

# Transgenic crops for development

## The Philippine experience

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Genetic engineering is known to improve crop production by introducing a number of useful traits in conventionally used varieties. Transgenic crops could transform rural economies in developing countries. The article presents an overview of trends in the development and application of genetically modified crops in Philippine agriculture.

### Introduction

Scientists have projected that, within the next two or three generations, people will consume twice as much food as all previous generations put together.

In the Philippines, the present political leadership has adopted food security as a centrepiece programme. To meet the increasing food requirement, it is important to transform traditional Philippine agriculture from one that is resource-based to one that is technology-based.

Biotechnology can be an important tool for this modernization of Philippine agriculture. It can help enhance yield, improve food quality, reduce input and labour costs, produce quality fibre and other agro-based materials, enhance the environment, and reduce dependence on pesticides.

Biotechnology involves any technique that uses living organisms, or parts thereof, to make or modify products, to improve plants or animals, or to develop

microorganisms for specific uses.<sup>1</sup> Karl Ereky, a Hungarian engineer, coined the term biotechnology in 1919 to refer to the science and methods that allow products to be produced with the aid of living organisms. Biotechnology is part of a continuum that began many centuries ago, when plants and animals began to be selectively bred and microorganisms were used to make beer, wine, cheese and bread. In the 1970s, genetic engineering (GE) emerged as a new mode of biotechnology. GE refers to the set of technologies that artificially move functional genes across species to produce novel organisms (called genetically modified organism, or GMOs). GE is applied only when:

- The trait to be introduced is not present in the crop or animal;
- The trait is very difficult to incorporate using conventional breeding methods; and
- It would take a very long time to introduce and/or improve such a trait by conventional methods.

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