Biotechnology Facts

Office of the United States Trade Representative ***www.ustr.gov***
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Agricultural Biotechnology: Food Safety and Environmental Benefits

Food Safety

- The European Commission's Directorate-General for Research has stated that, "Research on the GM plants and derived products so far developed and marketed... has not shown any new risks to human health or the environment... Indeed, the use of more precise technology and the greater regulatory scrutiny probably make them even safer than conventional plants and foods." (European Union, Directorate General Research Press Briefing, October 8, 2001)

- "GM foods available on the international market have undergone risk assessments and are not likely to present risks for human health in any other form than their conventional counterparts." (World Health Organization, "Modern food biotechnology, human health and development: an evidence-based study", June 2005) http://www.who.int/foodsafety/biotech/who_study/en/

- "Thus far, in those countries where transgenic crops have been grown, there have been no verifiable reports of them causing any significant health or environmental harm." (UN Food and Agricultural Organization, "The State of Food and Agriculture, 2003-04") http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/006/Y5160E/Y5160E00.HTM

Environmental Benefits

- **Pesticide Reduction**: According to the National Center for Food and Agricultural Policy (NCFAP), adoption of biotech in the United States has reduced pesticide use in crops in 2004 by 62 million pounds. This is an additional drop in pesticide use of 15.6 million pounds from 2003; a 34 percent reduction. (http://www.ncfap.org/whatwedo/biotech-us.php) Further, according to ISAAA, the cumulative reduction in pesticides for the period 1996 to 2004 was estimated at 172,500 metric tons, which is the equivalent to a 14% reduction in the associated environmental impact of pesticide use on these crops, as measured by the Environmental Impact Quotient – a composite measure based on the various factors contributing to the net environmental impact of an individual active ingredient. http://www.isaaa.org/

- "Bt cotton is spreading very rapidly in China, driven by farmers' demand for technology that will reduce costs of pesticide application, and allow them to use their time more profitably. The evidence of 5 years' experience with Bt cotton is that this technology is extremely valuable to over 4 million smallholders in China. They will be able to increase their yield per ha, and reduce pesticide costs, the time spent spraying dangerous pesticides, and the number of incidences of pesticide poisoning." (Carl E. Pray, Jikun Huang, et.al., "Five years of Bt cotton in China – the benefits continue", The Plant Journal, 2002, Vol 31, No 4.) http://www.blackwellpublishing.com/plantgm/Pray.pdf

- **Soil & Water Conservation**: No-till acreage--farmland in which plowing of soil is reduced or eliminated--has increased by 35 percent since biotech crops were introduced. As a result, biotech crops have reduced soil erosion by 1 billion tons per year, according to the Conservation Technology Information Center (CTIC). Further applications of conservation tilling using biotech crops could save up to $3.5 billion in water treatment and storage costs per year. http://www.ctic.purdue.edu/CTIC/Biotech.html

- "In the first piece of research into how genetically modified (GM) herbicide tolerant crops could be used to benefit the environment, scientists from Broom's Barn Research Station in Suffolk show that creative use of GM crops could bring back increasing numbers of endangered wildlife and birds such as skylarks and finches. This new research, to be published in Proceedings B, a learned journal produced by the Royal Society, suggests that GM herbicide tolerant crops could be a powerful tool in developing sustainable farming systems in the future." (Royal Society Press Release, January 15, 2003, announcing the February 2003 publication of the article "*A novel approach to the use of genetically modified herbicide tolerant crops for environmental benefit*" in the Proceedings of The Royal Society.)

- "Biotechnology helps farmers produce higher yields on less land. This is a very environmentally favorable benefit. For example, the world's grain output in 1950 was 692 million tons. Forty years or so later, the world's farmers used about the same amount of acreage but they harvested 1.9 billion tons -- a 170% increase! We would have needed an additional 1.8 billion hectares of land, instead of the 600 million used, had the global cereal harvest of 1950 prevailed in 1999 using the same conventional farming methods. If we had continued practicing conventional farming, we would have cut down millions of acres of forest, thereby destroying wildlife habitat, in order to increase cropland to produce enough food for an escalating population. And we would have to use more herbicides in more fields, which would damage the environment even more. Technology allows us to have less impact on soil erosion, biodiversity, wildlife, forests, and grasslands." (Dr Norman Borlaug, Nobel laureate) http://www.actionbioscience.org/biotech/borlaug.html