

Genetically modified organisms

Human Health Risk

Ecological Risk L

Socioeconomic Risk L

For this report, genetically modified organisms (GMOs) are plants used in agriculture that are modified by applying laboratory techniques of biotechnology. The intent of their production is to either increase yield, decrease pesticide use, decrease farm labor or increase nutritional value. Potential negative effects are cross pollination with wild species transferring unwanted genetic characteristics, and development of pest immunity to pesticides. There is also a general concern about unintended consequences of introducing species that have not evolved with natural controls in place to stop their spread.

What's at risk?

There may be human health impacts such as increased allergic responses or the encouragement of new bacteria and viruses. Economic impacts might be due to changes to agricultural and food processing industries. Ecological and psychological effects may arise if genetic material transfers to non-beneficial species. Non-target organisms may also be impacted by use of GMOs.

What are the ecological impacts in New Jersey?

The current effects in New Jersey are unknown due to lack of data. Potential ecological impacts include adverse effects on non-target organisms, development of pest immunity, and genetic exchange between transformed organisms and unaltered organisms. Information indicates low risk to tested species with the exception of butterfly species. These species may be at a low probability of risk near the edge or within corn fields. Overall, the risk from GMOs was deemed to be low. Data on the extent of GMO use in New Jersey should be collected and potential impact areas identified for study.

What are the socioeconomic impacts of GMOs in New Jersey?

The largest category of risk identified is currently psychological impacts. A 1993 poll revealed a minority of New Jersey citizens felt strong worry about GMOs. More recent national data suggest Americans are far less worried about GMOs than Europeans. There are no current large scale economic or ecological problems resulting from the use of GMOs but the potential exists for possibly devastating effects. There is significant disagreement regarding the likelihood of such problems.

What's being done?

The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) reviews applications each year from biotechnology companies that wish to field-test new transgenic plants or to have a plant deregulated. EPA regulates plant-incorporated protectants (i.e., pesticidal substances); that is, EPA regulates the pesticide protein and its genetic material, but not the GMO plant itself.