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Biotechnology Shows Promise for Europe

New study documents more food, lower production costs

PARIS (December 1, 2003) — Biotechnology could help control plant diseases, weeds and insect pests, which cause European farmers to suffer losses and use intense farming methods, resulting in more food production at lower costs and with less use of pesticides, according to a comprehensive study released today.

The nine case studies compiled by the National Center for Food and Agricultural Policy (NCFAP) document that crops developed through biotechnology can help European farmers reap an additional 8.5 billion kilograms (19 billion pounds) of food and improve farm income over €1.6 billion, while using 14.4 million fewer kilograms (32 million pounds) of pesticide.

"New technologies like biotech crops can keep farmers competitive in an ever-changing global market," says Leonard Gianessi, program director for NCFAP, a nonprofit, Washington, D.C.-based research organization. "The potential impacts for Europe have not been quantified in this way before."

NCFAP released three case studies earlier this year. Today, six more were added, totaling nine. The case studies, which include insect resistant, herbicide tolerant, virus resistant and fungal resistant varieties, show that crops like virus resistant stone fruit (peaches, apricots and plums) could save the industry in certain parts of Italy, Austria, Spain, Greece and many other growing areas while crops like herbicide tolerant wheat could reduce pesticide use by 1.4 million kilograms.

Previous case studies show that crops like insect resistant corn, currently planted in Spain on a small scale, have the potential to increase yields in Europe by 1.9 billion kilograms (4.2 billion pounds). Meanwhile, crops like biotech virus resistant tomatoes could allow production of the San Marzano tomato to continue in the Campania region of Italy, which is a variety of particular pride.

"These case studies show every country stands to benefit from development of the new varieties evaluated in this study," Gianessi says.

NCFAP researchers say that France would see the greatest production increase at 2.6 billion kilograms (5.7 billion pounds), while Italy would see the greatest increase in income with a €474 million change closely followed by France, which would see income increase by over €300 million. Pesticide use would also go down, with French growers seeing the largest impact, a reduction of 3.2 million kilograms.

"In these nine cases, biotechnology provides equivalent or better control of harmful pests at reduced costs." Gianessi said.

The release of the six case studies is the second in a series that NCFAP will complete in the next year. The complete study will include 15 case studies of fruits, vegetables and field crops where biotechnology solutions to major pest problems in Europe are under development. Specifically, the six new case studies show:

- European wheat yields are the highest in the world due to use of modern technology including herbicides. Herbicide tolerant wheat could reduce weed control costs by €90 million.
- Recent U.K. Farm Scale Evaluations (FSE) determined that biotech herbicide tolerant rapeseed would improve weed control. The FSE experiments did not estimate the impacts on weed control costs and rapeseed yield. NCFAP estimates a yield increase of six per cent and a cost reduction of 25 per cent.
- In Europe, recent bans of the popular maize herbicide atrazine have resulted in tremendous production cost increases. Biotech herbicide tolerant maize could lower costs by €15 per hectare.
- Weed control in rice can require up to 20 kilograms of herbicides per hectare, at a cost of €200 per hectare. Biotech varieties could achieve equivalent weed control with as little as one kilogram of active ingredient while reducing costs by 50 per cent.
- The Sharka virus has led to the destruction of millions of European stone fruit trees. Virus resistant trees developed in Austria could prevent losses of over 160 million kilograms annually.
- Mediterranean tomato production is threatened by insect-spread viruses, leading to broad use of insecticides. Virus-resistant tomatoes developed in Italy could prevent viral infections and lead to significant reductions in insecticide use.

The case studies, which were reviewed by plant biotechnology experts from European academic and government institutions, are the most comprehensive evaluation of the potential impact on European agriculture of crops developed through biotechnology. The complete case studies are available on the Internet at www.ncfap.org. Monsanto, Syngenta, BIO and EuropaBio funded the project.

The National Center for Food and Agricultural Policy is a private, nonprofit, non-advocacy research organization based in Washington, D.C. Originally established in 1984 at Resources for the Future, the center became an independent organization in 1992. NCFAP researchers conduct studies in four program areas: biotechnology, pesticides, U.S. farm and food policy, and international trade and development.