AGRICULTURAL BIOTECHNOLOGY BRIEFER

Genetically modified organisms (GMO) are microorganisms, plants, or animals, in which the DNA has been engineered using modern molecular biology. Other names include transgenic, genetically engineered, or living modified organisms (LMO). A number of genetically engineered agricultural crops are commercially available including Bt-cotton (insect resistant), Bt-corn (insect resistant), and Roundup Ready™ soybeans and canola (tolerant to a particular herbicide).

Biotech in U.S. Food & Agriculture:

- US produces 68% of the global acreage planted with GM crops.
- In 1999, approximately 40% of corn acreage and 60% of soybean in the U.S. were planted in genetically engineered varieties.
- Corn and soybeans are two of the most prevalent crops in the food supply and are found in a wide variety of processed food items.
- U.S. does not require segregation of GMO from "non-GMO" foods and thus any commodity shipment or processed food product is likely to be co-mingled with GMOs.

Safety for Human Consumption:

- In the U.S., GM crops are subject to a rigorous safety review by the USDA, FDA, and EPA.
- Foods from GM crops are currently be eaten by millions of Americans and to date, no evidence has shown any negative health implications. Americans were the world's guinea pigs as these crops first entered U.S. foods more than 5 years ago.
- Food that is exported from the U.S., whether commercially or through food aid, is the same food eaten by Americans in terms of its GMO content. There is not "selective dumping of GM foods on developing countries."
- Genetically modified food crops have been approved for human consumption by governments all over the world, including Argentina, Australia, Brazil, Canada, the European Union, Japan, Mexico, Russia, South Africa, South Korea, India, China, and Uruguay.
- It is notable that South Africa has approved both yellow (animal feed) and white (human food) GM maize.

Safety for the Environment:

- Potential environmental impacts for crops grown in the U.S. are reviewed by USDA and EPA.
- However, U.S. environmental analysis may not be directly transferable to other countries given their different farming systems and biodiversity.
- Potential concerns center around impacts on biodiversity from the flow of genes from GM crops to either native biodiversity or agricultural land races or from potential impacts of insect-resistant GM plants on animals other than agricultural pests (non-target species).
- Gene flow is often the primary concern of developing countries – that the genetically engineered genes may contaminate other farmer's fields or wild plants in their centers of

origin. However, the consequence of this happening does not necessarily mean there will be significant damages. Genes naturally flow (through cross-pollination) from traditional crops or modern hybrids as well.

- In the absence of an environmental review, however, one cannot say with certainty that GM crops approved in the U.S. will not pose environmental risks if planted in developing countries.

Food Aid:

- Food safety: (see points above) we can say with confidence that this has been rigorously reviewed by U.S. regulatory agencies and that the same food is being eaten by Americans.
- Environmental safety: a potential concern with whole grain, which may be planted as seed. This is not an issue for processed products such as corn meal or corn-soy blend. See points above.
- Acceptance of whole grain food aid depends upon weighing a potential environmental risk against the consequences of not accepting this kind of food aid.
- The U.S. will not certify "GMO-free" food aid as it does not required this for our domestic food supply and has judged GM foods to be as safe as ones from traditional crops.

USAID Biotech Policies & Practices:

- USAID will not transfer any GM materials intended for planting without the host government's explicit advanced informed consent and an independent assessment of the potential environmental or safety risks.
- USAID remains convinced that all appropriate technologies, including GM crops, should be employed to reduce hunger, malnutrition, and poverty. In addition to supporting R& D efforts to develop better agricultural crops for developing countries, USAID also supports activities to raise the capacity of governments to evaluate and manage the safety of GMOs independently. It also supports efforts to build awareness among decision-makers as well as among the public about the benefits of GMOs and the systems needed to adopt them.