

# Creating Abundance Biological Innovation And American Agricultural Development

## Biological pest control

*biological control research and development in the United States Department of Agriculture: 1883-1993. U.S. Department of Agriculture, Agricultural Research*

Biological control or biocontrol is a method of controlling pests, whether pest animals such as insects and mites, weeds, or pathogens affecting animals or plants by using other organisms. It relies on predation, parasitism, herbivory, or other natural mechanisms, but typically also involves an active human management role. It can be an important component of integrated pest management (IPM) programs.

There are three basic strategies for biological control: classical (importation), where a natural enemy of a pest is introduced in the hope of achieving control; inductive (augmentation), in which a large population of natural enemies are administered for quick pest control; and inoculative (conservation), in which measures are taken to maintain natural enemies through regular reestablishment...

## Agriculture

*biological control research and development in the United States Department of Agriculture: 1883-1993. U.S. Department of Agriculture, Agricultural Research*

Agriculture is the practice of cultivating the soil, planting, raising, and harvesting both food and non-food crops, as well as livestock production. Broader definitions also include forestry and aquaculture. Agriculture was a key factor in the rise of sedentary human civilization, whereby farming of domesticated plants and animals created food surpluses that enabled people to live in the cities. While humans started gathering grains at least 105,000 years ago, nascent farmers only began planting them around 11,500 years ago. Sheep, goats, pigs, and cattle were domesticated around 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. In the 20th century, industrial agriculture based on large-scale monocultures came to dominate agricultural output.

As of...

## Biological warfare

*Protocol and several international humanitarian law treaties. In particular, the 1972 Biological Weapons Convention (BWC) bans the development, production*

Biological warfare, also known as germ warfare, is the use of biological toxins or infectious agents such as bacteria, viruses, insects, and fungi with the intent to kill, harm or incapacitate humans, animals or plants as an act of war. Biological weapons (often termed "bio-weapons", "biological

threat agents", or "bio-agents") are living organisms or replicating entities (i.e. viruses, which are not universally considered "alive"). Entomological (insect) warfare is a subtype of biological warfare.

Biological warfare is subject to a forceful normative prohibition. Offensive biological warfare in international armed conflicts is a war crime under the 1925 Geneva Protocol and several international humanitarian law treaties. In particular, the 1972 Biological Weapons Convention (BWC) bans the...

## History of agriculture in the United States

*other uses. An awareness of the need for agricultural conservation followed a history of agricultural abundance, as seen in the rapid settlement of western*

The history of agriculture in the United States covers the period from the first English settlers to the present day. In Colonial America, agriculture was the primary livelihood for 90% of the population, and most towns were shipping points for the export of agricultural products. Most farms were geared toward subsistence production for family use. The rapid growth of population and the expansion of the frontier opened up large numbers of new farms, and clearing the land was a major preoccupation of farmers. After 1800, cotton became the chief crop in southern plantations, and the chief American export. After 1840, industrialization and urbanization opened up lucrative domestic markets. The number of farms grew from 1.4 million in 1850, to 4.0 million in 1880, and 6.4 million in 1910; then...

## Organic farming

*Organic farming, also known as organic agriculture or ecological farming or biological farming, is an agricultural system that emphasizes the use of naturally*

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...

## Sustainability organization

*and biological and cultural controls are implemented to control pests, weeds and diseases. Sustainable agriculture organizations aim to educate and encourage*

A sustainability organization is (1) an organized group of people that aims to advance sustainability and/or (2) those actions of organizing something sustainably. Unlike many business organizations, sustainability organizations are not limited to implementing sustainability strategies which provide them with economic and cultural benefits attained through environmental

responsibility. For sustainability organizations, sustainability can also be an end in itself without further justifications.

Recently, the natural environment has become a key strategic issue in both the business and academic communities. Through "implementing sustainability strategies, firms can integrate long-run profitability with their efforts to protect the ecosystem, providing them with opportunities to achieve the traditional...

### Regenerative agriculture

*Regenerative agriculture is based on various agricultural and ecological practices, with a particular emphasis on minimal soil disturbance and the practice*

Regenerative agriculture is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting biosequestration, increasing resilience to climate change, and strengthening the health and vitality of farm soil.

Regenerative agriculture is not a specific practice. It combines a variety of sustainable agriculture techniques. Practices include maximal recycling of farm waste and adding composted material from non-farm sources. Regenerative agriculture on small farms and gardens is based on permaculture, agroecology, agroforestry, restoration ecology, keyline design, and holistic management. Large farms are also increasingly adopting regenerative techniques, using...

### Agriculture in the United Kingdom

*bodies and associations, charities and others interested in agriculture. Agricultural Law Association (ALA) The Agricultural Law Association (ALA) is a non-political*

Agriculture in the United Kingdom uses 70% of the country's land area, employs 1% of its workforce (462,000 people) and contributes 0.5% of its gross value added (£13.7 billion). The UK currently produces about 54% of its domestic food consumption.

Agricultural activity occurs in most rural locations. It is concentrated in the drier east (for crops) and the wetter west (for livestock). There are 191,000 farm holdings, which vary widely in size.

Despite skilled farmers, advanced technology, fertile soil and subsidies, farm earnings are relatively low, mainly due to low prices at the farm gate. Low earnings, high land prices and a shortage of let farmland discourage young people from joining the industry. The average (median) age of the British farm holder was about 60 in 2016; the UK government...

### Effects of climate change on agriculture

*change on agriculture, many of which are making it harder for agricultural activities to provide global food security. Rising temperatures and changing*

There are numerous effects of climate change on agriculture, many of which are making it harder for agricultural activities to provide global food security. Rising temperatures and changing weather patterns often result in lower crop yields due to water scarcity caused by drought, heat

waves and flooding. These effects of climate change can also increase the risk of several regions suffering simultaneous crop failures. Currently this risk is rare but if these simultaneous crop failures occur, they could have significant consequences for the global food supply. Many pests and plant diseases are expected to become more prevalent or to spread to new regions. The world's livestock are expected to be affected by many of the same issues. These issues range from greater heat stress to animal feed...

## Plant breeding

*commercialize new varieties of agricultural crops created through cross-pollination. The firm's first introduction was the Abundance Oat, an oat variety. It*

Plant breeding is the science of changing the traits of plants in order to produce desired characteristics. It is used to improve the quality of plant products for use by humans and animals. The goals of plant breeding are to produce crop varieties that boast unique and superior traits for a variety of applications. The most frequently addressed agricultural traits are those related to biotic and abiotic stress tolerance, grain or biomass yield, end-use quality characteristics such as taste or the concentrations of specific biological molecules (proteins, sugars, lipids, vitamins, fibers) and ease of processing (harvesting, milling, baking, malting, blending, etc.).

Plant breeding can be performed using many different techniques, ranging from the selection of the most desirable plants for propagation...

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