

Organic farming

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Organic farming, also known as organic agriculture or ecological farming or biological farming, is an agricultural system that emphasizes the use of naturally occurring, non-synthetic inputs, such as compost manure, green manure, and bone meal and places emphasis on techniques such as crop rotation, companion planting, and mixed cropping. Biological pest control methods such as the fostering of insect predators are also encouraged. Organic agriculture can be defined as "an integrated farming system that strives for sustainability, the enhancement of soil fertility and biological diversity while, with rare exceptions, prohibiting synthetic pesticides, antibiotics, synthetic fertilizers, genetically modified organisms, and growth hormones". It originated early in the 20th century in reaction to rapidly changing farming practices. Certified organic agriculture accounted for 70 million hectares (170 million acres) globally in 2019, with over half of that total in Australia. Organic standards are designed to allow the use of naturally occurring substances while prohibiting or severely limiting synthetic substances. For instance, naturally occurring pesticides, such as garlic extract, bicarbonate of soda, or pyrethrin (which is found naturally in the Chrysanthemum flower), are permitted, while synthetic fertilizers and pesticides, such as glyphosate, are prohibited. Synthetic substances that are allowed only in exceptional circumstances may include copper sulfate, elemental sulfur, and veterinary drugs. Genetically modified organisms, nanomaterials, human sewage sludge, plant growth regulators, hormones, and antibiotic use in livestock husbandry are prohibited. Broadly, organic agriculture is based on the principles of health, care for all living beings and the environment, ecology, and fairness. Organic methods champion sustainability, self-sufficiency, autonomy and independence, health, animal welfare, food security, and food safety. It is often seen as part of the solution to the impacts of climate change. Organic agricultural methods are internationally regulated and legally enforced by transnational organizations such as the European Union and also by individual nations, based in large part on the standards set by the International Federation of Organic Agriculture Movements (IFOAM), an international umbrella organization for organic farming organizations established in 1972, with regional branches such as IFOAM Organics Europe and IFOAM Asia. Since 1990, the market for organic food and other products has grown rapidly, reaching \$150 billion worldwide in 2022 – of which more than \$64 billion was earned in North America and EUR 53 billion in Europe. This demand has driven a similar increase in organically managed farmland, which grew by 26.6 percent from 2021 to 2022. As of 2022, organic farming is practiced in 188 countries and approximately 96,000,000 hectares (240,000,000 acres) worldwide were farmed organically by 4.5 million farmers, representing approximately 2 percent of total world farmland. Organic farming can be beneficial on biodiversity and environmental protection at local level; however, because organic farming can produce lower yields compared to intensive farming, leading to increased pressure to convert more non-agricultural land to agricultural use in order to produce similar yields, it can cause loss of biodiversity and negative climate effects.