



Strengthening Support for Biotechnology in the Philippines

Coalition for Agriculture Modernization in the Philippines (CAMP)¹

Biotechnological developments being conducted in the country seek to curb poverty and improve the lives of Filipinos. Indeed, there is an urgent imperative towards strengthening biotechnology in the country. Legislation to streamline complicated and cumbersome biosafety regulations on biotechnology products and provide vigorous support for modern biotechnology to promote environmental and food safety and help reduce hunger and poverty in the Philippines would serve this end.

For example, Bt eggplant, a biotechnology product of the University of the Philippines Los Baños which is designed to reduce the use of chemical pesticides, could have been released for commercial production in the Philippines three years ago. But this was not possible due to strict and time-consuming biosafety regulations. These regulations have been exploited by ideological enemies of modern technology to delay approval of Bt eggplant and other products of biotechnology.

With the current regulatory framework, it takes at least 65 months (almost five and a half years) to complete all requirements for the commercial release of modern biotechnology products. The delays give farmers no choice but continue applying chemical pesticides to their crops for two or three times a week, and consumers continue buying and eating eggplants loaded with pesticides.

BOX I. EGGPLANT FACTS AND FIGURES

- Production data in 2015 (PSA, 2016)
 - » Area planted: 21,000 ha.
 - » Quantity of production: 232,900 metric tons
 - » Value of production: 3.79 billion Pesos
- Expected impacts of Bt Eggplant (Norton and Hautea, 2009)
 - » The Eggplant Fruit and Shoot Borer (EFSB), *Leucinodes orbonalis* Guenee, can account for yield losses of 28 to 64 percent. If the Bt eggplant can control the EFSB, marketable yield can increase by that amount.
 - » Farmers' spraying for EFSB can be reduced by 50 to 60 percent.

¹ The Coalition for Agriculture Modernization in the Philippines, Inc. (CAMP) is a SEC-registered non-stock and non-profit non-government organization of volunteers from the agriculture, agribusiness, industry, academe, government sectors as well as professional groups and international organizations who are driven by a patriotic call to contribute their time, expertise and/or resources to champion agriculture modernization in the country.

A RECORD OF BENEFITS AND SAFETY

Since the 1990s, there has been a strong opposition to genetic engineering that produce genetically modified or biotech crops because of imagined risks to environment, animal and human health. The risks have been studied thoroughly by independent scientists worldwide, leading to the conclusion that the ideologically inspired opposition have no scientific basis. The National Academy of Science and Technology of the Philippines (NAST) states that **“when used properly, genetically modified organisms (GMOs) are good for farmers and good for the environment. GM foods are safe for animals and humans.”**

Along with this, the National Academy of Sciences (Washington DC) cites that **“there is no difference between traditional and biotech crops in terms of risks to human health, nor any negative effects on the environment from biotech crops.”** Similarly, the World Health Organization (WHO, 2014) declares that **“no effects on human health have been shown as a result of the consumption of GM foods by the general population in the countries where they have been approved.”**

The University of Wisconsin made a survey covering 900 reports on studies of biotech crops' impact on human health. The assessment of epidemiological data on the incidence of cancer and other human health problems over time found no substantial evidence that foods from biotech crops were less safe than foods from non-biotech crops. The European Commission (Belgium) concludes that **“from the efforts of more than 130 research projects, covering a period of more than 25 years of research, and involving more than 500 independent research groups, biotechnology, and in particular GMOs, are no more risky than conventional breeding technology.”**

Indeed, for the last two decades, biotech crops contributed to food, feed, and fiber security, and increased productivity by 657.6 million tons and economic gain of smallholder farmers by \$186.1 billion USD (Brookes and Barfoot, 2018). In 2017, up to 17 million farmers in 24 countries planted 189.8 million hectares of biotech/GM crops (i.e., corn, soybean, cotton, canola, sugar beet, alfalfa, papaya, squash, potato, eggplant and pineapple) as reported by the International Service for the Acquisition of Agri-biotech Applications (ISAAA). In the Philippines, about 642,000 hectares of Bt corn were planted last year which greatly improved the livelihood of farmers due to higher yields and lower costs of production.

AN URGENT NEED FOR POLITICAL SUPPORT AND STREAMLINED REGULATION

From the foregoing, the Philippines urgently needs strong political support for biotechnology and biotech crops in order to produce more food for a continuously ballooning population (growing at 2.7 percent per year) on a shrinking area of arable land. Motivated by love of country, Filipino biotechnology scientists work hard to advance knowledge on this field without much fanfare to help address such a challenge. Unfortunately, their scientific work is not widely understood and appreciated and even rabidly opposed by a strong local and global anti-GMO lobby. Strong political support for biotechnology is therefore needed for Filipino scientists to produce high-yielding, pest-resistant biotech crops that could survive frequent floods, droughts, high temperatures, and high salinity in coastal areas due to climate change.

To surmount social and political roadblocks to biotech crops, there is an urgent need to enact a national law that will support and accelerate science-based innovations and technology, reduce time-consuming biosafety regulations, and provide an enabling environment for the widespread utilization of results of biotechnology research in different ecosystems throughout the country.

REFERENCES:

- Brookes, G. and P. Barfoot. 2018. *Farm income and production impacts of using GM crop technology 1996–2016*. *GM Crops & Food* 9:2, 59-89. Taylor & Francis. <https://doi.org/10.1080/21645698.2018.1464866>
- European Commission. 2010. *A Decade of EU-funded GMO Research*. Directorate-General for Research and Innovation Biotechnologies, Agriculture, Food.
- ISAAA. 2017. *Global Status of Commercialized Biotech/GM Crops in 2017: Biotech Crop Adoption Surges as Economic Benefits Accumulate in 22 Years*. ISAAA Brief No. 53. ISAAA: Ithaca, NY.
- National Academies of Sciences, Engineering, and Medicine. 2016. *Genetically Engineered Crops: Experiences and Prospects, Report in Brief*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23395>
- Norton, G.W. and D.M. Hautea (Eds). 2009. *Projected Impacts of Agricultural Biotechnologies for Fruits and Vegetables in the Philippines and Indonesia*. International Service for the Acquisition of Agri-biotech Applications (ISAAA) and the SEAMEO Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEAMEO SEARCA).
- Philippine Statistics Authority. *Philippine Statistical Yearbook*. October 2016.
- World Health Organization. May 2014. *Frequently Asked Questions on Genetically Modified Foods*.



SEARCA Biotechnology Information Center
SEARCA Headquarters, College,
Los Baños, Laguna, Philippines
<http://bic.searca.org>



Coalition for Agriculture
Modernization in the Philippines
UPLB Foundation, Inc.,
A. Aglibut Ave., College,
Los Baños, Laguna, Philippines
<https://campincp.wordpress.com>



International Service for the Acquisition
of Agri-biotech Applications
IRRI DAPO Box 7777, Metro Manila,
Philippines
<http://www.isaaa.org>



Philippine Agriculture and Fisheries
Biotechnology Program
2nd Floor DA OSEC Building,
Elliptical Road, Quezon City,
Philippines
<http://biotech.da.gov.ph/>



Bureau of Agricultural Research
RDMIC Building, Visayas Ave.
cor. Elliptical Road, Diliman,
Quezon City, Philippines
<https://www.bar.gov.ph/>