%20Other%20Ingredients.pdf), November 23, 2011.

Decision Tree for Classification of Materials

1. Purpose

This instruction provides a method for classifying input materials for OCal cannabis production as nonsynthetic (natural) or synthetic under the National Organic Program (NOP) regulations' National List of Allowed and Prohibited Substances (starting at 7 CFR 205.600, National List). Sections 205.601 and 205.602 are cited in the OCal regulations at 3 CCR § 10105.

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

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

3. Procedure

Start with a substance and ask yourself the following questions.

Question 1. Is the substance manufactured, produced, or extracted from a natural source?

Answer = Yes Manufactured or Produced ***Go to question 2b***	Answer = Yes Extracted ***Go to question 2***	Answer = No The substance is SYNTHETIC **Stop here**

Question 2. At the end of the extraction process, does the substance meet all of the following criteria?

- The material has not been transformed into a different substance via chemical change;
- The material has not been altered into a form that does not occur in nature; and

Any synthetic materials used to separate, isolate, or extract the substance have been removed from the final substance (e.g., via evaporation, distillation, precipitation, or other means) such that they have no technical or functional effect in the final product.

Answer = Yes ***Go to question 2b***	Answer = No The substance is SYNTHETIC. **Stop here**

Question 2b. Has the substance undergone a chemical change so that it's chemically or structurally different than how it naturally occurs in the source material?

Answer = Yes
Go to question 3

Answer = No.
The substance is
NONSYNTHETIC (NATURAL)
Stop here

Question 3. Is the chemical change created by a naturally occurring biological process, such has composting, fermentation, or enzymatic digestion; or by heating or burning biological matter?

Answer = Yes
The substance is NONSYNTHETIC (NATURAL)
Stop here

Answer = No
The substance is SYNTHETIC
Stop here

4. Classification Examples of Agricultural Inputs

Ash (burned wood)
Nonsynthetic ◦ Substance is created by burning biological matter.

Calcium carbonate (limestone)
Nonsynthetic ◦ Substance is produced from a natural source (mined mineral) and does not undergo chemical change.

Calcium oxide (quicklime)
Synthetic ◦ Substance is produced from a natural source (mined mineral), but undergoes chemical change caused by heating the mineral.

Citric acid
Nonsynthetic ◦ Substance is created from a naturally occurring biological process (microbial fermentation of carbohydrate substances).

Gibberellic acid
Nonsynthetic ◦ Substance is extracted from a natural source without further chemical change.

Liquid fish products – pH adjusted with phosphoric acid
Synthetic ◦ Substance is derived from a natural source but is treated with synthetic acids for pH adjustment.

Molasses
Nonsynthetic ◦ Substance is derived from a natural source and chemical change is due to heating or naturally occurring biological processes.

Newspaper
Synthetic ◦ Substance is manufactured via a chemical process.

Raw manure
Nonsynthetic ◦ Substance is from a natural source and used without further processing

Rosemary oil
Nonsynthetic ◦ Substance is extracted from a natural source

5. More Classification Resources

OCal Program Handbook

OCal 3012 Material Review. *The criteria and process registered certifying agents must follow when approving substances for use in OCal production.*

OCal 5033 Classification of Unique Materials. *Clarifies how materials that are the result of naturally occurring biological processes, separation and extraction, and burning and combustion are classified.*

OCal 5034 Classification of Materials. *Catalogues and describes resources that help to determine whether an input material is allowed for use in OCal production.*

OCal 5034-1 List of Materials for OCal Cannabis Production. *An illustrative list of allowed nonsynthetic (natural) and synthetic materials for OCal cannabis production.*

OCal 5034-2 List of Materials Prohibited for Use in OCal Cannabis Production. *An illustrative list of synthetic materials prohibited for use in OCal cannabis production.*

6. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

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.

National Organic Standards Board - Background

April 29, 2011 NOSB recommendation on the classification of materials.

May 24, 2010 NOSB recommendation on the classification of materials.

November 5, 2009 NOSB recommendation on the classification of materials.

OCal 5033-1 Decision Tree for Classification of Materials, April 23, 2021

August 27, 2005 NOSB recommendation on the synthetic and non-synthetic substances.

NOP Memorandum to the National Organic Standards Board, Request for Clarification of “Other Ingredients” in Processed Organic Products (https://www.ams.usda.gov/sites/default/files/media/NOSB%20Memo%20Request%20for%20Cl arification%20of%20Other%20Ingredients.pdf), November 23, 2011;

Materials for OCal Cannabis Production

1. Purpose

This instruction is intended to assist OCal producers and certifying agents with complying with the OCal regulations by cataloguing and describing resources that help to determine whether an input material is allowed for use in OCal production.

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

3 CCR § 10201. OCal system plan.

3 CCR § 10203. Crop nutrient practice standard.

3 CCR § 10206. Crop pest, weed, and disease management practice standard.

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

3. Background

3.1. The organic industry typically uses the words “material” and “substance” interchangeably. Therefore, “substance” and “material” are synonymous and used interchangeably throughout this document.

3.2. Sections § 205.601 and § 205.602 of The National List of Allowed and Prohibited Substances (National List) are incorporated into the OCal regulations under 3 CCR § 10105.

3.3. The National List contains an itemization of each synthetic substance that is permitted and each nonsynthetic (natural) substance that is prohibited for use in organic production and subsequently OCal production:

a. Synthetic materials are prohibited unless allowed and listed in 7 CFR § 205.601.

b. Nonsynthetic (natural) materials are allowed unless prohibited and listed in 7 CFR § 205.602.

4. Policy

4.1. General Policy for Materials

Agricultural input materials are allowed for use on a case-by-case basis by the certifying agent.

All input materials used by certified OCal operations must comply with the OCal regulations.

A list of inputs used must be included on a producer's OCal system plan (OSP). Registered certifying agents must evaluate this list to determine compliance with OCal regulations and communicate acceptance of the materials to the operation prior to use.

All ingredients within a formulated input material must be evaluated by the certifying agent and determined compliant with the OCal regulations prior to use.

National List annotations and OCal regulations § 10203 and § 10206 specify the source, identity, restrictions and use(s) for which a specific material is permitted. These annotations and restrictions must be followed to be in compliance with the OCal regulations. Specific restrictions are summarized in 4.2 and 4.3, below.

4.2. Plant and Animal Materials for Soil Fertility and Crop Nutrient Management

According to the OCal regulations § 10203(c), the cultivator must manage plant and animal materials to maintain or improve soil organic matter content in a manner that does not contribute to contamination of cannabis, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.

4.3. Pest Control Materials

According to the OCal regulations § 10203(e), biological and botanical pesticides, and pesticides containing materials in § 205.601 of the National List, are permitted for use in OCal cannabis production, provided that the use of cultural, physical, and mechanical management practices for pest, weed, and disease control proves insufficient to prevent or control the target pest.

5. Procedure

5.1. Resources for Determining the Acceptability of an Agricultural Input

a. The National List, 7 CFR § 205.601 and § 205.602

b. OCal 3012 Material Review. The criteria and process registered certifying agents must follow when approving substances for use in OCal production.

c. OCal 5033 Classification of Unique Materials. Clarifies how materials that are the result of naturally occurring biological processes, separation and extraction, and burning and combustion are classified.

d. OCal 5033-1 Decision Tree for Classification of Materials. Describes the procedure used to classify input materials for OCal cannabis production as nonsynthetic (natural) or synthetic.

e. OCal 5034-1 List of Materials for OCal Cannabis Production. An illustrative list of allowed nonsynthetic (natural) and synthetic materials for OCal cannabis production.

f. OCal 5034-2 Appendix of Prohibited Materials for OCal Cannabis Production. An illustrative list of synthetic materials prohibited for use in OCal cannabis production.

Producers should always check with their certifying agents regarding the status of any material prior to its usage.

5.2. Information Regarding Nonsynthetic (Natural) Materials

Allowed nonsynthetic (natural) materials for OCal cannabis production are identified as nonsynthetic (natural) materials in OCal 5034-1, Materials for Use in OCal Cannabis Production. The use of the material must comply with any restrictions noted.

Prohibited nonsynthetic (natural) materials, with the exception of any annotations provided, are included on the National List at § 205.602.

Prohibited nonsynthetic (natural) materials are included in OCal 5034-2, List of Materials Prohibited for Use in OCal Cannabis Production.

5.3. Information Regarding Synthetic Materials

Allowed synthetic materials are included on the National List at § 205.601 and must be used in accordance with any annotations provided.

Allowed synthetic materials are identified as synthetic in OCal 5034-1, Materials for Use in

OCal Cannabis Production.

Prohibited synthetic materials (those rejected by the National Organic Standards Board for inclusion on the National List as allowed) are included in OCal 5034-2, List of Materials Prohibited for Use in OCal Cannabis Production.

5.4. Materials Not Included on the National List or in OCal Guidance

Producers should check with their certifying agents to determine if a prospective input material not addressed by the National List or OCal guidance may be allowed for use in OCal production as a nonsynthetic (natural) input material.

6. References

National Organic Program Regulations, Title 7 Code of Federal Regulations (7 CFR part 205)

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.

List of Materials for Use in OCal Cannabis Production

This instruction is intended to assist certified operations and certifying agents with choosing materials for use in OCal nonmanufactured cannabis and by listing materials that are consistent with the National List of Allowed and Prohibited Substances, 7 CFR § 205.600, § 205.601, and § 205.602.

This list is not exhaustive; nonsynthetic (natural) materials not included on the list may meet the requirements for use in OCal cultivation and distribution. Cultivators and distributors should always check with their certifying agents regarding the use of any material prior to use.

Find more classification information in OCal 5033 Classification of Unique Materials, OCal 5033-1 Decision Tree for Classification of Materials, OCal 5034 Materials for OCal Cannabis Production, and OCal 5034-2 List of Materials Prohibited for Use in OCal Cannabis Production.

Acetic Acid
Nonsynthetic
Made by oxidative or anaerobic fermentation. Solutions that contain less than 8% acetic acid are vinegar. See also, Vinegar.
Reference: 3 CCR 10105

Agar
Nonsynthetic
Also called “agar-agar.” See also, Aquatic Plant Products.
Reference: 3 CCR 10105

Agricultural Substances
Nonsynthetic
Agricultural substances are permitted unless specifically prohibited at 7 CFR 205.602. This includes, but is not limited to, agricultural products listed at 7 CFR 205.606 of the National List. Agricultural substances used in organic crop production are not required to be certified organic.
Reference: 3 CCR 10105

Alcohol
Nonsynthetic
Ethanol made by fermentation is permitted without restriction. For *Synthetic* alcohol, see Ethanol or Isopropanol.
Reference: 3 CCR 10105

Alfalfa Meal or Pellets
Nonsynthetic
Pelletization process must not involve prohibited materials.
Reference: 3 CCR 10203(c)(3)

Algae
Nonsynthetic
See Aquatic Plant Products.

Almond Hull Trash
Nonsynthetic
See Plants.

Aloe Extract
Nonsynthetic
See Plant Extracts.

Amino Acids
Nonsynthetic
Natural amino acids derived from plants, animals, and microorganisms that have not been genetically modified are permitted. Amino acids that have been chemically modified from their source are prohibited.
Reference: 3 CCR 10105

Ammonium Carbonate
Synthetic
Permitted only for use as bait in insect traps. No direct contact with crop or soil.
Reference: 7 CFR 205.601(e)

Animal By-Products and Materials
Nonsynthetic
Includes parts of animals and animal byproducts. May not be used in a manner that contaminates crop, water or soil with pesticide residues, heavy metals or pathogens.
Reference: 3 CCR 10105 & 10203(b)

Aquatic Plant Products
Nonsynthetic or *Synthetic*

Nonsynthetic
Natural aquatic plants and plant products, including plant products extracted with *Nonsynthetic* materials, are allowed.

Synthetic
Synthetically extracted aquatic plant products are permitted as plant or soil amendments. Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount used is limited to that amount necessary for extraction. May not contain *Synthetic* preservatives or other substances not provided for at 7 CFR 205.601(j).
Reference: 3 CCR 10105, 10203(c)(3), and 205.601(j)(1); OCal Policy Memo 14-1

Arthropods
Nonsynthetic
See Biological Controls and Predators and Parasites.
Reference: 3 CCR 10206(b)(1) & 10206(d)(2)

Ash
Nonsynthetic
Ash from plant and animal sources is permitted if it has not been treated or combined with prohibited substances. Ash from burning manure is prohibited.
Reference: 3 CCR 10203 (d)(4) & 7 CFR 205.602(a)

Attapulgite Clay
Nonsynthetic
See Clay.

Azadirachta Indica
Nonsynthetic
See Neem and Neem Derivatives.

Bacillus Species
Nonsynthetic
Includes B. amyloliquefaciens, B. cereus, B. polymyza, B. lichenformis, B. sphaericus, B. subtilis, and B. thuringiensis.
Reference: 7 CFR 205.107
Reference: 3 CCR 10105

Bagasse
Nonsynthetic
Leftover plant stalks and fibers from sugar processing. See Food Processing By-Products.
Reference: 3 CCR 10203(c) & 10203(d)(5)

Bark
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Basalt

Nonsynthetic
See Mined Minerals.

Beauveria bassiana
Nonsynthetic
Reference: 3 CCR 10105

Beeswax
Nonsynthetic
Reference: 3 CCR 10105

Bentonite
Nonsynthetic
See Clay.

Biochar
Nonsynthetic
Biochar is biomass that has been carbonized or charred. Sources must be untreated plant or animal material. Pyrolysis process must not use prohibited additives.
Reference: 3 CCR 10203(d)(4)

Biodegradable Biobased Mulch Film
Synthetic
See Mulch.

Biodynamic Preparations
Nonsynthetic
Includes horn manure spray, horn silica, yarrow flowers, chamomile, stinging nettle, oak bark, dandelion, valerian, and horsetail (equisetum) spray. Preparations containing animal manure, including horn manure spray, must comply with manure restrictions at § 10203(c)(1).
Reference: 3 CCR 10105 & 10203(c)(1)

Biological Controls
Nonsynthetic
Includes living organisms and viruses that are not regulated as biopesticides. Genetically modified organisms are prohibited. See also, Predators and Parasites.
Reference: 3 CCR 10206(b)(1) & 10206(d)(2)

Biotite
Nonsynthetic
See Mined Minerals.

Blood Meal
Nonsynthetic
Reference: 3 CCR 10203(c)

Bone Char
Nonsynthetic
Reference: 3 CCR 10203(d)(4)

Bone Meal
Nonsynthetic
Reference: 3 CCR 10203(c)

Borates and Borax
Nonsynthetic
Natural mined sources are permitted. For *Synthetic* boron, see Boron Products.
Reference: 3 CCR 10105, 10106(b)(3), & 10106(d)(2)

Boric Acid
Synthetic
Permitted as an insecticide for structural pest control, no direct contact with organic food or crops.
For micronutrient use, see Boron Products.
Reference: 7 CFR 205.601(e)(3)

Boron
Synthetic
Soluble boron products are permitted as a plant or soil amendment. Soil deficiency must be document by testing. Allowed

soluble boron products include boric acid, hydrated forms of sodium tetraborate, sodium borate derivatives, disodium octaborate, and its hydrated forms, and hyrdrated forms of colemanite. Boron products made from nitrates or chlorides are not allowed. Not to be used as a defoliant, herbicide, or dessicant.
Reference: 7 CFR 205.601(j)(6)

Brewer's Waste
Nonsynthetic
Reference: 3 CCR 10203(c)

Calcium
Nonsynthetic
See Calcium Carbonate, Gypsum, or Calcium Chloride

Calcium Carbonate
Nonsynthetic
Also called "limestone." Naturally mined forms are allowed. May not be sourced from byproduct of food or paper processing.
Reference: 3 CCR 10203(d)(2)

Calcium Chloride
Nonsynthetic
Nonsynthetic sources only (from brine process). Permitted only as a foliar spray to treat a physiological disorder associated with calcium uptake. *Synthetic* sources of calcium chloride are prohibited.
Reference: 7 CFR 205.602(c)

Calcium Hydroxide
Synthetic
See Hydrated Lime.

Calcium Hypochlorite
Synthetic
See Chlorine Materials.

Calcium Lignosulfonate
Synthetic
See Lignin Sulfonate.

Calcium Polysulfide
Synthetic
See Lime Sulfur.

Calcium Sulfate
Nonsynthetic
See Gypsum.

Cannery Wastes and Cannery Waste-Water
Nonsynthetic
Includes peels, stems, and cores, vegetable and fruit waste processed by physical or mechanical means. Plant and animal materials may not be chemically altered by a manufacturing process unless the resulting material is provided for under 7 CFR 205.601, the chemical change is created by a naturally occurring biological process, or the chemical change is created by heating or burning biological matter.
Reference: 3 CCR 10203(d)(5)

Capsaicin
Nonsynthetic
See Plant Extracts.

Cardboard
Synthetic
See Newspapers or Other Recycled Papers.

Carnauba Wax
Nonsynthetic
See Plants.

Castor Oil
Nonsynthetic
See Oils, Plant and Animal

Chalk
Nonsynthetic
See Mined Minerals.

Chelating Agents
Nonsynthetic* or *Synthetic
Natural chelating agents are allowed. Allowed sources of chelating agents include, but are not limited to, *Nonsynthetic* amino acids, citric acid (to form citrate in solution), tartaric acid made from grape wine, and gluconic acid.

Synthetic chelating agents are only permitted if included on the National List for that purpose.
Reference: 3 CCR 10105 & 7 CFR 205.601(j)(4)

Chitin
Nonsynthetic
Must be from a natural source, such as sea animals or fungi.
Reference: 3 CCR 10105

Chlorine Dioxide
Synthetic
See Chlorine Materials.

Chlorine Materials
Synthetic
Permitted as an algicide, disinfectant, and sanitizer, including irrigation system cleaning systems.

Allowed chlorine materials include calcium hypochlorite, chlorine dioxide, and sodium hypochlorite. Allowance also includes electrolyzed water (hypochlorous acid). Use must comply with California Code of Regulations, title 22, § 64533.5 and Safe Drinking Water Act (collectively, SDWA) levels of 4 mg/L (4ppm) expressed as chlorine, or 0.8 mg/L (0.8 ppm) expressed as chlorine dioxide.

Residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the SDWA.

Residual Chlorine levels in the water in direct crop contact (when used pre-harvest) or as water from clearing irrigation systems applied to soil should not exceed the maximum residual disinfectant limit under the SDWA. Chlorine products may be used up to maximum labeled rates for disinfecting and sanitizing equipment or tools.
Reference: 7 CFR 205.601(a)(2) & OCal Guidance Document 5026.

Citric Acid
Nonsynthetic or *Synthetic*
Natural citric acid produced from microbial fermentation of carbohydrate substances (e.g., sugar) is permitted. Production process may not use genetically modified microorganisms.
Synthetic forms of citric acid are prohibited except as specified at 7 CFR 205.601.
Reference: 3 CCR 10105 & 7 CFR 205.601(j)(7)

Clay
Nonsynthetic
Includes, but is not limited to, attapulgite, bentonite, montmorillonite, kaolin, and fuller's earth. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Cobalt
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.

Allowed forms include cobalt oxide (CoO), cobalt sulfate ($CoSO_4$), cobalt carbonate ($CoCO_3$), and cobalt silicates. Cobalt materials made from nitrates or chlorides are not allowed. Reference: 3 CCR 10203(d)(2)

Cocoa Bean Hulls
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Coconut Fiber
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Coffee Grounds
Nonsynthetic
Reference: 3 CCR 10105 & 10203(c)(3)

Compost
Nonsynthetic
Composted plant materials: Compost that contains no animal materials as feedstock may be used without restriction provided that it contains no prohibited or restricted-use plant materials. Must be made from allowed compost feedstocks.

In-vessel or static aerated pile:
Includes plant and animal materials composted through a process that establishes an initial C:N ratio of between 25:1 and 40:1 and maintains a temperature of between 131°F and 170°F for 3 days using an in-vessel or static aerated pile system. Must be made from allowed compost feedstocks.

Windrows:
Includes plant and animal materials composted through a process that establishes an initial C:N ratio of between 25:1 and 40:1 and maintains a temperature of between 131°F and 170°F for 15 days, during which period the composting materials must be turned a minimum of five times. Must be made from allowed compost feedstocks.

Alternative Composting Methods:
Compost is acceptable if: (i) made from only allowed feedstock materials; (ii) the compost undergoes an increase in temperature to at least 131ºF (55ºC) and remains there for a minimum of 3 days; and (iii) the compost pile is mixed or managed to ensure that all of the feedstock heats to the minimum temperature for the minimum time.

Animal Materials:
Animal materials include, but are not limited to, manure, slaughter renderings, tankage, and blood meal.
Reference: 3 CCR 10203(c)(2) & OCal 5021

Compost Inoculants
Nonsynthetic
May not be cultured on sewage sludge. *Synthetic* growth media not approved for use as plant or soil amendments at 7 CFR 205.601 must not be present in the formulated product.
Reference: 3 CCR 10105

Compost Tea
Nonsynthetic
Compost tea made from compost not meeting the requirements of § 10203(c) or OCal 5021 is subject to restrictions of § 10203(c)(1) for raw animal manure.
Reference: 3 CCR 10203(c) & OCal 5021

Copper, Fixed
Synthetic
For plant disease control, copper-based material must be used in a manner that minimizes accumulation in the soil and shall not be used as herbicides.

Copper products that are exempt from tolerance by the EPA [40 CFR 180.1021(b)(1)] are permitted. Allowed copper substances include Bordeaux mixture, basic copper carbonate (malachite), copper-ethylenediamine complex, copper hydroxide, copper-lime mixtures, copper linoleate, copper oleate, copper oxychloride, copper octanoate, copper sulfate basic, copper sulfate pentahydrate, cupric oxide, and cuprous oxide.

For other uses, see Copper Products and Copper Sulfate.
Reference: 7 CFR 205.601(i)

Copper Products
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.

Allowed forms include copper oxide (CuO), copper sulfate ($CuSO_4$), copper carbonates and copper silicates. Those made from nitrates or chlorides are not allowed.

For other uses, see Copper, Fixed or Copper Sulfate.
Reference: 7 CFR 205.601(j)

Copper Sulfate
Synthetic
For micronutrient use, see Copper Products.

For plant disease control, substance must be used in a manner that minimizes accumulation of copper in the soil.

Use in Aquatic Rice Systems:
For use as tadpole shrimp control in aquatic rice production, use is limited to one application per field during any 24-month period. Application rates are limited to levels which do not increase baseline soil test values for copper over a timeframe agreed upon by the producer and accredited certifying agent.

For use as an algicide in aquatic rice systems and for tadpole shrimp control in aquatic rice systems; use is not to exceed one application per field during any 24-month period. Application rates are limited to those which do not increase baseline soil test values for copper over a time frame agreed upon by the producer and accredited certifying agent.
Reference: 7 CFR 205.601(a)(3), 205.601(e)(4) & 205.601(i)

Corn Gluten
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Corn Steep Liquor and Solids
Nonsynthetic
Also called “condensed fermented corn solubles.”
See also, Food Processing By-Products.
Reference: 3 CCR 10203(c)(3)

Cotton Gin Trash
Nonsynthetic
May not be used in a manner that contaminates crop, water, or soil with pesticide residues.
Reference: 3 CCR 10203(c)(3)

Cottonseed Meal
Nonsynthetic
May not be used in a manner that contaminates crop, water, or soil with pesticide residues.
Reference: 3 CCR 10203(c)(3)

Crab Meal
Nonsynthetic
See Shellfish Meal.

Crop Residues
Nonsynthetic
May not be used in a manner that contaminates crop, water or soil with pesticide residues, heavy metals or pathogens.
Reference: 3 CCR 10203(c)(3)

Cytokinins
Nonsynthetic
See Growth Regulators.

Dairy Products
Nonsynthetic
Includes, but is not limited to, dairy cultures, milk, cheese, cream, yogurt, casein, and whey.
Reference: 3 CCR 10105

Diatomaceous Earth
Nonsynthetic
Mined sources, including calcined forms.
Reference: 3 CCR 10203(d)(2)

Dolomite
Nonsynthetic
See Mined Minerals.

Dormant Oils
Synthetic
See Oils, Horticultural.

Eggshell Meal
Nonsynthetic
Reference: 3 CCR 10105

Elemental Sulfur
Synthetic or
Nonsynthetic
See Sulfur.

Enzymes
Nonsynthetic
May be produced by microbial processes or by extraction from plants or other organisms. Must not be from genetically modified organisms.
Reference: 3 CCR 10105

Epsom Salts
Nonsynthetic or *Synthetic*
See Magnesium Sulfate.

Ethanol
Synthetic
Also called “ethyl alcohol.” Permitted as algicide, disinfectants, and sanitizer, including irrigation system cleaning systems. For *Nonsynthetic* ethanol, see Alcohol.
Reference: 7 CFR 205.601(a)(1)

Fatty Acids
Nonsynthetic
Fatty acids produced from plant or animal oils that have been hydrolyzed through heat, pressure, steam, or enzymes only.
Reference: 3 CCR 10105

Feather Meal
Nonsynthetic
Reference: 3 CCR 10105 & 10203(c)

Feldspar
Nonsynthetic
See Mined Minerals.

Fermentation Products
Nonsynthetic
Products made by the biological activity of bacteria, fungi, or other microorganisms.
Reference: 3 CCR 10105

Ferric and Ferrous Compounds
Synthetic
For micronutrient use, see Iron.

Ferric Phosphate
Synthetic
Permitted only as slug or snail bait. Also called “Iron Phosphate” or “Iron (III) Phosphate.” Reference: 7 CFR 205.601(h)

Fish Meal and Powder
Nonsynthetic
May not contain *Synthetic* stabilizers or preservatives unless provided for at 7 CFR 205.601(j).
Reference: 3 CCR 10105 & 10203(c)

Fish Products, Liquid
Synthetic
Permitted as plant or soil amendments. May be pH adjusted with sulfuric, citric, or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.
Reference: 7 CFR 205.601(j)(7)

Food Processing Byproducts
Nonsynthetic
Includes food waste, cannery waste, and pomaces. Plant and animal materials chemically altered by a manufacturing process are not permitted unless resulting material is provided for under 7 CFR 205.601.
Reference: 3 CCR 10203(c)(3) & 10203(d)(5)

Fuller’s Earth
Nonsynthetic
See Clay.

Fulvic Acids
Nonsynthetic
Fulvic acids are the fractions of humates soluble at neutral to acid pH. May be extracted from allowed humates with water or *Nonsynthetic* acids. See also Humates.
Reference: 3 CCR 10203(d)(2)

Fungal Preparations
Nonsynthetic
See Microbial Products.

Garlic and Garlic Oil
Nonsynthetic
Reference: 3 CCR 10105

Gibberellic Acid
Nonsynthetic
Also called “Gibberellin A3.” Acceptable if made from a fermentation process. See also, Growth Regulators.
Reference: 3 CCR 10105

Gluconic Acid
Nonsynthetic
Produced by fermentation by Aspergillus niger. See also, Chelating Agents.
Reference: 3 CCR 10105

Granite Dust
Nonsynthetic
May not be mixed with petroleum products.
Reference: 3 CCR 10203(d)(2)

Green Manure
Nonsynthetic
See Plants.

Greensand
Nonsynthetic
See Mined Minerals.

Growth Regulators
Nonsynthetic
Natural growth regulators include, but are not limited to, gibberellic acid, indole acetic

acid (IAA) and cytokinins. *Synthetic* growth regulators are prohibited unless specifically included on the National List for this purpose.
Reference: 3 CCR 10105 & 7 CFR 205.601(k)

Guano
Nonsynthetic
Includes bat guano and seabird guano. Domesticated fowl excrement is considered manure, not guano. Includes decomposed and dried deposits from wild bats or wild birds. Subject to raw manure restrictions at 3 CCR 10203 unless composted or heat processed. Guano must not be directly treated with pesticides.
Reference: 3 CCR 10203(c)(1)

Gums
Nonsynthetic
Natural gums are allowed. Includes, but is not limited to, arabic gum; carob bean gum; guar gum; and locust bean gum.
Reference: 3 CCR 10105

Gypsum
Nonsynthetic
Only mined forms are acceptable. May not be sourced from recycled drywall. Also called “Calcium Sulfate.”
Reference: 3 CCR 10203(d)

Homeopathic Preparations
Nonsynthetic
Natural materials are allowed, unless included at 7 CFR 205.602. Any *Synthetic* materials used must be included at 7 CFR 205.601 of the National List and used in compliance with any annotations provided.
Reference: 3 CCR 10105

Hoof and Horn Meal
Nonsynthetic
Reference: 3 CCR 10105

Horticultural Oils
Synthetic
See Oils, Horticultural.

Humates
Nonsynthetic
Acceptable if derived from leonardite, lignite, or coal. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Humic Acids
Synthetic or *Nonsynthetic*
May be derived from leonardite, lignite, coal. Naturally occurring deposits, water and alkali extracts only.
Reference: 3 CCR 10203(d)(2) & 7 CFR 205.601(j)(3)

Hydrated Lime
Synthetic
Permitted for plant disease control only. Not permitted as a fertilizer or soil amendment.
Reference: 7 CFR 205.601(i)

Hydrogen Chloride
Synthetic
Gaseous form of hydrochloric acid. Permitted for delinting cotton seed for planting only.
Reference: 7 CFR 205.601(n)

Hydrogen Peroxide
Synthetic
Also called “hydrogen dioxide.” Permitted as an algicide, disinfectants, and sanitizer, including irrigation system cleaning systems. Also permitted for plant disease control.
Reference: 7 CFR 205.601(a)(4) & 205.601(e)

Inert Ingredients
Synthetic

Includes substances categorized as EPA List 4— Inerts of Minimal Concern on EPA list dated August 2004. For passive pheromone dispensers, substances classified as List 3 – Inerts of Unknown Toxicity on EPA list dated August 2004 are also permitted.

Allowed inert ingredients are only permitted in pesticide formulations and may not be used in other types of products.
Reference: 7 CFR 205.601(m) and OCal 5008

Inoculants
Nonsynthetic
Synthetic growth media not provided for on the National List at 7 CFR 205.601 must not be present in the final product. See Microbial Products.
Reference: 3 CCR 10105

Insect Extracts
Nonsynthetic
Ground insects diluted with water (e.g., bug juice).
Reference: 3 CCR 10206(b)(3)

Iron
Synthetic
Permitted as a plant or soil amendment. Not to be used as a defoliant, herbicide, or dessicant. Soil deficiency must be documented by testing.

Allowed forms include iron sulfates ($FeSO_4$ or $Fe_2(SO_4)_3$), iron oxides (FeO, Fe_2O_3, or Fe_2O_3), iron carbonate ($FeCO_3$), and iron silicate. Those made from nitrates or chlorides are not allowed.
Reference: 7 CFR 205.601(j)(6)

Iron Phosphate
Synthetic
See Ferric Phosphate.

Isopropanol
Synthetic
Also called “rubbing alcohol” or “isopropyl alcohol.” Permitted as an algicide, disinfectant, and sanitizer, including irrigation system cleaning systems.
Reference: 7 CFR 205.601(a)(1)

Kainit
See Mined Minerals.

Kaolin Clay
See Clay.

Kelp and Kelp Meal
Nonsynthetic
See also, Aquatic Plant Products.
Reference: 3 CCR 10203(c)(3)

Kieserite
Nonsynthetic
A mineral found in marine evaporites, $MgSO_4 \cdot H_2O$. See also Magnesium Sulfate and Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Lactic Acid
Nonsynthetic
Produced through fermentation by Lactobacillus spp.
Reference: 3 CCR 10105

Lactose
Nonsynthetic
Precipitated from whey protein using ethanol. If *Synthetic* ethanol is used, it must be removed from the final product.
Reference: 3 CCR 10105

Langbeinite
See Mined Minerals.

Leaf Mold
Nonsynthetic
Reference: 3 CCR 10105

Lecithin
Nonsynthetic
See also, Agricultural Substances.
Reference: 3 CCR 10105

Leonardite
See Humates.

Lignin Sulfonate
Synthetic
Also called “lignosulfonate.” Includes ammonium lignosulfonate, calcium lignosulfonate, magnesium lignosulfonate, and sodium lignosulfonate.

Permitted as a chelating agent, dust suppressant, and as a floating agent in postharvest handling.
Reference: 7 CFR 205.601(j) & 205.601(l)

Lignite
See Humates.

Lime Sulfur
Synthetic
Allowed as an insecticide (including acaricide or mite control) and for plant disease control. Includes calcium polysulfide.
Reference: 7 CFR 205.601(e) & 205.601(i)

Limestone
See Calcium Carbonate.

Limonene
Nonsynthetic
Also called “D-limonene.”
Reference: 3 CCR 10105

Magnesium Carbonate
See Mined Minerals.

Magnesium Chloride
See Mined Minerals.

Magnesium Rock
Nonsynthetic
Reference: 3 CCR 10203(d)(2)

Magnesium Sulfate
Synthetic
Includes hydrated forms. Allowed with a documented soil deficiency. See also, Kieserite.
Reference: 7 CFR 205.601(j)

Magnetite
See Mined Minerals.

Maltodextrin
See Dextrose.

Manganese
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.

Allowed forms include manganese sulfate ($MnSO_4$), manganese oxide (MnO), manganese carbonate ($MnCO_3$), and manganese silicate. Those made from nitrates or chlorides are not allowed.
Reference: 7 CFR 205.601(j)

Manure
Nonsynthetic
Manure includes feces, urine, other excrement, and bedding produced by livestock that has not been composted (7 CFR 205.2). Manure does not include fish feces or insect frass.

Manure from organic or conventional livestock is allowed for organic crop production under the conditions described below.

Raw Manure
Raw animal manure must be composted unless it is: (i) applied to land used for a crop not intended for human consumption; (ii) incorporated into the soil not less than 120 days prior to the harvest of a product whose edible portion has direct contact with the soil surface or soil particles; or (iii) incorporated into the soil not less than 90 days prior to the harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles.

Composted Manure
Composted manure may be used as a supplement to a soil building program without a specific interval between application and harvest. See Compost.

Processed Manure / Heat Processed Manure
Processed manure may be used as a supplement to a soil building program without a specific interval between application and harvest.

Processed manure must be treated so that all portions of the product, without causing combustion, reach a minimum temperature of either 150° F (66° C) for at least one hour or 165° F (74° C), and are dried to a maximum moisture level of 12%; or an equivalent heating and drying process could be used.

Processed manure products must not contain more than $1x10^3$ (1,000) MPN fecal coliform per gram of processed manure sampled and must not contain more than 3 MPN Salmonella per 4 grams of processed manure sampled.
Reference: 3 CCR 10200, 10203(c) & OCal 5006

Manure Tea
Nonsynthetic
Animal manure tea may only be (i) applied to land used for a crop not intended for human consumption; (ii) incorporated into the soil not less than 120 days prior to the harvest of a product whose edible portion has direct contact with the soil surface or soil particles; or (iii) incorporated into the soil not less than 90 days prior to the harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles.
See also, Manure.
Reference: 3 CCR 10203(c) & OCal 5006

Marl
See Mined Minerals.

Meat Byproducts and Waste
Nonsynthetic
Must not be treated with prohibited materials such as *Synthetic* colorings or solvents. See also, Tankage.
Reference: 3 CCR 10105

Mica
See Mined Minerals.

Microbial Biopesticides
Nonsynthetic
Must not contain *Synthetic* growth media unless provided for on the National List at 7 CFR 205.601.
Reference: 3 CCR 10206(d)(2)

Microbial Products
Nonsynthetic

Microorganisms produced using genetic engineering are prohibited.
Reference: 3 CCR 10105

Micronutrients
Synthetic
See Boron, Cobalt, Copper Products, Iron, Manganese, Molybdenum, Selenium, or Zinc.

Milk
Nonsynthetic
Reference: 3 CCR 10105

Mined Minerals
Nonsynthetic
Mined minerals are permitted if not processed or formulated with prohibited materials, such as *Synthetic* dust suppressants, anti-caking agents, or pelleting agents.

Manufacturing process should be reviewed since some substances can be produced using chemical synthesis or are industry by-products.

To be considered *Nonsynthetic*, minerals must not have been heated (calcined) in a way that produces a chemical change in the material.

Mined Minerals of low solubility includes, but is not limited to, basalt, chalk, clays, gypsum, langbeneite, leonardite, limestone, marl, mica, perlite, sand, stone meal, sulfate of potash, vermiculite, and zeolite.

Mined Minerals of high solubility includes calcium chloride and potassium chloride. Mined minerals of high solubility must be used in compliance with the conditions established at 7 CFR 205.602.
Reference: 3 CCR 10203(d)(2) & 10203(d)(3)

Molasses
Nonsynthetic
Both organic and nonorganic molasses are permitted. Nonorganic molasses may not contain *Synthetic* scale inhibitors, aggregation and precipitation agents, or additives to control fluidity that are not provided for at 7 CFR 205.601.
Reference: 3 CCR 10105

Molybdenum
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.

Allowed forms include molybdic oxide (MoO_3) and sodium molybdate (Na_2MoO_4). Those made from nitrates or chlorides are not allowed.
Reference: 7 CFR 205.601(j)

Montmorillonite Clay
See Clay.

Mulch
Nonsynthetic or *Synthetic*
Mulch includes any *Nonsynthetic* material, such as wood chips, leaves, or straw, or any *Synthetic* material included on the National List for such use, such as newspaper or plastic that serves to suppress weed growth, moderate soil temperature, or conserve soil moisture.

Natural Mulch
Natural mulch includes leaves, straw, crop residues, and other fully biodegradeable materials.

Newspaper and Recycled Paper
Newspaper or other recycled paper, without glossy or colored inks, is permitted as mulch.

Plastic Mulch
Petroleum-based plastic mulch, other than polyvinyl chloride (PVC), is permitted. The allowance does not include biodegradable plastic. Plastic mulch must be removed from the field at the end of the growing or harvest season. For crops grown as annuals, removal must occur annually. For perennial crops, plastic mulch must be removed before the plastic decomposes or breaks down to prevent removal.

Muriate of Potash
See Potassium Chloride.

Mushroom Compost and Spent Mushroom Substrate
Nonsynthetic
Must be derived from allowed materials. Materials that contain manure are subject to restrictions at § 10203(c)(1) for raw animal manure unless they are composted before or after mushroom production according to § 10203(c)(2) or OCal 5021. See also, Compost.
Reference: 3 CCR 10105, 10203(c), and OCal 5021

Mycchorhizae
Nonsynthetic
Reference: 3 CCR 10105

Neem and Neem Derivatives
Nonsynthetic
Includes neem cake and neem oil. Azadirachtin, an extract of neem, is also permitted.
Reference: 3 CCR 10105

Nematodes
Nonsynthetic
See Biological Controls.

Newspaper or Other Recycled Paper
Synthetic
Includes newspaper and other recycled paper such as cardboard, without glossy or colored inks. Does not include paper that is not recycled (i.e., virgin paper).
Permitted as mulch or as a compost feedstock.
Reference: 7 CFR 205.601(b) & 205.601(c)

Oils, Horticultural
Synthetic
Narrow range oils are permitted as insecticides and for plant disease control as dormant, suffocating, and summer oils. Horticultural oils do not include benzene, naphthalene, toluene, and xylene.

Narrow range oils are defined under 7 CFR 205.2 as petroleum derivatives, predominately of paraffinic and naphthenic fractions with 50 percent boiling point (10 mm Hg) between 415°F and 440°F.
Reference: 7 CFR 205.601(e) & 205.601(i)

Oils, Plant and Animal
Nonsynthetic
Includes, but is not limited to, anise oil, bergamot oil, canola oil, castor oil, citronella oil, clove oil, corn oil, cottonseed oil, eugenol, fish oil, garlic oil (allium sativum), geraniol, jasmine oil, jojoba oil, lavandin oil, lemongrass oil, linseed oil, mustard oil, neem oil, oil of geranium, orange oil, peppermint oil, mint oil, sesame oil, soybean oil, and thyme oil.
Reference: 3 CCR 10105 and 10203(c)(3)

Oxytetracycline Calcium Complex
Synthetic

See Tetracycline.

Oystershell Lime
Nonsynthetic
Ground shells from oysters. Calcined oyster shell (calcium oxide, quick lime, calcium hydroxide) is considered *Synthetic* and is not permitted as a fertilizer or soil amendment.
Reference: 3 CCR 10105; 7 USC 6508

Ozone Gas
Synthetic
Permitted as an irrigation system cleaner only.
Reference: 7 CFR 205.601(a)

Paper
Synthetic
See Newspaper or Other Recycled Papers.

Peanut Meal
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Peat Moss
Nonsynthetic
Must not contain *Synthetic* wetting agents.
Reference: 3 CCR 10105

Peracetic Acid
Synthetic
For use in disinfecting equipment, seed, and asexually propagated planting material.
Also permitted to control fire blight bacteria.
Reference: 7 CFR 205.601(a) & 205.601(i)

Perlite
Nonsynthetic
See Mined Minerals.

Petroleum Distillates
Synthetic
See Oils, Horticultural.

Pheromones
Synthetic
As insect management.
Reference: 7 CFR 205.601(f)

Phosphate Rock
Nonsynthetic
Must not be fortified or processed with *Synthetic* chemicals. Includes colloidal phosphate rock. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Pine Resins
Nonsynthetic
Reference: 3 CCR 10105

Plant Extracts
Nonsynthetic
Nonsynthetic plant extracts are allowed.
Reference: 3 CCR 10105

Plant Protectants
Nonsynthetic
Includes, but is not limited to, natural materials that protect plants from harsh environmental conditions such as frost and sunburn, or from infection, or the build-up of dirt on leaf surfaces, or injury by a pest. Allowed *Nonsynthetic* plant protection materials include, but are not limited to, diatomaceous earth, kaolin clay, pine oil, pine resin, and yucca.
Reference: 3 CCR 10105

Plants
Nonsynthetic
Includes aquatic or terrestrial plants or parts of plants such as cover crops, green manures, crop wastes, hay, leaves, and straw. Parts of plants used as soil amendments and foliar feeds are permitted.
Reference: 3 CCR 10203(c)(3)

Pomace
Nonsynthetic
Includes skins, pulp, seeds, and stems of grapes, olives, tomatoes, apples, or other fruit.
Reference: 3 CCR 10203(c)(3)

Potassium Bicarbonate
Synthetic
Allowed for plant disease control only.
Reference: 7 CFR 205.601(i)

Potassium Chloride
Nonsynthetic
From mined sources only. Must be applied in a manner that minimizes chloride accumulation in the soil.
Reference: 7 CFR 205.602(e)

Potassium Silicate, Aqueous
Synthetic
Allowed as an insecticide and for plant disease control. The silica used in the manufacture of potassium silicate must be sourced from naturally occurring sand.
Reference: 7 CFR 205.601(e) & 7 CFR 205.601(i)

Potassium Sulfate
Nonsynthetic
Only if from langbeinite or evaporated from natural brine. See also, Mined Minerals.

Synthetic sources of potassium sulfate are prohibited.
Reference: 3 CCR 10203(d)(2)

Potting Soil
Nonsynthetic or *Synthetic*
Must be composed entirely of allowed *Nonsynthetic* materials or *Synthetic* materials from 7 CFR 205.601 permitted as plant and soil amendments. Must not contain *Synthetic* wetting agents.
Reference: 3 CCR 10105 & 7 CFR 205.601

Predators and Parasites
Nonsynthetic
Augmentation or introduction of predators or parasites of a pest species is permitted. See also, Biological Controls.
Reference: 3 CCR 10206(b)(1)

Propolis
Nonsynthetic
Resinous mixture produced by honeybees.
Reference: 3 CCR 10105

Pseudomonas sp.
Nonsynthetic
Includes P. putida, P. fluorescence, P. syrigae, and P. aeruginosa. See also, Microbial Biopesticides.
Reference: 3 CCR 10105

Pumice
Nonsynthetic
Volcanic rock. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Pyrethrum
Nonsynthetic
Pyrethrum is an allowed natural botanical extract; pyrethroids are *Synthetic* and prohibited. *Synthetic* solvents used for extraction of pyrethrum must not be present in the final product. Piperonyl butoxide may not be used as a synergist.
Reference: 3 CCR 10105

Quassia ~~a~~Amara
Nonsynthetic
Reference: 3 CCR 10105, 10206(e)

Rhizobium spp.
Nonsynthetic

Includes symbiotic bacteria that form nodules on the roots of legumes and fix nitrogen. See Inoculants.
Reference: 3 CCR 10105

Rice Hulls
Nonsynthetic
See Plants.

Rotenone
Nonsynthetic
The EPA has not registered for sale any rotenone products in the United States.
Reference: 3 CCR 10105, 10206(e)

Ryania
Nonsynthetic
Reference: 3 CCR 10105, 10206(e)

Sabadilla
Nonsynthetic
Reference: 3 CCR 10105, 10206(e)

Sand
Nonsynthetic
See Mined Minerals.

Saponins
Nonsynthetic
See Plant Extracts.

Sawdust
Nonynthetic
From untreated and unpainted wood only.
See also, Plants.
Reference: 3 CCR 10203(c)(3)

Sea Salt
Nonsynthetic
Reference: 3 CCR 10105 & 10203(d)(3)

Seaweed and Seaweed Products
Nonsynthetic or *Synthetic*
See Aquatic Plant Products.

Seed Preparations
Nonsynthetic
Nonsynthetic materials are allowed for use on seeds before planting, including, but not limited to, microbial products, kelp, yucca, gypsum, plant extracts and various clays.
Reference: 3 CCR 10105

Selenium
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.
Allowed forms include sulfates, carbonates, oxides, or silicates of selenium. Those made from nitrates or chlorides are not allowed.
Reference: 7 CFR 205.601(j)(6)

Shellfish Meal
Nonsynthetic
May not contain prohibited stabilizers or preservatives.
Reference: 3 CCR 10105

Soap
Synthetic
The following soaps are permitted:

Soap-based algicide/demossers, as an algicide, disinfectant, and sanitizer, including irrigation system cleaning systems.

Soap-based herbicides, for use in farmstead maintenance (roadway, ditches, right of ways, building perimeters) and ornamental crops.

Soaps, ammonium. Includes ammonium salts of fatty acids. Only permitted for use as a large animal repellant only, no contact with soil or edible portion of crop.

Insecticidal soaps.
Reference: 7 CFR 205.601(a), 205.601(b), 205.601(d), and 205.601(e)

Soda
Nonsynthetic
Sodium carbonate. Unprocessed mined sources are allowed. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Sodium Bicarbonate
Nonsynthetic
See Mined Minerals.

Sodium Carbonate Peroxyhydrate
Synthetic
Permitted as algicide, disinfectants, and sanitizer, including irrigation system cleaning systems.
Federal law restricts the use of this substance in food crop production to approved food uses identified on the product label.
Reference: 7 CFR 205.601(a)

Sodium Chloride
Nonsynthetic
Table salt. Mined sources and evaporation from natural brines only. Must not contain *Synthetic* anti-caking agents not provided for at 7 CFR 205.601.
Reference: 3 CCR 10105

Sodium Hypochlorite
Synthetic
See Chlorine Materials.

Sodium Silicate
Synthetic
Permitted as a floating agent in postharvest handling of tree fruit and fiber processing.
Reference: 7 CFR 205.601(l)

Sorghum
Nonsynthetic
See Plants.

Soybean Meal
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Sphagnam Moss
Nonsynthetic
Must not contain *Synthetic* wetting agents.
Reference: 3 CCR 10105

Spinosad
Nonsynthetic
Derived from Saccharopolyspora spinosa. See also, Microbial Biopesticides.
Reference: 3 CCR 10105

Sticky Traps and Barriers
Synthetic
Permitted for insect control.
Reference: 7 CFR 205.601(e)

Stone Meal
Nonsynthetic
See Mined Minerals.

Straw
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Sucrose Octanoate Esters
Synthetic
Sucrose octanoate esters (CAS #s—42922–74– 7; 58064–47–4).
Permitted as an insecticide. Must be used in accordance with approved labeling.
Reference: 7 CFR 205.601(e)

Sugar
Nonsynthetic
Reference: 3 CCR 10203(c)(3)

Sulfate of Potash Magnesia
Nonsynthetic
From mined sources only. See also, Mined Minerals.
Reference: 3 CCR 10203(d)(2)

Sulfur
Synthetic or *Nonsynthetic*
Synthetic elemental sulfur is permitted as an insecticide, for plant disease control, and as a plant or soil amendment.
Nonsynthetic sulfur is allowed without restriction for use.
Reference: 7 CFR 205.601(e), 205.601(i) & 205.601(j)

Sulfurous Acid
Synthetic
Sulfurous acid (CAS # 7782–99–2) for on-farm generation of substance utilizing 99% purity elemental sulfur 7 CFR 205.601(j)(2).
Reference: 7 CFR 205.601(j)

Talc
Nonsynthetic
See Mined Minerals.

Tankage
Nonsynthetic
The rendered, dried, and ground by-products that are largely meat and bone from animals that are slaughtered or that have died otherwise. See Meat By-Products and Waste.
Reference: 3 CCR 10105

Trace Minerals
Nonsynthetic or *Synthetic*
See Mined Minerals or a specific micronutrient: Boron, Cobalt, Copper Products, Iron, Manganese, Molybdenum, Selenium, or Zinc.

Trichoderma Species
Nonsynthetic
Includes T. asperellum, T. atroviride, T. fasciculatum, T. gamsii, T. hamatum, T. harzianum, T. koningii, T. reesie, T. virens, and T. viride. See also, Microbial Biopesticides.
Reference: 3 CCR 10105

Vegetable Protein Hydrolysate
Nonsynthetic
Vegetable matter, including soy, that has been hydrolyzed through heat, pressure, steam, or enzymes is allowed. Acid hydrolyzed vegetable protein is prohibited.
Reference: 3 CCR 10105

Vermicompost
Nonsynthetic
Vermicompost that meets the following criteria may be used without restriction: 1) Made only from allowed feedstocks, 2) Aerobic conditions are maintained by regular additions of layers of organic matter, turning, or employing forced air pipes such that moisture is maintained at 70-90%, and 3) The duration of vermicomposting is 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.
Reference: 3 CCR 10203(c) & OCal 5021

Vermiculite
Nonsynthetic
See Mined Minerals.

Vinasse
Nonsynthetic
Nonsynthetic vinasse is permitted. Vinasse is classified as *Nonsynthetic* if it does not contain prohibited additives, such as pH adjustors, sanitizers, ammonium

compounds, antibiotics or chlorine materials and is not fortified with nitrogen.
Reference: 3 CCR 10105; NOSB Formal Recommendation, May 2, 2014.

Vinegar
Nonsynthetic
Produced through the fermentation of ethanol by acetic acid bacteria. See also, Acetic Acid.
Reference: 3 CCR 10105

Viruses
Nonsynthetic
See Biological Controls.

Vitamins B1, C, E
Synthetic
Permitted as plant or soil amendments. Vitamin C is also called "Ascorbic Acid."
Reference: 7 CFR 205.601(j)

Vitamin D3
Synthetic
Also called “Cholecalciferol.” Permitted as a rodenticide.
Reference: 7 CFR 205.601(g)

Water and Wastewater
Nonsynthetic
Water and wastewater is permitted, provided that it is used in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.
Reference: 3 CCR 10105

Wetting Agents
Nonsynthetic
Nonsynthetic wetting agents, including saponins and microbial wetting agents, are allowed.
Reference: 3 CCR 10105

Wheat Middlings
Nonsynthetic
See Plants.

Whey Protein
Nonsynthetic
Reference: 3 CCR 10105

Wood Ash
Nonsynthetic
Wood ash must be produced from untreated and unpainted wood. Wood stove ashes must not be generated from burning of colored paper, plastic, or other prohibited materials. See also, Ash.
Reference: 3 CCR 10203(d)(4)

Wood Chips and Shavings
Nonsynthetic
From untreated and unpainted wood only.
Reference: 3 CCR 10203(c)(3)

Wool
Nonsynthetic
Reference: 3 CCR 10105

Worms and Worm Castings
Nonsynthetic
See Vermicompost.

Yeast
Nonsynthetic
Yeast must not be produced using excluded methods. Includes Saccharomyces cerevisia, yeast extract autolysate, and yeast hydrolysate. See also, Microbial Products.
Reference: 3 CCR 10105

Yucca
Nonsynthetic
See Plant Extracts.

Zeolite
Nonsynthetic
See Mined Minerals.

Zinc
Synthetic
Permitted as a plant or soil amendment. Soil deficiency must be documented by testing. Not to be used as a defoliant, herbicide, or dessicant.
Allowed forms include zinc sulfate ($ZnSO_4$), zinc oxide (ZnO), zinc carbonate ($ZnCO_3$), and zinc silicate. Those made from nitrates or chlorides are not allowed.
Reference: 7 CFR 205.601(j)(6)

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List of Materials Prohibited for Use in OCal Cannabis Production

This list is provided for reference purposes and is not intended to be comprehensive. In addition to the materials identified below, any synthetic material that is not included at 7 CFR § 205.601 of the National List of Allowed and Prohibited Substances (National List) is prohibited for use in OCal cannabis production. The materials listed below are specifically prohibited on the National List at 7 CFR § 205.602, have been reviewed by a Federal agency and determined to be prohibited, or are no longer allowed for use in organic (and therefore OCal) crop production.

Find more classification information in OCal 5033 Classification of Unique Materials, OCal 5033-1 Decision Tree for Classification of Materials, OCal 5034 Materials for OCal Cannabis Production, and OCal 5034-1 List of Materials for Use in OCal Production.

- 1,4-Dimethylnaphthalene
- 3-Decen-2-one
- 6-Benzyladenine
- Acetylated Lanolin Alcohol
- Acrylic Acid Methyl Ester, Polymer with Acrylonitrile and 1,3-Butadiene
- Ammonium Nonanoate, except as provided in 7 CFR § 205.601
- Arsenic
- Ash from Manure Burning
- Avermectin
- Basic Slag, agricultural slag
- Biosolids
- Calcium Carbide
- Calcium Oxide, fertilizer use
- Calcium Sulfate (synthetic form)
- Captan
- Chitosan
- Copper Chromium Arsenate
- Coumarone – indene resin
- Cryolite
- Dextrin
- Ethylene Glycol
- Exhaust Gas (Carbon Monoxide)
- Glycerin Oleate
- Glyphosate
- Humic acid, treated with hydrogen peroxide (oxidized lignite)
- Indole-3-butyric Acid
- Lead Salts
- Leather Meal
- Lime Mud
- Magnesium Dihydrogen Phosphite Monohydrate
- Manganous Oxide, except as provided in 7 CFR 205.601(j)
- Methyl Bromide
- Methyl Laurate
- Monocalcium Phosphate
- Nickel Salts, Synthetic
- Niter
- Pelargonic Acid
- Pentaerythritol Monostearate
- Pentaerythritol Tetrastearate

Piperonyl Butoxide
Propylene glycol monolaurate (PGML)
Polyoxin D Zinc Salt
Potassium Sulfate (synthetic form)
Propane, for underground rodent control
Sewage Sludge
Sodium Chlorate
Sodium Fluoaluminate
Sodium Fluoride
Sodium Lauryl Sulfate (SLS)
Sodium Propionate
Streptomycin
Struvite (Magnesium Ammonium Phosphate)
Strychnine
Sulfuric Acid, except as provided in 7 CFR 205.601(j)
Tall Oil
Tetracycline
Tetrahydrofufuryl Alcohol
Thiram
Tobacco Dust (Nicotine Sulfate)
Triple Phosphate
Urea

Note: Substances classified as EPA List 4, Inerts of Minimal Concern, may be permitted in pesticide products under section 7 CFR 205.601(m). Certified operations should receive approval from their certifying agents before using pesticide products that contain these substances.

Treated Lumber

1. Purpose

This instruction clarifies OCal regulation § 10206(f). It addresses certification eligibility of operations, how to determine contact, use of barriers or buffers, and installations of new or replacement lumber.

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

3 CCR § 10000. Definitions.

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

3 CCR § 10201. OCal system plans.

3 CCR § 10202. Land Requirements

3 CCR § 10206. Crop, pest, weed and disease management practice standard.

3 CCR § 10703. Non-compliance procedures for certified operations.

3. Policy

Treated lumber is lumber that has been treated with arsenate or other prohibited substances or materials (pursuant to 7 CFR starting at § 205.600) to prolong the useable lifespan of the lumber.

A certified operation on which treated lumber is in contact with OCal cannabis or with soil located within the OCal cannabis cultivation site (a location where commercial cannabis is planted, grown, harvested, dried, cured, graded, or trimmed, or a location where any combination of those activities occurs, per CalCannabis regulations, 3 CCR section 8000(j)), or on which treated lumber is used for new or replacement purposes (see examples in section 3.2) is not in compliance with OCal regulations § 10105 and § 10206(f) and is subject to the noncompliance procedures in § 10703 of the OCal regulations. Lumber treated with prohibited substances or materials may have been treated by manufacturers, certified operations, or other parties.

Certifiers must evaluate site-specific conditions during the annual inspection and review any use of treated lumber within the context of an operation's OSP to determine if existing installations of treated lumber are in contact with soil or with cannabis intended to be sold, labeled or represented as OCal.

If soil or cannabis is in contact with treated lumber, contact must be terminated by removing or replacing lumber or taking measures to prevent contact, such as applying a barrier or establishing a buffer zone. If a barrier is subject to degradation, decay, or other processes that result in loss of effectiveness, the operation must replace, repair or reapply the barrier at appropriate intervals.

Management practices and physical barriers established to prevent contact must be described in the operation's OSP and certifiers must assess barriers and buffers during the annual inspection to ensure they are sufficiently sized, designed, and maintained to effectively prevent unintended contact.

3.1. Treated Lumber and the Three-year Transition

OCal regulations § 10202 require that land used for production of OCal cannabis or cannabis products has had no prohibited substances applied to it for a period of three years immediately preceding harvest of cannabis intended to be sold, labeled or represented as OCal.

Treated lumber is classified by the US EPA as a "treated article". A treated article is an article treated with a pesticide that protects the article itself, i.e., the lumber (title 40 of the Code of Federal Regulations § 152.25(a)). As pesticides in or on treated articles are only intended to protect the article itself, the use of treated lumber on a parcel does not constitute application of prohibited substances to land and therefore does not necessitate a three-year transition. This applies also to a parcel acquired (leased, purchased, rented, etc.) by an OCal operation with existing treated lumber, as long as the lumber does not come into contact with OCal cannabis or soil.

3.2. Contact Determination

Contact with soil or OCal cannabis means direct contact with any part of the plant under OCal production, including plant roots. Certifiers must determine if existing treated lumber comes into contact with soil or cannabis intended to be sold, labeled, or represented as OCal.

Examples of lumber in contact with soil or OCal cannabis include:

- planter boxes, raised beds, or other planting containers where lumber contacts soil;
- trellises or stakes that support OCal cannabis;
- trellis posts, including end posts and posts within a row (line posts);
- stakes or posts placed in soil to indicate rows or identify boundaries, next to OCal cannabis;
- baseboards in high tunnels in contact with soil, with OCal cannabis grown in soil.

Examples of lumber that does not contact soil or OCal cannabis include:

- tables in greenhouses, where lumber has no contact with soil;
- baseboards in permanent greenhouses, where all plants are grown in aboveground containers and do not contact lumber;
- lumber used to support structures that are isolated from OCal production areas, including employee/residential housing, equipment storage areas, and sheds; and
- lumber covered with some other allowed material (see “Barriers” below).

3.3. New Installations and Replacements With Lumber Treated With Prohibited Substances

Lumber treated with prohibited substances may be used for new installations or for replacement purposes if there is no contact with soil or cannabis intended to be sold, labeled, or represented as OCal. This determination must be made by the certifying agent based on item 3.2 above.

3.4. Use of Barriers to Prevent Contact

Barriers may include electric fencing, barbed wire, metal flashing, and untreated lumber.

4. References

State and Federal Regulations

California Code of Regulations, title 4 § 16000 (Department of Cannabis Control). Definitions.

Code of Federal Regulations, title 7 § 205.601. Synthetic Substances Allowed For Use in Organic Crop Production.

Code of Federal Regulations, title 7 § 205.602. Nonsynthetic Substances Prohibited For Use in Organic Crop Production.

Code of Federal Regulations, title 40 § 152.25. Exemptions For Pesticides of a Character Not Requiring FIFRA Regulation.

United States Code, title 7 § 136. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

United States Code, title 7 § 136. Definitions. “Pesticide”

Other References

October 1995 National Organic Standards Board (NOSB) Technical Advisory Panel Review on Pressure Treated Lumber.

Chromated Copper Arsenate. US Environmental Protection Agency (US EPA), July 2011. Web. 30 Sept. 2015.

Read, Deborah. “Report on Copper, Chromium and Arsenic (CCA) Treated Timber.” New Zealand Environmental Risk Management Authority, April 2003.

Rinehart, Lee. “Pressure-Treated Wood: Organic and Natural Alternatives.” National Center for Appropriate Technology, Sept. 2011.