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ROP Standards for Origin of Livestock

1. Dairy cows can only be transitioned from conventional to organic with a one-time transition of a single-entity dairy herd during a 12-month transition period. The continuing or recurring transition of conventional animals to organic is prohibited.
2. A maximum of 200 dairy animals may be transitioned in a one-time transition, and at least 40% of the transitioning herd must be under two years of age.
3. A 12-month transition, from conventional to organic, does not begin until a completed application is received by the ROP program administrator.
4. All animals to be transitioned must be on the farm at the beginning of the transition, and each animal must have an identification name or number that can be positively associated with the animal (e.g., ear tattoo, or ear tag).
5. A complete list of all animals on the farm, including identification number, breed, dam, and birthdate, must be submitted with the initial application.
6. 100% of organic standards, including pasture requirements, outdoor access, feed requirements and appropriate healthcare materials must be met for all groups of animals for the entire transition year.
7. Organic and non-organic lactating animals may not be kept on the same farm.

ROP Standards for Grazing of Ruminant Animals

1. A minimum of 40% DMI and a goal of 50% or greater DMI from pasture averaged over the entire grazing season for each type and class of animal (e.g., milking cows, dry cows, heifers). Farms below 50% DMI must provide a plan for how to achieve 50%, or describe the reasonable impediments to achieving 50%.
2. The grazing season is defined as beginning two weeks after the average normal 24-hour temperature for the farm's specific locale rises above 45o F and ends when

the average normal 24-hour temperature declines to 45 o F. It includes all months in between in which pasture forages normally grow in the locale. The grazing season can be suspended for time periods when the average normal 24-hour temperature in the locale rises above 80 o F. It must commence again two weeks after the average normal 24-hour temperature declines to 80 o F.

3. The ROP Program Administrator can make exceptions for documented cases of droughts or floods.
4. The maximum herd size for dairy cows grazing pastures associated with a single milking facility shall be 1000 animal units. Upon written request, variances may be granted based on uniquely favorable growing climates that can achieve 50% DMI or greater from pasture.
5. Certifiers must require producers to complete a calculation matrix for each grazing group and for each time period in which the ration changes. Inputs for the calculation matrix should include the average animal weight, average total daily DMI, and the DMI from non-pasture feed sources. The calculation output must document the percent DMI from non-pasture feeds, and by subtraction specify the percent DMI from pasture grazing.
6. Producers must document their pasture acres, average pasture yields, and numbers of grazing animals in each grazing group.

Terms Defined

Animal Units: The sum of the weights of all animals in a group divided by 1000.

ROP Standards for Grown in the Ground

1. Intent. Organic crops are grown in the soil, in the ground. Organic terrestrial plant production must be a soil-based system in which plant roots grow in healthy, living soil. Biological activity, essential for healthy crops must be supported by sound soil stewardship. Soil management must maintain or improve soil organic matter content and must select and implement stewardship practices that maintain or improve the physical, chemical and biological condition of the soil and minimize soil erosion. Importantly, soil must provide the significant majority of nourishment for plants.
2. Connection to Subsoil. Organic terrestrial crops must be produced in-the-soil in-the-ground with plant roots in living soil, or in living soil mixed or fertilized with materials and products allowed in organic production, in connection with the subsoil and bedrock. Aquatic plants, such as water cress which naturally grow in water, are excluded from this requirement. Mushrooms, which are not plants and therefore do not depend on minerals from soil, are excluded from this requirement.

3. **Hydroponics Prohibited.** All forms of hydroponic crop production, which is a generic class of soil-less production whereby terrestrial plants are grown with their roots in a nutrient solution only or in an inert medium to which a nutrient solution is added, are prohibited. Aquatic plants are excluded from this prohibition.
4. **Containers Prohibited.** Growing terrestrial plants to harvest in containers, bags, or similar vessels, in which the roots are not in connection with the soil, the subsoil and the bedrock is prohibited. ROP farms may harvest minor production from containers provided products harvested from containers are not labeled ROP, and do not represent more than 1% of total farm sales.
5. **Transplants Allowed.** In order to facilitate traditional organic propagation and production methods, growing annual or perennial seedlings or transplants in container vessels for further transplanting into soil is permitted so long as: 1) all substrate materials used are allowed in NOP organic production, and 2) the transplant growth life cycle occurs where plant roots in living soil in connection with the subsoil and bedrock must provide the majority of nutrients, as measured from time of initial seeding/propagation to time of commercial crop harvest, and is measured by crop mass.
6. **Ornamentals and Herbs Sold in Containers.** Ornamental plants and herbs may be grown and sold in the containers in which they grew. This will ensure that consumers understand how these plants were produced. All substrate materials used must be allowed in NOP organic production.
7. **Microgreens Production.** Microgreens are a crop analogous to sprouts. Therefore, microgreens may be grown in container vessels provided that 1) no solid or liquid fertility is added to the container after the crop is planted, and 2) the microgreens must be harvested within 21 days after planting. Analogous to sprouts, the seed used in the production of all microgreens must be NOP Certified Organic.
8. **Temporary Exemptions.** Farmers who have in the past grown NOP Certified Organic plants in container vessels not connected with the soil, subsoil and the bedrock, for three or more of the last five years, and require time to transition to in-the-ground production, upon submission of a written transition plan, which demonstrates substantial dedication to the transition process, as well as effective metrics for monitoring transition progress, may be granted approval in writing from the Program Administrator to a limited, one-time, revocable, conditional exemption from Section 1.4 for a period not to exceed 24 months from the date of initial publishing of these standards, so long as in the sole judgment of the Program Administrator, the aforementioned approved transition plan is being strictly adhered to.

ROP Standards for Soil Management

The ROP standards for soil management are the EXACT NOP standards stated in section 205.203 of the NOP Regulatory Text, however the ROP standards honor the legal meaning of the word “must.”

The producer must select and implement tillage and cultivation practices that maintain or improve the physical, chemical, and biological condition of soil and minimize soil erosion.

The producer must manage crop nutrients and soil fertility through rotations, cover crops, and the application of plant and animal materials.

The producer must manage plant and animal materials to maintain or improve soil organic matter content 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. Animal and plant materials include:

(1) Raw animal manure, which 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;

(2) Composted plant and animal materials produced through a process that:

(i) Established an initial C:N ratio of between 25:1 and 40:1; and

(ii) Maintained a temperature of between 131°F and 170°F for 3 days using an in-vessel or static aerated pile system; or

(iii) Maintained a temperature of between 131°F and 170°F for 15 days using a windrow composting system, during which period, the materials must be turned a minimum of five times.

NOTE: The NOP published a guidance document that is meant to help certifiers and producers interpret the manure composting guidelines presented above. Real Organic Project will inspect to the compost standards as specified in the [Appendix](#).

(3) Uncomposted plant materials.

A producer may manage crop nutrients and soil fertility to maintain or improve soil organic matter content 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 by applying:

(1) A crop nutrient or soil amendment included on the National List of synthetic substances allowed for use in organic crop production;

(2) A mined substance of low solubility;

(3) A mined substance of high solubility: Provided, That, the substance is used in compliance with the conditions established on the National List of nonsynthetic materials prohibited for crop production;

(4) Ash obtained from the burning of a plant or animal material, except as prohibited in paragraph (e) below: Provided, That, the material burned has not been treated or combined with a prohibited substance or the ash is not included on the National List of nonsynthetic substances prohibited for use in organic crop production; and

(5) A plant or animal material that has been chemically altered by a manufacturing process: Provided, That, the material is included on the National List of synthetic substances allowed for use in organic crop production established in §205.601.

The producer must not use:

(1) Any fertilizer or composted plant and animal material that contains a synthetic substance not included on the National List of synthetic substances allowed for use in organic crop production;

(2) Sewage sludge (biosolids) as defined in 40 CFR part 503; and

(3) Burning as a means of disposal for crop residues produced on the operation: Except, That, burning may be used to suppress the spread of disease or to stimulate seed germination.

Exceptions to ROP Soil Management Standards are limited to:

(1) Seed Sprouts and Microgreens

(2) Mushrooms

(3) Aquatic plants

(4) Seedlings and planting stock for transplanting

ROP Standards for Greenhouse Production

1. Control of soil-borne pests and diseases. Soil health must be primarily maintained by the addition of biologically active compost and other organic materials, by the addition of rock powders, by good sanitation, and/or by practices such as crop rotation or other forms of plant diversity (such as intercropping and undersowing). Solarization and shallow steam treatment of the soil (to a maximum depth of 4 inches) are allowed. Deep steam treatment of the soil (to a depth of more than 4 inches) must only be allowed under exceptional circumstances (e.g. severe infestation with nematodes), which must be documented by the grower, and must require special permission from the Program Administrator. Steam sterilization of growing media is not allowed.
2. Light. The provision of artificial light is allowed, if the normal daylight is insufficient for the normal growing of crops. It must only be allowed on dark, overcast days and for extending the daylight period, and only during autumn, winter and early spring. Artificial light is also allowed for the production of container plants such as seedling, herbs, and ornamentals under the same limitations as already described. Artificial light may also be used for photo-periodical induction of flowering.
3. Exceptions to Soil Bound Production. Growing in substrates (containers) is accepted for seedlings and transplants, and for plants which are sold to the consumer together with the pot/container in which they grow (e.g. herbs in pots, ornamentals). Harvested organic vegetables or fruits must come from plants grown in the soil, and not from container or isolated substrate cultures. Microgreens may be produced in containers if there is no feeding of any kind to the container after seeding. Harvest must occur within 21 days of seeding. Seed for microgreens must be 100% organic.
4. Energy use. If the greenhouse energy consumption exceeds 41,000 BTU per ft² per year, an energy analysis is required and a plan for increased energy efficiency and/or greater use of renewable energy must be produced. The need for lighting and heating, the availability of different sources of energy and the state of the art of greenhouse production vary greatly between different regions. Depending on such regional conditions, different strategies may be necessary to achieve the goal of responsible energy use. We recognize that there is no single recipe for the most responsible use of energy. This task will therefore be difficult to achieve with a single regulation, as long as no scientifically based limit exists. But a process of continuous attention and improvement can lead the way to real change. The heating of green houses to assure frost protection to 40 degrees F is allowed without limitation.

5. Rotation. Crop production without a rotation in protected (greenhouse or tunnel) culture is allowed if the producer can:
 - demonstrate that the system builds and maintains the health of the soil and crops;
 - demonstrate that the system is not reliant upon routine use of (approved) pesticides for insect control. Pesticides are intended as a fallback strategy. Intensive growers must create a level of soil health and a rich biological community that allows production without the regular use of pesticides.

The farm must produce a fertility management plan for the protected cropping system. The plan must demonstrate that the growing system maximizes the efficient use of nutrients and builds soil health and fertility.

ROP Standards for Animal Welfare

General management practice standards

1. All individual animals must have daily, year-round access to the outdoors, where the outdoors constitutes at least 50% vegetated cover during the growing season. Vegetative cover may include but is not limited to pasture, bushes, shrubs, hedgerows, and trees.

Exceptions other than those in the Organic Regulations include:

- a. Pigs are exempt from specific vegetative cover requirements, but must have access to vegetative cover during the growing season and must be managed to contribute to long-term soil health and prevent degradation of the soil.
 - b. Yards, feeding pads, and feedlots may be used to provide access to the outdoors during the non-growing season.
2. The following alterations and practices are prohibited:
 - a. Needle teeth trimming or grinding, nose ringing, tusk removal, castration after 14 days of age, and tail docking in pigs;
 - b. Tail docking and wattling in cattle;
 - c. Disbudding (removing buds under 2 months of age) without anesthesia or NOP allowed pain relief (for example, Dull It). Tipping horns (cutting the non-living tissue) and banding horns is allowed without anesthesia. Dehorning (removing horns over 2 months of age) must always be done by experienced handlers and with appropriate anesthesia.

- d. De-snooding, wattle and comb trimming, notching, toe-clipping and trimming, hole-punching, dubbing, de-beaking and beak trimming, caponization, and forced molting in avian species;
 - e. The use of goggles or other similar artificial devices designed to reduce feather pecking;
 - f. Mulesing and tail docking of sheep shorter than the distal end of the caudal fold in sheep;
 - g. Face branding for all species.
3. The producer of an organic operation must manage manure, including poultry manure, in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, heavy metals, or pathogenic organisms. The producer must also optimize recycling of nutrients and must manage outdoor access in a manner that does not put soil or water quality at risk.

Species-specific management practice standards

1. Cattle, goats, sheep and other ruminants
 - a. Ruminants must get a minimum 40% DMI from pasture during the grazing season, even during a finishing period.
 - b. All ruminants, including dairy cattle, must be organic from the last third of gestation other than the one-time farm transition to organic certification.
 - c. Ruminants, including young animals, may be housed individually until weaning, as long as the animals have sufficient room to turn around, lie down, stretch out while lying down, get up, rest, and groom themselves. In addition, the individual housing of young stock must be designed so that animals can see, smell, and hear other animals. Individually housed ruminants must have continual access to an outdoor exercise area attached to their housing.
 - d. New construction of tie-stall and stanchion housing is prohibited. Tie stalls and stanchions can be used in the milking parlor for the duration of milk collection.
 - e. Young ruminants must be fed colostrum within the first 24 hours of birth.
2. Chickens and other poultry
 - a. Poultry definitions

- i. Mobile housing: A mobile structure for avian species that is moved regularly during the season to fresh ground.
- ii. Fixed housing: Housing that is fixed in place on the land, without the ability to be moved or rotated regularly.
- b. Outdoor access must include soil connected to subsoil and bedrock. The use of “porches” or other screened in and/or roofed structures attached to a fixed poultry house does not qualify as outdoor access.
- c. Slaughter age
 - i. All poultry must spend a minimum of half of their life with outdoor access before being slaughtered. Cornish game hens require 40% of their life with outdoor access. Outdoor access is defined as soil with a minimum 50% vegetative cover.
 - ii. Exceptions to slaughter prohibitions include situations where humane euthanasia is required.
- d. Poultry housing must allow all birds to move freely and engage in natural behavior, including spreading and flapping their wings without interference, foraging, grooming, bathing, scratching, perching, and other instinctual behaviors.
- e. Indoor spacing requirements:

	Mobile Housing	Fixed Housing (measured in linear floor space)
Chicks	Minimum of 0.5 ft ² per bird through 4 weeks old	Minimum of 0.5 ft ² per bird through 4 weeks old
Pullets	Minimum of 1 ft ² from week 5 to maturity	Minimum of 2 ft ² from week 5 to maturity
Layers + Breeders	Stocking density must not exceed 4lbs/ ft ² (live weight)	Stocking density must not exceed 2lbs/ ft ² (live weight)
Broilers	Minimum of 3.5lbs/ ft ² (live weight)	Minimum of 1.5lbs/ ft ² (live weight)

Poult	Requires a minimum of 0.75 ft ² per bird through 5 weeks of age	Requires a minimum of 0.75 ft ² per bird through 5 weeks of age
Turkeys	Minimum of 3 ft ² per bird, 6 weeks and older	Minimum of 6 ft ² per bird, 6 weeks and older
Other Poultry	Stocking density must not exceed 2.5lbs/ ft ²	Stocking density must not exceed 1.5lbs/ ft ²

f. Minimum outdoor spacing requirements:

	Mobile Housing	Fixed Housing (measured in linear floor space)
Layers and Breeders (Seasonal Total)	108 ft ² per bird over the course of the outdoor season	125 ft ² per bird over the course of the outdoor season
Broilers (Seasonal Total)	75 ft ² per bird over the course of the outdoor season	100 ft ² per bird over the course of the outdoor season
Turkeys (Seasonal Total)	175 ft ² per bird over the course of the outdoor season	220 ft ² per bird over the course of the outdoor season
Pullets	4 ft ² daily minimum per bird	4 ft ² daily minimum per bird
Layers and Breeders	5 ft ² daily minimum per bird	5 ft ² daily minimum per bird
Broilers	3.5lbs/ ft ² daily minimum per bird	1.5lbs/ ft ² daily minimum per bird
Turkeys	6 ft ² daily minimum per bird	6 ft ² daily minimum per bird
Other Poultry	1.5lbs/ ft ² daily minimum per bird	1.5lbs/ ft ² daily minimum per bird

g. Outdoor access requirements:

i. Access to outdoor space and door spacing must be designed to promote and encourage outside access for all birds on a daily basis. Producers must provide access to the outdoors at an early age.

ii. Poultry houses must have sufficient exit areas that are distributed to ensure that all individual birds have ready and easy access to the outdoors. Exit areas must be of sufficient size to encourage birds to use outdoor space and allow for more than two birds to exit at the same time and not prevent birds from exiting due to an instinctual fear of aerial predators.

iii. Shade and areas for birds to hide from aerial predators must be provided in outdoor areas by structures, trees, or other objects. In fixed housing systems these structures must be spaced such that birds can safely and comfortably access the entire outdoor area without ever being far from shelter or food.

iv. Fresh food and water must be provided outdoors whenever the birds are using the outdoor space.

h. Perch requirements:

i. Perches consist of a rod or branch type structure above the floor of the house that accommodates roosting, allowing birds to utilize vertical space in the house.

ii. Six inches of perch space must be provided per bird for layer and breeder chickens. Perch space may include the alighting rail in front of the nest boxes.

i. The producer of an organic poultry operation may temporarily confine birds. Confinement events must be recorded. Operations may temporarily confine birds under the following circumstances:

i. The animals stage of life, including:

(a) The first third of a broiler's (*Gallus gallus*) planned lifespan;

(b) Until they are fully feathered for pullets (*Gallus gallus*); and

ii. Until fully feathered for bird species other than *Gallus gallus*.

iii. Inclement weather, including when air temperatures are under 30 degrees F or above 100 degrees F. Confinement due to weather can only happen on the day of the predicted inclement weather;

- iv. Specific, documented conditions under which the health, safety, or well-being of the animal are jeopardized;
 - v. Serious risk to soil or water quality;
 - vi. The treatment of illness or injury;
 - vii. Sorting or shipping birds and poultry sales, provided that the birds are maintained under continuous organic management, throughout the extent of their allowed confinement.
 - viii. For 4-H, National FFA Organization, and other youth projects, provided that temporary confinement for no more than one week prior to a fair or other demonstration, through the event, and up to 24 hours after the birds have arrived home at the conclusion of the event. During temporary confinement, birds must be under continuous organic management, including organic feed, for the duration of confinement; and
 - ix. Birds cannot be confined due to reseeding the outdoor space.
- j. Lighting requirements
- i. Shelters and housing must allow natural light to enter during daylight hours such that inspectors can read without assistance while inside the shelters or housing.
 - ii. Artificial lights cannot be used to extend daylight hours beyond a maximum of 16 hours.

3. Pigs

- a. Pigs must be housed in groups except during:
 - i. Farrowing and suckling periods,
 - ii. For boars,
 - iii. Individuals recovering from illness.
- b. Piglets must not be kept on flat decks or in piglet cages.
- c. Gestation crates and farrowing crates are prohibited. Sows must be able to stand up, turn around, and lay down at all times.

- i. Creeps and bumper bars may be used if set a maximum of 18 inches away from a wall.
- d. Slatted flooring is prohibited in all pig housing and shelters.
- e. Bedding and manipulatable materials:
 - i. Deep bedded straw and/or rooting and/or manipulatable materials must be provided for all pigs to allow individuals to forage, nest, and otherwise prevent behavior problems whenever indoors or during temporary confinement events.
 - ii. During the farrowing and suckling period a minimum of 2 inches of bedding material must be provided through seven days of age, after which more is added.
 - iii. The majority of the bedding must be dry.

ROP Standards for Split Farms

1. Prohibited Practices on Split Farms

- a. No concentrated animal feeding operations
- b. No hydroponic production
- c. No simultaneous parallel production of both organic and non-organic products AND no simultaneous production of ROP and non-ROP products within the following categories:

Vegetables and small fruit (including berries)

Microgreens

Tree fruit

Tree nuts

Tree sap/syrup

Hay and pasture (buffer strips do not count towards parallel production)

Grain and pulses

Fiber from the same species

Dairy from the same species

Eggs from the same species

Meat and byproducts from the same species

2. Allowed Practices on Split Farms

- a. ROP will allow minor non-commercial production for household use, such as hogs, poultry/eggs, kitchen garden, fish and wool, if practices and materials do not affect the integrity of certified production.

b. ROP will allow sale of non-ROP certified production up to 20% of total farm revenue, subject to the split-farm prohibitions above. [Total farm revenue and the 20% exemption will be based on sales of the farm's agricultural products only.] Farms grossing above \$300,000 will be allowed a maximum of \$60,000 in gross sales of non certified production. Exemptions are allowed for animals that are raised according to ROP standards but are not slaughtered in a USDA organic facility. Farms that sell more than 20% of gross income as "NOT CERTIFIED ORGANIC" due to meat sales coming from a non-organic slaughterhouse are still eligible for ROP certification for products that otherwise qualify. This exemption for non-organic slaughterhouses sunsets on February 1, 2023.

c. ROP will allow farms to produce and sell non-certified ornamental bedding plants in excess of the 20% limit, provided:

Plants are managed organically while on farm;

Plants must be clearly identified as non-organic at point of sale;

Only NOP-compliant seed, seed coatings and plugs are used when available;

No neonicotinoids are applied to seeds, soil or plants at any time.

3. Transitional Organic

a. ROP certification of transitional production will not be allowed. Farms with land, crops or livestock undergoing bona fide 3-year transition to certified organic will remain eligible for ROP certification of their NOP production as long as the transitional land is managed according to ROP standards as well. [For purposes of calculating the 20% exemption, sales of transitional products will be counted towards total farm revenue but will not count towards the 20% exemption.]

b. Land must not be rotated in and out of organic certification. An individual plot of land may only be transitioned once into organic certification without approval of the ROP standards board.

4. Non-certified production subject to point-of-sale disclaimer

When non-NOP certified production is grown, raised or processed under the above exemptions, and offered for sale to the public using the ROP-certified farm name or logo on packaging or placards, packaging and placards must clearly identify the product as "NOT CERTIFIED ORGANIC". Farms must require compliance with this provision by all resellers.

The NOT CERTIFIED ORGANIC disclaimer must appear beside the farm name or brand on placards and on the primary display panel of packaging in such a manner that a potential purchaser will take notice of it. Fonts, font size, font

color, sticker size, sticker color and other methods must be employed to achieve sufficient effect.

5. Definition of a farm

For the purposes of ROP certification a farm should be considered, in its entirety, to include ownership or management of all enterprises on all owned or leased properties. Distinct farm operations and/or enterprises that share a substantial portion of labor, land base, equipment and/or management will be considered to be under common ownership or management. Any farm involved in Hydroponic or CAFO production shall be barred from ROP certification.

ROP Standards for Labor Protections

These standards are intended to ensure that ROP certified farms are providing these labor protections provided by law. We support efforts to improve protections afforded to workers and farmers under the law. These standards are explicitly **not** intended to serve as fair labor standards.

1. Documents

- a. All ROP farmers will be provided with a template for a work contract along with a 1 page workers rights document. As part of ROP certification farms must agree to provide these documents to their employees on an annual basis

2. Hiring

- a. Hiring ads and practices do not discriminate against any state or federally protected groups.
- b. Employers must not receive any payment from employees or prospective employees for any cost associated with obtaining a job.
- c. Employers agree to disclose to ROP whether they use contract labor, and the name of the contract labor organization they use.

3. Pay

- a. All employers must have a system that can reasonably provide employees with pay stubs for every pay period detailing hours, pay, taxes and employer deductions. Farms in their first 5 years of operation may provide this information in an alternative written format provided that employees can still clearly determine their pay, hours and deductions within a given pay period.

4. Housing (**If** an employer provides housing to their employees) must

- a. Be a safe physical environment
- b. Have a natural source of light and a safe source of lighting
- c. Have a clean, private and cleanable space with a space for personal cleaning and access to a sanitary bathroom or latrine.
- d. Have access to potable water

- e. All employee housing must be described accurately and in detail previous to employment. This must include a special emphasis on non-traditional housing

5. Workplace

- a. All documents provided to farm workers (such as pay stubs, work contracts ect) must be provided in the native language of the farm worker
- b. Employees must have complete freedom of movement and association.
- c. Employees must have access to medical care, access to transportation, communications (phone/computer) and shopping for basic needs.
- d. Employers must not, under any circumstances, hold on to employee passports, immigration or work documents.
- e. Employees are provided, at no cost
 - All tools, supplies and equipment required to perform their assigned duties.
 - Appropriate safety equipment when exposed to levels of high noise, dust or dangerous chemicals, or are working with dangerous equipment.
 - Appropriate safety training by their employer on all potentially hazardous equipment and materials.

Appendix

NOP Guidance 5021 Compost and Vermicompost in Organic Crop Production

1. Purpose

This guidance provides clarification on allowed practices for composition, production, and use of compost and vermicompost in organic crop production.

2. Scope

This guidance applies to National Organic Program (NOP) certifying agents, all certified and exempt organic producers, and input suppliers.

3. Background

The NOP regulation 7 CFR 205.203(c), the soil fertility and crop nutrient management practice standard, sets forth the requirements for management and application of plant and animal materials. This section of the NOP regulations provides specific requirements for the use of compost and raw manure, but does not describe the full range of methods that may be used for compost production.

A key provision of the NOP regulations regarding addition of organic matter is found at ²⁴ 205.203, which states: “The producer must manage plant and animal materials to maintain or improve soil organic matter content 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.” Section 205.203 further states that animal and plant materials include three types of materials: raw manure, composted plant and

animal materials, and uncomposted plant materials. Raw manure is restricted in use, and compost containing animal materials must be produced under certain conditions.

The designated types of systems do not include common methods of composting such as in piles (rather than windrows) or include any reference to vermicompost. The National Organic Standards Board (NOSB) convened two task forces that delivered comprehensive reports to the NOSB on compost (2002) and compost tea (2004). The NOSB then made a final recommendation on compost, compost tea, processed manure, and vermicompost in November 2006.

The NOP concurs with the NOSB that the examples provided in § 205.203(c)(1-3) is not a finite list of acceptable plant and animal materials for use in organic production. Site-specific variation in feedstock materials, management practices, and production requirements dictate that organic producers exercise flexibility in managing plant and animal materials on their operations. In July 2007, the NOP issued NOP 5006 – Processed Animal Manures. NOP 5006 clarifies the criteria for production of processed manure products that may be used without restriction in organic production.

While the use of processed animal manures was clarified in NOP 5006, the use of vermicompost was not addressed in that guidance. Vermicompost is an alternative method for meeting the NOP compost requirements. Vermicomposts are organic matter of plant and/or animal origin, consisting mainly of finely-divided earthworm castings, produced non-thermophilically with bio-oxidation and stabilization of the organic material, due to interactions between aerobic microorganisms and earthworms, as the material passes through the earthworm gut. Feed stocks for vermicompost materials include organic matter of plant or animal origin, preferably thoroughly macerated and mixed before processing. Pathogenic organisms are eliminated in 7–60 days, depending on the technology used.

Vermicomposting systems depend upon regular additions of thin layers of organic matter at 1–3 day intervals to maintain aerobic conditions and avoid temperature increases above 35°C (95°F) which will kill the earthworms. Methods of vermicomposting include outdoor windrows (usually managed for 6–12 months), angled wedge systems (usually managed for 2–4 months), indoor container systems (usually managed for 2–4 months) and continuous flow reactors (usually managed for 30–60 days). For outdoor windrows, one indicator that the process is complete is when the worms move out of the compost, which would typically take 6 months in warm conditions, or up to 12 months in colder climates. Earthworms fragment the organic wastes into finely-divided materials with a low C:N ratio and high microbial activity. Nitrogen is mostly found in the nitrate form, and potassium and phosphorus are in soluble forms. For most organic wastes, no traces of the raw materials are visible. Processing is maintained at 70–90% moisture content with temperatures maintained in the range of 18–30°C (65–86°F) for good productivity.

4. Policy

4.1 General

Compost and vermicompost production practices should be described in the operation's organic system plan (OSP). Certifying agents may allow the use of compost if they review the OSP and records and are assured that all requirements are met. Compost production records should include the type and source of all feedstock materials. When animal materials are used in compost production, the certified operation should maintain temperature monitoring logs, and document the practices used to achieve uniform elevated temperatures. Vermicompost production records should include the type and source of all feedstock materials. When animal materials are used to produce vermicompost, the certified operation should maintain a log of duration of vermicomposting with a description of the practices used to achieve aerobic conditions and maintain adequate moisture. Certifiers reviewing compost inputs produced by commercial operators should similarly review the production methods and source materials.

Certified operations can also demonstrate compliance with the compost requirements by measuring temperature, time, moisture content, chemical composition, and biological activity. These measurements may include testing feedstock materials and compost for one or more characteristic 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.

4.2 Compost

Compost containing plant and animal materials is allowed in accordance with § 205.203(c)(2). Other examples of acceptable composting methods include:

1. Compost that is made from allowed feedstock materials (either nonsynthetic substances not prohibited at § 205.602, or synthetics approved for use as plant or soil amendments), and
2. The compost pile is mixed or managed to ensure that all of the feedstock heats to the minimum of 131°F (55°C) for a minimum of three days. The monitoring of the above parameters must be documented in the OSP in accordance with § 205.203(c) and verified during the site visit.

4.3 Vermicompost

Vermicomposting is an acceptable method of composting when:

1. It is made from allowed feedstock materials (either nonsynthetic substances not prohibited at § 205.602, or synthetics approved for use as plant or soil amendments);
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.

4.4 Permitted Uses

Composts containing animal materials that do not meet the requirements at 4.1 and vermicomposts containing animal materials that do not meet the requirements at 4.2 of this policy may be permitted subject to restrictions of § 205.203(c)(1), similar to raw animal manure, provided all feedstocks are allowed materials (either nonsynthetic substances not prohibited at § 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 § 205.203(c)(3), provided all feedstocks are allowed materials (either nonsynthetic substances not prohibited at § 205.602, or synthetics approved for use as plant or soil amendments).

5. References NOP Regulations (as amended to date) 7 CFR § 205.203 Soil fertility and crop nutrient management practice standard.

(c) The producer must manage plant and animal materials to maintain or improve soil organic matter content 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. Animal and plant materials include:

- (1) Raw animal manure, which must be composted unless it is...
- (2) Composted plant and animal materials produced through a process that...
- (3) Uncomposted plant materials.

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

NOSB Recommendations

November 2006, Final NOSB Recommendation on Guidance: Use of Compost, Vermicompost, Processed Manure, and Compost Teas. NOP Program Handbook: Guidance and Instructions for Accredited Certifying Agents and Certified Operations NOP 5006: Processed Animal Manures. July 22, 2011.

Approved on July 22, 2011