

CONTAMINATING THE WILD?

Press Summary



Before genetically engineered (GE) crops are marketed, developers conduct field trials of these experimental GE varieties for several years. Field trials include all outdoor cultivation of experimental GE crops, and thousands have been planted across the country since the mid-1980's. Because research on these crops is incomplete, their risks are often largely unknown. But a new report, "*Contaminating the Wild?*," from the Center for Food Safety shows that despite unknown risks, U.S. Department of Agriculture (USDA) regulations cannot be relied upon to keep experimental genes from escaping from field trial crops into related wild plants. This process, called "gene flow," occurs when pollen from experimental crops fertilize wild species related to crops such as wheat, grapes or carrots.

Experimental genes that make their way into crop wild relatives may become a permanent part of the landscape because, unlike most crops, these wild plant species can grow without cultivation by farmers. Anyone who has seen fields of Queen Anne's lace (a wild relative of carrots) can understand how prolific these wild relatives can be. And once they escape from crops, some of these genes could spread through the environment, where they may harm animals and plants.

As noted in a recent critical report by the USDA Inspector General (IG), for the vast majority of field trials issued as "notifications," gene confinement measures are rarely reviewed by USDA prior to planting. "*Contaminating the Wild?*" also shows that risk assessments are not generally performed, and where risks are examined, the process is usually superficial.

USDA has assured the public that the risks from experimental genes are insignificant because they are confined to the field trial site. But the many cases of contamination from GE crops seriously challenge this assertion. Most startling was gene flow from a field trial of transgenic herbicide-tolerant creeping bentgrass that exceeded the 900 ft USDA-accepted separation from wild relatives by at least 13 miles. "*Contaminating the Wild?*" asks whether gene flow could similarly occur from some of the thousands of previous field trials, and by extension, whether gene flow may happen in the future. The report considers these questions through a detailed examination of the scientific literature and data from previous field trials, and concludes that untested genes from field trials of crops with wild relatives may breach their confinement and spread in the environment.

THE REPORT FINDS THAT:

- *There have been at least 1710 field trials of 20 types of crops in states where one or more wild relatives grow.* These have included 170 for creeping bentgrass, 332 for wheat and 107 for rice, among other crops that have serious weeds as wild relatives.
- *The USDA/APHIS confinement standards cannot ensure that permanent gene flow will be prevented.* Review of the scientific literature and USDA Environmental Assessments shows that gene flow can occur beyond the confinement distances accepted by USDA.
- *Many field trials contain genes that may provide an advantage to wild relatives, and can thereby spread through the wild population, even if initial gene flow occurs at low levels.* For example, there have been about 600 field trials for biotic and abiotic stress resistance genes, identified by the National Academy of Sciences as having properties that may facilitate spreading through wild relatives.
- *As with the escaped creeping bentgrass example, many field trials are large, often hundreds or thousands of acres, facilitating gene flow.* These large trials produce much more pollen than small trials, and can cause more gene flow at longer distances. There have been 290 field trials of 50 or more acres for crops with wild relatives.
- *The vast majority of field trials, currently about 95%, are conducted under simplified notifications that require no Environmental Assessment.* These notifications require only that any problems noticed during the field trials are reported to APHIS. But as widely recognized, without specific testing for environmental harm, most problems may not be detected.

The risks from gene flow in the future may be even more troubling as multiple genes, genes with less predictable consequences, and more powerful genes (for example designed to kill more types of pests), and new types of plants such as engineered forest trees, are developed.

USDA is currently revising its regulations of GE crops. This is an opportunity to strengthen the regulation of field trials to prevent gene flow or harm if gene flow occurs. The report therefore makes several recommendations for strengthening confinement requirements and improving risk assessment. Given the large number of field trials, many of which contain genes that may spread in wild relatives, and current leaky confinement requirements, permanent escape of largely untested experimental genes is virtually inevitable unless USDA substantially improves its confinement and safety testing requirements.