Benefits of Plant Biotechnology

Plant biotechnology delivers significant and tangible benefits to farmers, consumers, and ecosystems around the globe. It has improved farm incomes by over one hundred billion dollars since 1996 through increased crop yields and reduced input needs; protected natural habitats by increasing production on existing cropland; and allowed for greater use of conversation tillage, improving both waterways and reducing soil erosion. Biotech crop varieties have significantly increased plant productivity while reducing farmers' footprint on the environment.

In Korea, the benefits of biotechnology have meant increased national food security, with safe alternatives for manufacturers and affordable food for Korean consumers. Korea is not a self-sufficient nation; it must rely on foreign imports of agricultural products to feed its families and communities. In 2012, Korea grew enough rice to meet 86.1% of its needs.[i] For other crops, however, it fell desperately short: growing some 26.7% of the soybeans it needed in 2012, 2.5% of the canola and less than 1% of the corn.[ii] Biotechnology has made it possible for Korea to import these crops, essential for food, feed, and bio-fuel, at prices that manufacturers and, ultimately, consumers can afford. That's both good for the Korean economy and good for the Korean people.

In terms of price, productivity, and environment, consumers in Korea, and the world over, are reaping the benefits of plant biotechnology.

» FAST FACTS

Worldwide:

- Global farm incomes increased by US$116.6 billion from 1996-2012 due to higher yields and reduced input costs from biotech crops.[vi]
- Biotech crops have protected natural habitats by increasing production on existing farmland, thus saving 123 million hectares of additional land from being put into agricultural production.[vii]
- Since 1996, biotech crop yields have added 122 million tons of soybeans, 230 million tons of maize, 18.2 million tons of cotton and 6.8 million tons of canola to global production.[vi]
- Biotech crop adoption has reduced global carbon dioxide emissions by 27 billion kilograms since 1996, equivalent to removing 11.88 million cars from roads.[vii]

Korea:

- Ranking 29th out of 34 OECD nations in self-sufficiency, Korea produces only 23.6% of the agricultural grains it needs.[iii]
- On January 1, 2008, Korea approved the import of LMO agricultural products for trial research, food, and feed use and to provide better food security for the nation.
- In 2013, 8.8 million tons of LMO agricultural products were approved for import into Korea, at a cost of 2.9 billion USD.[iv]
- From 2008 to 2011, Korea imported LMO soybeans at an average cost of 507 USD per ton. It imported non-LMO soybeans at an average cost of 678 USD, representing a 33.7% premium.[v]

i Parliamentary Inspection report, Ministry of Agriculture. 2013.

ii Song, Yongho, Lee, Woo-Kyun, Kwak, Hanbin, Kim, Moonil and Yang, Seung-Ryong. Vulnerability Assessment of Maize and Wheat Production to Temperature Change - In Case of USA and China. Dept. of Environmental Science and Ecological Engineering. Climate Change Research, Vol. 4, No. 4, pp. 371～384. 2013.

ii Parliamentary Inspection report, Ministry of Agriculture. 2013.

iv Clearance status on LMOs used for food and feed. Korea Biosafety Clearing House. http://www.biosafety.or.kr/03_data/sub0303.asp

v LEE, Bu-hyung. Study on the changes and prospects on domestic and overseas supply/demand environment for major grains. Hyundai Research Institute. 2012.

vi Brookes G, Barfoot P. Economic impact of GM crops: The global income and production effects 1996–2012. GM Crops and Food: Biotechnology in Agriculture and the Food Chain 2014.

vii Barfoot P, Brookes G. Key global environmental impacts of genetically modified (GM) crop use 1996–2012. GM Crops and Food: Biotechnology in Agriculture and the Food Chain 2014.

The Global Industry Coalition (GIC) receives input and direction from trade associations representing thousands of companies from all over the world. Participants include associations representing and companies engaged in a variety of industrial sectors such as plant science, seeds, agricultural biotechnology, food production, anima agriculture, human and animal health care and the environment.