



Dangers of Biopharming

The Government's Failure to Protect Public Health and the Environment

BIOPHARMING-THE GENETIC ENGINEERING OF PLANTS AND ANIMALS TO PRODUCE PHARMACEUTICALS-HAS RECENTLY COME UNDER INTENSE SCRUTINY FROM ENVIRONMENTAL GROUPS, PUBLIC HEALTH ORGANIZATIONS, AND FARMERS ALIKE. BIOPHARMING'S POTENTIAL IMPACTS ON WILDLIFE, CROPS, AND HUMAN HEALTH HAVE NOT BEEN ADEQUATELY STUDIED, BUT THE FEDERAL GOVERNMENT HAS ALLOWED OPEN-AIR TESTING OF EXPERIMENTAL GE CROPS WITHOUT CONSIDERING THE RISKS TO THE PUBLIC. A COALITION OF GROUPS, REPRESENTED BY EARTHJUSTICE, IS NOW CHALLENGING THE GOVERNMENT'S ACTIONS.

USDA has authorized corporations such as Monsanto, DuPont, ProdiGene, and Dow to conduct hundreds of field tests of biopharm crops genetically engineered to produce materials such as blood clotting agents, blood thinners, experimental animal vaccines, industrial enzymes, antibodies, and a potent abortion-inducing compound.

None of these biopharm crops has been approved for human or animal consumption, or even for general release into the environment. Despite 12 years of open-air field testing, not a single plant-produced biopharm drug has been approved by the FDA. Yet USDA allows these tests to be conducted in open fields, conceals the trials' locations from the public, and in most cases, refuses to disclose to the public the substances being grown.

DANGERS OF BIOPHARMING

Scientific reviews indicate that biopharming poses a number of risks to human health and the environment. It may:

- ◆ Spread new and unwanted compounds into the air, water, and soil, as well as into foods and beverages, potentially creating a public epidemic of disease, and allergic reactions such as life-threatening anaphylactic shock.

- ◆ Pose occupational safety hazards, since chemicals from biopharm crops may cause harm to humans through inhalation, unintended ingestion and skin contact.
- ◆ Persist in the environment and bioaccumulate in wildlife, plants, and soil microorganisms leading to both acute and chronic toxicity and major ecological disruption.
- ◆ Contaminate wild and food plants with alien genetic material through cross-breeding.



GE crops such as soybeans are often tested in open-air plots (USDA).

IMPACTS ON AGRICULTURE

Economically, any GE crop can harm organic farmers because crops contaminated with GE material may not be marketed as "organic," and farmers of conventional crops will

be harmed because many nations will not import crops that might be contaminated with GE material. Many farmers have been sued by the industry for selling crops that contain traces of proprietary GE material, even though the crops were accidentally contaminated without the farmer's

knowledge. Farmers are kept in the dark about biopharm experiments taking place in their vicinity, and other members of the public are unaware that experimental drugs and chemicals could contaminate their food.

Contamination of food crops with biopharmaceutical crops has already occurred. In the fall of 2002, USDA had to quarantine and destroy 500,000 bushels of soybeans in Nebraska meant for human consumption that had been contaminated with corn genetically engineered to produce a pig vaccine. At about the same time, USDA ordered that 155 acres of corn in Iowa be pulled and burned because of potential contamination from biopharm crops. The grower in both instances, ProdiGene, is now conducting open-air field tests in Hawai'i—which has a large seed-corn industry that sends its product all over the world



Unintended contamination of GE material in corn has already occurred because of lax regulations (USDA).

THREAT TO THE ENVIRONMENT

Biopharming also poses potential risks to wildlife and plant species. In Hawai'i, where open-air biopharm testing is prevalent and increasing, GE substances might spread to native species and disrupt the already fragile environment. Hawai'i has over 300 endangered species—more than a third of all U.S. endangered species and more per square mile than anywhere else on earth. Approximately 97 percent of all native species in Hawai'i are found nowhere else. Open-air biopharm field trials risk catastrophic impacts to these species.

RISING TO THE CHALLENGE

Environmental and public health groups are increasingly alarmed at the lack of government safeguards regarding biopharming. USDA's regulations cannot adequately assure that biopharm crops do not contaminate soil or food supplies, harm humans or wildlife, or cross-breed with wild or other farmed plants. Earthjustice is now representing a coalition of groups in a legal battle to convince the USDA to adopt stricter measures.

The lawsuit will try to compel the USDA to prepare an Environmental Impact Statement, to consult with the Fish and Wildlife Service as required by the Endangered Species Act on the effects of growing biopharm crops on listed species, and to develop regulations that adequately protect public health and the environment.

Earthjustice believes that the USDA's current approach towards regulating biopharming exposes the public to unnecessary risks. Without comprehensive, effective regulations in place, any purported benefits from biopharming could be overshadowed by unintended consequences for public health and the environment.

COALITION MEMBERS

Center for Food Safety

Friends of the Earth

KAHEA

Pesticide Action Network North America



Earthjustice and its coalition members are trying to prevent GE materials that have not been approved for human consumption from contaminating our food supply.