

# MODERN BIOTECHNOLOGY & AGRICULTURE



A History  
of the Commercialization  
of Biotech Maize  
in the Philippines

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Arthur R. Baria, M.S.

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## MODERN BIOTECHNOLOGY & AGRICULTURE

A History of the Commercialization of Biotech Maize in the Philippines



**Arthur R. Baria, M.S.** was the Regulatory Affairs, Scientific Outreach and Industry Affairs Program Head of Monsanto, Philippines and Chair of the Monsanto Overall Institutional Biosafety Committee (IBC) from 1999 to 2003 and was therefore intimately familiar with the struggle for the commercialization of MON 810. A Bachelor and Master of Science graduate of University of the Philippines Los Banos, he is now the Assistant Vice President and Head, Agricultural Services, Nestle Philippines, Inc

# ABOUT STRIVE FOUNDATION



## *SIKAP/STRIVE FOUNDATION*

Society Towards Reinforcing Inherent Viability for Enrichment (STRIVE), Inc. is a nonstock, nonprofit foundation established in 1994 to engage in techno-managerial and policy research on issues vital to Philippine national development. STRIVE's clients include both policy makers and stakeholders in Philippine development.

Since its foundation in 1994, SIKAP/STRIVE, Inc. has undertaken relevant policy researches and advocacy activities on rice, maize, livestock, fisheries, agribiotechnology, and agribusiness systems with major emphasis on food security, poverty reduction, global competitiveness, sustainable development, and policy reforms in the agro-industrial sectors.

STRIVE also provides assistance to Students' Transformation and Enrichment for Truth-Values Integration and Promotion (STET-VIP), Inc., a national movement that develops the youth as social entrepreneurs to serve communities as value-driven innovators for progress.

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# PREFACE

History will mark December 4, 2002 as a milestone date for Philippine agriculture. It was on this day that the Bureau of Plant Industry of the Department of Agriculture approved the commercialization of MON 810, more popularly known as Bt corn, the very first product of modern biotechnology to be so allowed.

The struggle to reach that point had been difficult and protracted. To break new ground, to explore untrammled areas is challenging enough. The contentious and highly emotional debate that accompanied the journey made the struggle all the more arduous. Sectors that lacked sufficient understanding of the science of modern biotechnology while, rightfully, concerned about the well-being of humans, animals and the environment, tried to prevent the commercialization of genetically modified organisms (GMOs). The scientific community, timid and often averse to cross over into more mundane realities, defended the science of biotechnology in objective and reasoned language. Soon, most of the rest of the stakeholders in agriculture rallied behind the scientists and joined in efforts to reach the general public. Government listened to both sides and then decided, courageously, to side with science and reason.

The battle has been won. The country has established a set of rules and protocols that make possible the propagation of products of modern biotechnology while ensuring the health of humans and animals, and the well-being of the environment.

Today, Bt corn is part of the country's agricultural landscape; so are variants of the GM corn technology. These products are now fixtures of the Philippine corn industry supply chain. Accredited GM corn dealers are located across the major corn producing provinces, ready to sell to ever increasing numbers of GM corn adoptors. The high demand for GM corn seed continues to outweigh supply, making it a sellers' market.

And, farm yields have been increased, and production costs lowered. Corn farmers' incomes have risen.

This book on modern biotechnology and agriculture chronicles the struggle to safely commercialize GMOs in the Philippines, and the aftermath of this struggle. It is organized into nine chapters. The first chapter deals with the structures and protocols established in the Philippines for the introduction, testing and propagation up to the commercialization of biotech products. Chapters 2 and 3, provide the technical details of Bt corn, NK603, Bt 11, and NK603 x MON 810 events and how they complied with the stringent biosafety risk assessments of the NBCP.

Chapter 4 discusses the need for public information on biotechnology and the struggles by both anti and pro GMO during the process of commercial approvals. Chapter 5 describes the corn farming systems within the context of Philippine Agriculture, while Chapters 6 and 7 provide the determinants for GM corn adoption and the empirical evidence on the better performance of GM corn over ordinary hybrid in terms of yield, net farm income, subsistence level carrying capacity, global competitiveness and return on investment.

Chapter 8 deals with the technological challenges to Philippine crop agriculture and discusses the great potential offered by biotechnology. Chapter 9, the last chapter of the book, proposes policy measures that are vital to optimize benefits offered by biotechnology, especially in the corn sector.

We were at, or near, the center of the struggle for the commercialization of Bt corn. In sharing our experiences and our thoughts, it is our hope that the readers would find inspiration so that, as Philippine society finds itself once again at a crossroad, it would find the courage and fortitude to be guided by the truth, no matter what the truth reveals.



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