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HELPING THE WORLD GROW MORE FOOD

The world's population exceeds 6 billion people today, more than double the number just a half century ago.¹ In the U.S., population has tripled over the last century.² Growing populations put tremendous pressure on natural resources such as water and land. The challenges facing farmers in the developing world are greater than ever.

The benefits of biotechnology are passed on through seeds or plant cuttings, so that farmers anywhere around the world can easily adopt and reap the benefits of the technology. That is why biotechnology is particularly attractive to scientists and rural development experts in poor countries where most of the people farm for a living. In 2007, 12 million farmers in 23 countries—12 developing and 11 industrialized markets—planted food and fiber biotech crops. The vast majority of which—11 of those 12 million farmers—were small holder or resource-poor farmers from developing countries.³

Biotechnology helps farmers grow more and better food worldwide:

- **Pest-resistant eggplant will boost yields, lower costs**

for resource-poor farmers – Researchers at Cornell University are working to develop an improved eggplant that is resistant to the fruit and shoot borer (FSB), a highly destructive pest that accounts for up to 40% of eggplant crop losses each year in India, Bangladesh, the Philippines and other regions of South and Southeast Asia. The new eggplant could be ready by 2009, and could help farmers avoid devastation while reducing costs for poor consumers.⁴

- **Vitamin-enhanced golden rice** – Biotechnology researchers are enhancing rice—a staple food for the poor worldwide—to provide more beta carotene, which stimulates the production of Vitamin A.⁵ The World Health Organization estimates that millions of children worldwide may be suffering from Vitamin A deficiency, which can cause irreversible blindness. A lack of Vitamin A also weakens the body's ability to ward off infection and minor illness.⁶ By introducing the building blocks of Vitamin A into rice, researchers are attempting to address the problem affordably and on a global scale.

- **Protein-rich potatoes** – Biotechnology researchers are developing a protein-rich potato that is designed to combat malnutrition.⁷ While potatoes have relatively low levels of protein in comparison to other crops like soybeans, they do contain most of the vitamins needed for



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survival and are a relatively inexpensive food source. Potatoes can be grown in a variety of climate and soil conditions, making them an important crop for the poor worldwide.

These are only some examples of the new and exciting developments in biotechnology to help the world's farmers meet demands for a safe, sustainable food supply. Improved biotech cabbage, tomatoes, corn and other crops are being grown commercially or are in field trials today. These enhanced plants are designed to resist pests, use water more efficiently, control the growth of weeds and provide other improvements to help farmers around the world.

The ease with which biotech crops can be adopted—through a seed or plant cutting—makes biotech crops an attractive and accessible choice for farmers worldwide. The enormous potential for biotechnology to help the world grow more food has made research an important part of the comprehensive strategy of such global institutions like the United Nations Food and Agriculture Organization to help reduce poverty worldwide.

1 United States Census Bureau International Database.
(<http://www.census.gov/ipc/www/idb/worldpopinfo.html>)

2 United States Census Bureau Historical National Population Estimates.
(<http://www.census.gov/popest/archives/1990s/popclockest.txt>)

3 James, Clive. Executive Summary, "Global Status of Commercialized Biotech/GM Crops: 2007" at p. 3-5.
(<http://www.whybiotech.com/html/pdf/ISAAAExecutiveSummary.pdf>)

4 Ramanujan, Krishna. "Cornell helps develop pest-resistant eggplant, the first genetically modified food crop in South Asia," Cornell University Chronicle Online, Sept. 19, 2007.
(<http://www.news.cornell.edu/stories/Sept07/EggplantBt.kr.html>)

5 MacPherson, Kitta. "A Grain of Hope for the Starving," New Jersey Star Ledger, Jan. 6, 2002.
(<http://www.nj.com/specialprojects/index.ssf?specialprojects/rice/rice1.html>)

6 United Nations Children's Fund Statistics on Vitamin A Deficiency.
(<http://childinfo.org/areas/vitamina/>)

7 "GM Potato Could Improve Child Health," BBC News, Jan. 2, 2003.
(<http://news.bbc.co.uk/1/hi/health/2617149.stm>)

ABOUT THE COUNCIL FOR BIOTECHNOLOGY INFORMATION

The Council for Biotechnology Information communicates science-based information about the benefits and safety of agricultural and food biotechnology to sustainable development. Sustainable development seeks to balance and integrate immediate and long-term community needs. It helps enhance our quality of life today, as well as to protect, preserve, and fulfill our needs in the future. Sustainable agriculture is a key component of sustainable development, particularly because it allows for economically and environmentally sustainable agricultural practices. In the United States agricultural biotechnology is contributing today to sustainable agricultural practices, and it has the potential to make even greater contributions in the future through production of biofuels to help meet energy needs; development of drought-tolerant plants to better preserve and manage water resources; and increased crop production to feed our nation and the world's growing population. CBI members are the leading agricultural biotechnology companies.

Council for Biotechnology Information
1201 Maryland Avenue S.W., Suite 900 | Washington, D.C. 20024-2149
Tel: 202-962-6672 | www.whybiotech.com



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