ORGANIC AGRICULTURE IS SOIL-BASED: POSITION STATEMENT

A Fundamental Principle Underlying Organic Crop Certification

The USDA organic regulations define organic production as,

"A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity." 7 CFR 205.2 "Organic production"

Organic production requires a plan of management that has been agreed to by the producer and the certifying agent and that includes written plans concerning all aspects of agricultural production described in the Act and the regulations.

According to the Organic Food Production Act (OFPA) 6513(b)(1), "An organic plan **shall contain provisions designed to foster soil fertility**, primarily through the management of the organic content of the **soil** through proper tillage, crop rotation, and manuring" (emphasis added).

Support for the idea that organic production is soil-based is found in the USDA's preamble to the regulations published in 2000 which states, "The **soil fertility and crop nutrient management practice standard** in section 205.203 [of the National Organic Program Final Rule] **establishes the universe of allowed materials and practices**" (emphasis added). Hydroponic production was not included in that universe because hydroponic production does not manage soil fertility.

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§ 205.203 Soil fertility and crop nutrient management practice standard.
(a) 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.
(b) The producer must manage crop nutrients and soil fertility through rotations, cover crops, and the application of plant and animal materials.
(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. (emphasis added) 7 CFR 205.203(a-c)

The general requirements in the USDA organic regulations also include a requirement that presumes soil as a part of an organic production operation.

§ 205.200 General.
Production practices implemented in accordance with this subpart must maintain or improve the natural resources of the operation, including soil and water quality.

§ 205.2 Natural resources of the operation.
The physical, hydrological, and biological features of a production operation, including soil, water, wetlands, woodlands, and wildlife.

The National Organic Standards Board reiterated support of organic production as soil-based production in 2010 when it wrote, "Although the regulations do not specifically state ‘soil only production’, the exclusion of soil from organic production of normally terrestrial, vascular plants violates the intent of the regulations. This intent can be seen in these sections of the rule that require proper stewardship toward improving and maintaining the soil ecology within an organic farming system." The 2010 NOSB recommendation titled, "Production Standards for Terrestrial Plants in Containers and Enclosures," further confirmed that organic production was designed to be a soil-based system when it said, “Based on its **foundation of sound management of soil biology and ecology**, it becomes clear that systems of crop production that eliminate soil from the system, such as hydroponics or aeroponics, can not be considered as examples of acceptable organic farming practices. **Hydroponics**, the production of plants in nutrient rich solutions or moist inert material, **or aeroponics**, a variation in which plant roots are suspended in air and continually misted with nutrient solution, have their place in production agriculture, but certainly **cannot be classified as certified organic growing methods due to their exclusion of the soil-plant ecology intrinsic to organic farming systems and USDA/NOP regulations governing them**" (emphasis added). Soil is important to organic systems because the nutrients come from the breakdown of organic matter by organisms in living soil. This is in contrast to nutrients being fed directly to the plant via the continuous introduction of soluble fertilizers that occurs with hydroponic growing methods.

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While it is clear that the organic regulations and OFPA were designed around the principle that crops would be grown in soil, certain exceptions for the production of planting stock, sprouts, and annual seedlings are specifically mentioned in 7 CFR 205.204 of the regulations in order to allow the production of crops which either a.) receive most of their nutrition from the seed, or b.) will eventually be planted in the soil and grown to maturity.[1] The NOP clearly meant to allow these types of production[2]but without standards specific to these types of production, certifiers are unable to consistently implement the rule.

The National Organic Program Final Rule states that production practices must maintain or improve natural resources, including soil and water quality (7 CFR 205.200). Furthermore, the Rule makes it clear that a 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 (7 CFR 205.203). Crop rotation is cited several times in the regulation as a primary method of managing crop nutrients and soil fertility, improving soil organic matter content, managing deficient or excess nutrients, managing crop pests, weeds, and diseases, and introducing

biological diversity. Crop rotation cannot fulfill these functions if crops are not grown in soil. The regulations use the word "must" for each of these requirements, indicating that these practices are mandatory. Therefore, if an organic production plan is to comply with the full intent of OFPA and the National Organic Program Final Rule, crops must be grown in soil except with regard to those exceptions mentioned in 7 CFR 205.204.[3]

Soil is defined by the Natural Resource Conservation Service (NRCS) as "(i) The unconsolidated mineral or organic material on the immediate surface of the Earth that serves as a natural medium for the growth of land plants. (ii) The unconsolidated mineral or organic matter on the surface of the Earth that has been subjected to and shows effects of genetic and environmental factors of: climate (including water and temperature effects), and macro- and microorganisms, conditioned by relief, acting on parent material over a period of time. A product-soil differs from the material from which it is derived in many physical, chemical, biological, and morphological properties and characteristics."

[1] Microgreens are somewhere between sprouts and annual seedlings and deserve their own regulations. Fodder, while not mentioned in the regulations for crops, is a subset of sprouts meant as livestock feed that receive their nutrition from the seed. Mushrooms are not plants and deserve their own standards based on the 2001 NOSB recommendation.

[2] "During the 18-month implementation period, the NOP intends to publish for comment certification standards for apiculture, mushrooms, greenhouses and aquatic animals. These standards will build upon the existing final rule and will address only the unique requirements necessary to certify these specialized operations." https://www.federalregister.gov/d/00-32257/p-100

[3] Because there are no regulations for greenhouses the requirement for crop rotation has been interpreted differently in greenhouse situations, but certifiers agree that the function of the crop rotations must be fulfilled.

The proposed organic poultry and livestock standards would define “soil” as “the outermost layer of the earth comprised of minerals, water, air, organic matter, fungi, and bacteria in which plants may grow roots.”

If we view ‘soil’ in light of these important definitions, and apply these definitions when we review usages of the term ‘soil’ throughout OFPA and The National Organic Program Final Rule, it becomes clear that a compliant organic production plan must root itself in the outermost layer of Earth where plants are to be grown to maturity in that substance.[4]

[4] Looking at NOP regulations in the context of the global organic movement, we can see support for the idea that soil-based growing methods must be central to organic production. The EU regulations, Soil Association Regulations, and COR regulations all include prohibitions against hydroponics and state that soil-related crop cultivation means producing in living soil or in soil that is mixed and fertilized with materials and products that are allowed in organic production in connection with the subsoil and bedrock.

[5] The 2002 Preamble states, “During the 18-month implementation period, the NOP intends to publish for comment certification standards for apiculture, mushrooms, greenhouses and aquatic animals. These standards will build upon the existing final rule and will address only the unique requirements necessary to certify these specialized operations.”

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The Organic Food Production Act (OFPA) begins by stating its purposes:
§6501. Purposes. It is the purpose of this chapter —(1) to establish national standards governing the marketing of certain agricultural products as organically produced products; (2) to assure consumers that organically produced products meet a consistent standard; and (3) to facilitate interstate commerce in fresh and processed food that is organically produced. Achieving OFPA’s second purpose builds on the first purpose in the list. We can only “assure consumers that organically produced products meet a consistent standard” after such standards are established. Until the USDA publishes the standards it promised in the Preamble to the final rule in 2002, certifiers do not have consistent standards for the certification of beekeeping, fish, mushrooms, or greenhouses.[5] It is clear that such operations were intended to be certified, but certifiers have had to develop their own policies in the absence of clear national standards, which is contrary to achieving the first and second purposes of OFPA despite the best intentions of the individual certification agencies. In the meantime, certifiers must enforce the regulations that exist bearing in mind the intent of organic movements worldwide.

THIS POSITION WAS DEVELOPED BY THE FOLLOWING SOIL-BASED CERTIFICATION ORGANIZATIONS:

MOFGA Certification Services, LLC

NOFA-NY Certified Organic, LLC

OEFFA Certification

OneCert, Inc.

OneCert International Pvt. Ltd.

Real Organic Project

Vermont Organic Farmers, LLC

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Baystate Organic Certifiers
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Cornucopia Institute
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Food for Maine's Future
Georgia Organics
Global Organic Alliance
Hanover Co-op Food Stores of NH & VT
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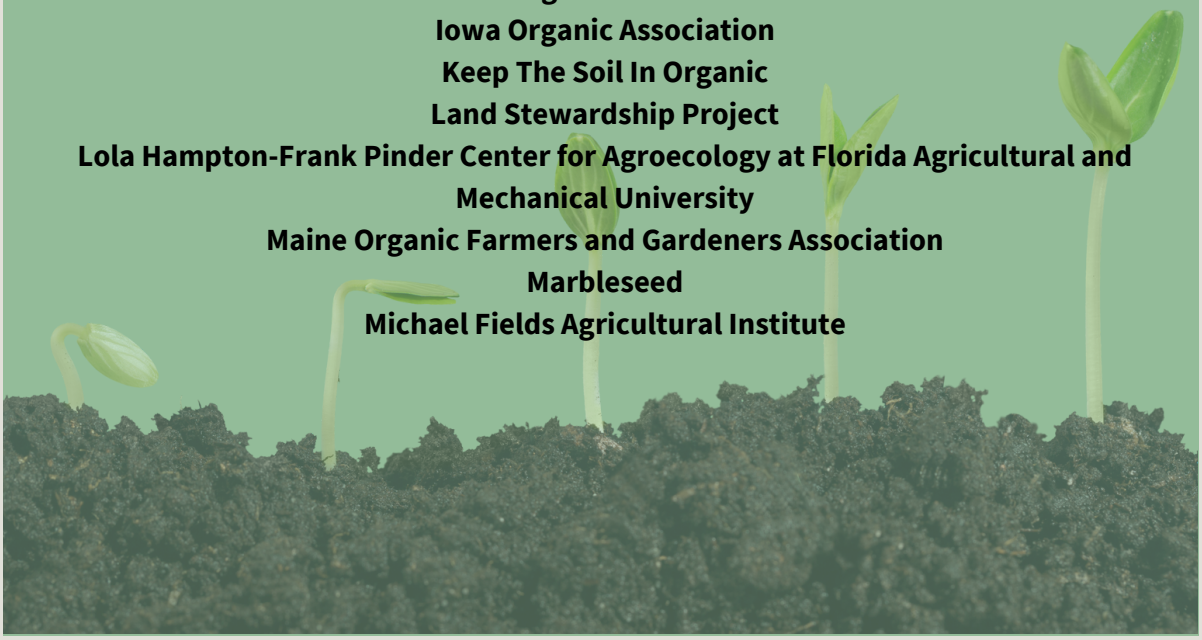
Iowa Organic Association
Keep The Soil In Organic
Land Stewardship Project
Lola Hampton-Frank Pinder Center for Agroecology at Florida Agricultural and Mechanical University
Maine Organic Farmers and Gardeners Association
Marbleseed
Michael Fields Agricultural Institute



THIS POSITION IS ENDORSED BY:

Michigan Organic Food and Farm Alliance (MOFFA)
National Family Farm Coalition (NFFC)
National Organic Coalition (NOC)
Nature's Path
Naturland
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Northeast Organic Dairy Producers Alliance (NODPA)
Northeast Organic Farming Association-Interstate Council
Northeast Organic Farming Association of Connecticut (CT NOFA)
Northeast Organic Farming Association of Massachusetts (NOFA/MASS)
Northeast Organic Farming Association of New Hampshire (NOFA-NH)
Northeast Organic Farming Association of New Jersey (NOFA-NJ)
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Organic Crop Improvement Association (OCIA)
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The Center For Food Safety
The Soil Association
The Vereniging Bioglasteelt
Western Organic Dairy Producers Association (WODPA)
Wild Farm Alliance