



What is Modern Agriculture?

Modern agriculture is a term used to describe the wide majority of production practices employed by America's farmers. More than 90 percent of farmers today embrace using the most innovative practices and growing techniques to produce enough food, fuel and fiber for a growing world while at the same time minimizing their environmental footprint. The term "modern agriculture" depicts their commitment to innovation, stewardship and meeting the global food challenge all at once.

Modern agriculture provides farmers with new innovations, research and scientific advancements to produce safe, sustainable and affordable food. Intensive scientific research and robust investment in modern agriculture during the past 50 years has helped farmers double food production while essentially freezing the footprint of total cultivated farmland. This allows for responsible food production: new technologies help farmers use precise applications and fewer inputs, leading to increased productivity and higher yields, and creating an affordable supply of nutritious food for those who need it most.



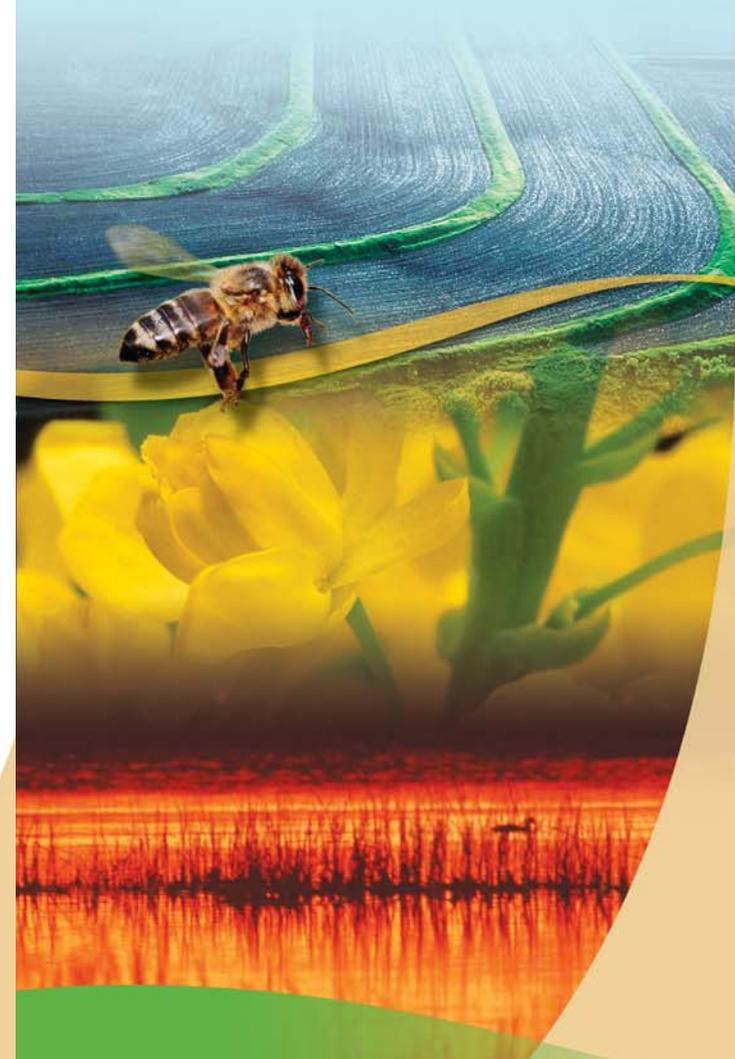
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Modern Agriculture, Sustainable Solutions

How Today's Farmers Conserve
and Protect Natural Resources While
Meeting the World's Agricultural Needs





How Do Modern Agriculture Practices Preserve and Protect Beneficial Insects & Other Species?

Modern agricultural advancements, like the use of crop protection chemicals, are designed to target harmful pests, weeds or various fungi that hinder or otherwise harm crop production and plants. The crop protection industry, as required by the Environmental Protection Agency (EPA), conducts more than 120 tests on each of their products to ensure they do not pose unreasonable risks to non-target plants, wildlife and the environment. A pesticide product cannot be approved and registered until all of these tests show the product is safe for use as directed.



Many plant and wildlife species can be found in or near agricultural fields. Innovative products, like herbicides, fungicides and insecticides, not only safeguard the crops that become our food, fiber and fuel, but also preserve habitats for other plant and animal species by increasing yields on existing farmland. This means land that might otherwise be plowed for crops can be left undisturbed. The natural habitats of hundreds of species of animals, along with native plants, can be left undeveloped and intact. Crop protection products, like herbicides, also prevent invasive weeds from taking over habitats and obstructing bodies of water, preventing displacement or death of species, including fish and waterfowl.

Healthy plants that are protected from pests and disease not only increase crop yields but also present more opportunities for pollination. Honey bees account for 80 percent of all insect pollination, which agriculture depends on to thrive. Crop protection products not only provide honey bees with more food resources, but also directly protect against the predators and parasites that attack these beneficial insects. Miticides protect bees from Varroa mites that can quickly spread among hives killing these pollinators, which are vital to a healthy and productive agriculture.



How Do Modern Agriculture Methods Preserve and Protect the Environment?

Farmers use many practices and innovations aimed toward reducing agriculture's environmental footprint. Modern agriculture has become increasingly efficient, relying on less energy, irrigated water and carbon emissions to produce more. The use of herbicides is one modern agriculture practice that reduces environmental impacts. Herbicide usage allows for no-till and conservation tillage, which conserves soil and reduces erosion by an estimated 360 billion pounds per year. As a result, this improves water quality in streams and lakes by preventing sediment deposits that can impact and disrupt aquatic ecosystems. In addition, the less often earth is turned over, the fewer carbon emissions from gas-powered tilling machinery are released and carbon within the soil is sequestered in land left unplowed, rather than released in to the environment.

Through methods like Integrated Pest Management (IPM), farmers also minimize effects on natural resources like air, water and soil. IPM combines the planned use of crop protection inputs with other practices to keep pest populations low and minimize effects on the environment. These practices include: monitoring for pests, rotating between different crops and selecting specially bred pest-resistant varieties, which are resistant or immune to pest and disease damage, to help safeguard crops.

Precision farming, or precision agriculture, is another farming management technique aimed at optimizing field-level management through technologies like satellite imagery and information technology. It aids farmers' ability to locate their precise position in a field using satellite positioning systems.

Farmers know that the essential crop protection products they use to defend against insects, weeds and plant disease must always be used responsibly and judiciously to see the most benefit. They manage their pesticide activity accordingly, in an integrated pest management plan, to protect not only their crops, but the environments they grow in and beneficial insects, such as honeybees, that they depend upon.



Meeting the Three Goals of Sustainability for Next Generation's Farmers

Ultimately, modern agriculture is sustainable agriculture. Modern agricultural practices enable farmers to meet ALL three goals of sustainability: conserve and protect natural resources; meet the food and fuel needs of a growing population; and be financially viable for both growers and consumers.

Crop protection products specifically contribute to sustainability and conservation in a number of ways. Products such as insecticides, herbicides and fungicides:

- Help conserve natural lands by enabling the optimization of existing farm space, leaving natural lands free from farm use;
- Preserve water quality and aquatic habitats by reducing soil erosion;
- Protect native plants and animals from invasive species;
- Are part of Integrated Pest Management practices, which allow farmers to reduce energy use and environmental risk while maintaining quality output and helping improve water, air and soil quality.

Farmers know that with these sustainable practices, future generations of growers will be able to supply the world's rapidly growing population with sufficient food while also serving as environmental stewards.

Growers, and the crop protection industry, know that the land provides us with its bounty, and is a livelihood and legacy to be preserved not only for the next generation of farmers, but for the animals and people who live on it.

