

Organic Certification of Research Sites and Facilities

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A core principle of organic agriculture is the adoption of best sustainable and ecologically sound practices and inputs, as they become available. Organic agricultural research is used to assess and develop emerging practices and inputs. It is a dynamic field with new information available regularly. Organic producers, handlers, and consumers all receive benefits from research on new methods, practices, varieties, and breeds.

In recent years, federal, state, university, and private funds have become available for organic agricultural research. Some of the grant funds require that research be conducted on certified organic or transitional land. For example, the Integrated Organic Program of USDA currently requires that all research be done on land that is either certified or transitioning to organic, thus the ability of researchers to get all or a portion of their research station certified has a direct bearing on their eligibility for funding.

Certification Overview

Under the National Organic Program (NOP) Final Rule, “organic production” is defined as “a production system that is managed to respond to site-specific conditions by integrating cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.”

All organic farmers and handlers who sell over \$5,000/year of organic products must be certified. Retailers do not have to be certified. Handlers who use the word “organic” only on the ingredient panel do not have to be certified. Handlers, such as warehouses, that do not re-package organic products do not have to be certified.

Organic certification is conducted by accredited certifying agents. There are presently 95 certifying agents accredited by the USDA to implement the National Organic Program regulation. Accreditation is issued for crop, wild crop, livestock, and/or handler certification. A list of accredited certifying agents is at www.ams.usda.gov/nop

The organic certification process begins with the 36-month transition of the land, when no prohibited materials are applied. Records need to be maintained to document the transition. The operator chooses an accredited certification agency and completes an organic system plan (OSP), including field maps and field histories for all fields to be certified. The OSP should describe the proactive strategies used to prevent problems, and include a list or description of all planned inputs and practices. The certification agency assigns an inspector, who evaluates all fields, borders, buildings, equipment, and records. The inspector submits a report to the certifier, who makes the certification decision.

In order to maintain certification, an operator must follow the operation’s OSP; comply with NOP organic production and handling standards; use only approved substances; pay annual certification fees; undergo an annual on-site inspection; and address all issues of concern identified by the certification agency. As with any certified operation, it is very important for

organic researchers to stay in contact with their certifier, especially as new practices or inputs are being considered.

Benefits and Challenges

The benefits and challenges of organic certification for research stations include:

- Access to Funds – Many grants now require that organic research be conducted on certified organic or transitional land.
- Credibility of Results – Conducting “systems” research under certified organic conditions establishes credibility with organic farmers, researchers, and funders.
- Marketability of Products as Certified Organic – Selling the crops on the organic market opens up the possibility for real-life economic analysis of the research project.
- Ability to Educate Others (faculty, staff, students, farmers) on Standards and Certification Process – There is no substitute for experience to learn, and then teach, organic production methods and requirements.
- Marketability of the Program – Researchers, students, farmers, funders, and others interested in organic agriculture are drawn to certified organic research programs.
- Implementation of a Quality System – Certification mandates documentation and discipline, which, while challenging, has numerous long-term benefits for the institution.
- External Evaluation – The organic inspector and the certification review process bring an additional level of external review.
- Internal Coordination/communication/teamwork – Certification of the research station requires teamwork on issues such as equipment cleaning, input application, crop segregation, planning and mapping, and the sequencing of events.
- Multi-disciplinary Research Opportunities – Maintaining a certified organic research station provides the foundation for multi-disciplinary research. For example, soil scientists often work with hydrologists, entomologists, plant breeders, and agronomists; organic products from the research station can be analyzed by food scientists or used for feed for organic animal science research; or, economists can study the profitability of the organic production system.

Research Variances

While most organic research can be undertaken in full compliance with NOP requirements, NOP section § 205.290(a)(3) allows the Administrator of USDA’s Agricultural Marketing Service (AMS) to establish temporary variances from certain regulatory provisions.

Temporary variances may be established for:

- 1) Natural disasters declared by the Secretary of Agriculture;
- 2) Damage caused by drought, wind, flood, hail, tornado, earthquake, excessive moisture, fire, or other business interruption; and
- 3) Practices used for the purpose of conducting research or trials of techniques, varieties, or ingredients used in organic production or handling.

In order to receive a temporary research variance, a researcher must make a request to the certifying agent. The certifying agent reviews the request and may recommend to the AMS that the temporary variance be granted. The AMS Administrator approves the variance and sets a period of time, under which the variance is allowed. The Administrator may also grant an extension.

NOP §205.290(e) states that, “Temporary variances will not be granted for any practice, material, or procedure prohibited under §205.105.” This means that the following cannot be used under a temporary variance:

- Synthetic substances that do not appear on the National List of Allowed and Prohibited Substances (§205.601, §205.603, or §205.605);
- Prohibited natural substances that appear on §205.602 or §205.604;
- Excluded methods;
- Ionizing radiation; or
- Sewage sludge.

“Excluded methods,” which may not be used in organic production or handling and are not eligible for temporary variances, are defined under the NOP as, “a variety of methods used to genetically modify organisms or influence their growth and development by means that are not possible under natural conditions or processes and are not considered compatible with organic production. Such methods include cell fusion, microencapsulation and macroencapsulation, and recombinant DNA technology (including gene deletion, gene doubling, introducing a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology). Such methods do not include the use of traditional breeding, conjugation, fermentation, hybridization, in vitro fertilization, or tissue culture.”

The following NOP sections are eligible for consideration, when research and other temporary variances are requested:

- Soil fertility and crop nutrient practices - §205.203;
- Seed and planting stock practices - §205.204;
- Crop rotation systems - §205.205;
- Pest, weed, and disease management - §205.206;
- Wild crop harvesting standard - §205.207;
- Origin of livestock, feed, health care, and living conditions - §205.236-239;
- Handling (processing) requirements - §205.270;
- Facility pest management - §205.271; and
- Prevention of commingling and contact w/ prohibited substances - §205.272.

In order to be certified with a temporary variance, certain sections of the NOP regulation remain mandatory. These include:

- Recordkeeping Requirements - §205.103;
- Maintain or Improve the Natural Resources of the Operation - §205.200;
- Organic System Plan - §205.201;
- No Use of Prohibited Substances - §205.202(a);
- No Application of a Prohibited Substance 3 Years Prior to Harvest - §205.202(b);
- Distinct, Defined Boundaries and Buffer Zones - §205.202(c);
- Labeling Requirements - §205.300-311; and
- Certification Procedures - §205.400-406.

Examples of Potential Variances

Examples of possible research variances might include the following:

- 1) While §205.204 requires the use of organic seed, when commercially available, a researcher could request a variance in order to use untreated, non-organic foundation seed for seed breeding research, without first attempting to source organic seed in equivalent

- varieties. (Fungicide treatments and genetically engineered varieties cannot be used, since their use is prohibited under §205.105.)
- 2) Section 205.203(c)(2) establishes certain requirements for the production of compost. A researcher could request a variance to produce compost on a certified organic research station through other methods or parameters than those specified in §205.203(c)(2).
 - 3) §205.205 requires the use of soil-building crop rotations. For the purposes of comparative research, a variance could be requested to conduct soil-depleting or repetitive cropping systems as part of a certified organic research project.
 - 4) §205.236(b)(1) prohibits organic livestock from being moved to a non-organic operation, re-introducing them to the organic operation, and then selling or representing them as organic. A variance could be requested under which animals could be rotated between organic and non-organic portions of a research station for the purposes of conducting health tests, gathering data, or assessing behavior.
 - 5) A food scientist who wants to test the efficacy and safety of pesticides used in food processing facilities might request a variance from §205.271, which requires removal of pest habitat and food sources, in order to attract enough pests to gather adequate data, while allowing the research facility to be certified organic.

Resources

For further information, visit the NOP website: www.ams.usda.gov/nop

Other resources include:

www.mosesorganic.org

1-888-551-4769

www.attra.org

1-800-346-9140

www.ers.usda.gov/briefing/Organic/

www.ofrf.org

www.omri.org

www.ota.com

www.newfarm.org

www.organiccenter.org

www.howtogoorganic.com

www.fao.org/organicag/

www.organicaginfo.org

Questions and Answers

Question 1) Some scientists evaluating pest controls and yield losses feel it would be desirable to include a comparison treatment with prohibited materials in order to assess potential yields of organic crops vs. crops produced using non-organic methods. While these scientists agree that products from such studies could not be marketed as organic, they would like to relax rules regarding buffer zones or the requirement for an additional three-year transition after such applications. Is this possible?

Answer 1) The rule for the three-year transition period for land following any prohibited material applications is contained in §205.202 and cannot be ignored. Under current rule, research trials such as these on certified organic farms would cause the land/plots in question to lose organic certification. However, distinct plots for comparative research could be used to allow the farm/site to maintain its certified organic status and researchers to access organic research grants. Distinct plots are designated areas of non-certified plots that are managed organically other than the prohibited material applications to be tested. Buffer zones would need to be maintained between organic and non-organic plots. Buffer zones must be described in the research operation's Organic System Plan, agreed to by the certifying agent. The size of the buffer depends on site-specific risks and steps taken to prevent contamination of organic crops and land used to raise organic crops.

Question 2) Scientists studying nutrient cycling in soils often use radio-isotopes (e.g., P-35) as tracers. The radio-isotope would clearly be a prohibited material, but the half-life for these isotopes is well known and in many cases, they will disintegrate to background levels in one season. Can radio-isotopes be used for research on organic land with reduced transition periods?

Answer 2) This is the same situation as question #1 with the same answer.

Question 3) Buffer zone requirements consume large amounts of land when replicated comparisons of conventional and organic treatments are done in a randomized field experiment. Can the buffer zone rules be relaxed in order to increase research efficiency and reduce the cost of such experiments?

Answer 3) Buffer zones requirements depend on the research operation's ability to prevent chemical and/or genetic drift from occurring in order to protect the validity of the research. Buffer zones must be described in the research operation's Organic System Plan, agreed to by the certifying agent. The size of the buffer depends on site-specific risks and steps taken to prevent contamination of organic crops and land used to raise organic crops.

Question 4) Certain experimental monitoring processes, although considered state-of-the-art from a scientific standpoint, may not be allowed under current NOP rules, e.g., neutron probe for soil moisture measurements, chemicals used for extractions in soil, genetically-marked microorganisms, etc. In some cases these are considered standard methods, and failure to use them makes it more difficult to publish research results in peer-reviewed scientific journals. Can research variances be authorized to allow such methods in state-of-the-art organic research?

Answer 4) Monitoring technology that does not introduce a synthetic substance into the crop environment, such as neutron probes, is not a factor. Products produced using an experimental non-synthetic substance can be marketed as organic, unless the substance is listed on §205.602 or §205.604 as a prohibited non-synthetic substance. Land exposed to prohibited materials, including experimental synthetic substances not found on the National List, excluded methods, irradiation, or sewage sludge, would need to be free of prohibited substances for 36 months prior to harvest of crops or products to be sold as organic, in order for the land to be certified.

Question 5) Trials of experimental materials to aid organic production, including but not limited to those for pest and disease control, weed control, soil fertility and crop nutrition, and post-harvest handling and storage, that are still under development often involve products not yet approved or even submitted for review by the NOSB. In some cases, such substances may contain inert ingredients not yet approved. Many companies developing commercial products are hesitant to invest in the necessary development costs until a product has proven efficacy over more than a limited range of sites. This creates a "Catch-22" that slows the commercial development of production and handling inputs and delays their availability for organic producers. Can research variances be granted to speed commercialization of such products?

Answer 5) same response as question 4.

Question 6) A researcher conducts vegetable variety trials. It is often not possible to get untreated seed of new varieties or breeding lines, making it impossible to integrate the treated seed varieties/lines into the organic plots. Instead, the treated seeds are planted in a separate but adjacent block. This prohibits the researcher from analyzing the data as one data set and directly comparing variety performance in the studies. The researcher would like to have a temporary

variance that would allow treated seeds to be planted in the variety trials. In addition, seed companies need efficacy data of their varieties in organic systems before they are willing to make untreated (let alone organic) seeds available. A similar situation exists for organic seed breeding programs, where foundation seeds may only be available as treated with prohibited substances. Can non-approved seed treatments be used in certified organic breeding under a research variance?

Answer 6) No. Seeds treated with prohibited materials become a method for applying a prohibited substance to the land in which they are planted. This is no different than any other application of prohibited materials. Land where treated seeds were planted would need to be free of prohibited substances for 36 months prior to harvest of crops or products to regain certified organic status.

Question 7) Organic livestock health standards mandate that sick animals that do not respond to organic methods must be treated with synthetic medications to restore the health and well-being of the animals. While this standard is an essential animal welfare requirement, it is sometimes a constraint in research evaluating animal health treatments. For crop plants, an untreated control can simply be plowed under, but no ethical option exists for untreated controls in animal veterinary research. Any livestock research funded by USDA must pass animal welfare committee reviews. While these may have less stringent requirements than the NOP rule, they are designed to prevent research abuses of animals in experiments. Some researchers would like their animal welfare review committee approval of experimental protocols to be deemed adequate for organic certification purposes. Is this possible?

Answer 7) Yes. Since organic livestock must be treated humanely, there is no need for a variance on §205.238. If a synthetic substance is used for livestock health care that is not on the National List, however, the animal or its products cannot be sold as organic, per §205.238(c)(7) and §205.105.