

Press Release

Economic impact after 15 years of GM crops in Argentina

Agricultural biotechnology afforded the country over 70 billion dollars

Since its introduction in 1996, agricultural biotechnology generated 72.36 billion dollars and created 1.82 million jobs in Argentina. The advantages of early adoption and the challenges to stay on the top list.

Since 1996, when glyphosate-tolerant soybean was introduced, Argentina has been one of the leading countries in the utilization of genetically modified (GM) crops, reaching 22.9 million hectares planted in the last growing season. The adoption process of these technologies has been fast and steady, with an unprecedented dynamics which allowed that GM varieties currently represent practically all the planted area with soybean, 86% in the case of maize and 99% for cotton.

According to a recent study carried out by Dr. Eduardo Trigo for ArgenBio - the Argentine Council for Information and Development of Biotechnology – the gross benefit generated by this adoption process for the period 1996-2010 reaches 72,363 million US dollars. These benefits were estimated using SIGMA, a mathematical model developed by INTA (National Institute for Agricultural Technology) that uses data from the Technological Profile of Argentina's Agricultural Sector (INTA), with additional information provided by the Ministry of Agriculture, Livestock and Fisheries, ArgenBio, INDEC (National Institute of Statistics and Census) and FAO.

Economic benefits, by crop

- In the case of glyphosate-tolerant soybean, the benefits mounted to 65,153 million US dollars, 3,231 million attributable to a reduction in production costs (mainly due to less tillage and reduced applications of selective herbicides required by conventional varieties) and 61,917 million due to the expansion of the planted area. Regarding the distribution of the total benefits, 72.3% went to farmers, 21.3% to the National Government– collected through export tax and other taxes – and 6.5% to technology providers (seeds and herbicides).
- In the case of maize, insect resistance and herbicide tolerance technologies gave benefits for a total amount of 5,375 million US dollars, distributed as follows: 68.2% to growers, 11.4% to the National Government and 20.4% to technology providers (mainly seeds).
- Finally, in the case of insect-resistant and herbicide-tolerant cotton, total benefits reached 1,834 million US dollars that went mainly to farmers (96%), with 4 % going to technology providers (seeds and herbicides).

More benefits

In addition, and given the importance of Argentine soybean production worldwide, this study estimated the global impact in terms of savings that the adoption of such technology by Argentine farmers has had on consumer expenditure (by reducing the global price). The total cumulative figure for 1996-2011 was estimated at about US\$ 89 billion. In terms of prices, figures show that if this adoption process had not occurred, the international price of soybean in 2011 would have been 14% higher than it actually was.

On the socio-economic side, the impact that GM technologies have had on job creation was assessed. Based on these estimates, the generation of 1.82 million jobs by the Argentine economy along these 15 years could be attributed to the use of GM technologies.

Dr. Eduardo Trigo's work also analyzed some environmental impacts related to GM crops, with special emphasis on the particular synergy between the expansion of these crops and no-till farming practices, and its positive impact on soil structure and the efficient use of energy.

Future benefits.

Looking ahead and using the same methodology applied for the retrospective analysis, the study estimates the potential benefits that could be generated by two different types of GM crops: an herbicide tolerant and insect resistant soybean, and a drought-resistant wheat, under three different price and adoption scenarios. Results show that, if these technologies were available as from the next growing season, accumulated benefits in the 10 following years could be 9,131 to 26,073 million US dollars for soybean and 526 to 1,923 million for wheat, according to the different scenarios.

“Argentina must remain a leader so as not to miss opportunities”

“One of the characteristics of the adoption process of GM crops in Argentina is the fact that our country has been an early adopter worldwide”, stated Eduardo Trigo, who explained that “the introduction of herbicide-tolerant soybean in our agriculture was made available to farmers practically at the same time as in the American market for which it was originally designed. In these 15 years this has given us an important amount of economic and other benefits, as the study shows.”

“The advantages of being at the front of innovative processes are very clear and, as a consequence, so are the risks or opportunity costs that the country would face if it followed a less dynamic technology adoption process than in the past. Keeping the “early adopter” profile is a strategic issue that should include key topics like regulatory processes, the promotion of investments for the sector and the redistribution of benefits into areas like innovation, economic growth and social welfare”, said the author.

The key to success.

“The biotechnology adoption process in Argentine agriculture has been undoubtedly very successful”, said Gabriela Levitus, Executive Director of ArgenBio. “Not only because our products have been competitive and the international prices have been good, but also because when this technology was made available, the country was ready to adopt it. There were world class breeders, trained and innovative farmers and there was the political will that resulted in the creation of a pioneer regulatory system, which guaranteed the safe adoption of GM crops in our country from the start.

This political will, very clear 15 years ago but quite changeable along the last years, is today strong again; this fact is clearly shown through the new approvals and the recent revision of the regulatory processes boosted by the Ministry of Agriculture, Livestock and Fisheries. Contrary to other times, agricultural biotechnology is now a state policy”, concluded Levitus.

Complete study available at www.argenbio.org

About the author:

Dr. Eduardo Trigo is a senior independent Researcher with the Forges Foundation and CEO Group, both institutions dedicated to research and counseling for the agricultural sector.

About ArgenBio:

ArgenBio (Argentine Council for Information and Development of Biotechnology) is a non-profit organization whose mission is to make available information on biotechnology, contributing to its understanding through education and promoting its development.

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