

## Editorial

### GMO Revisited

The issue of employing genetically modified organisms (GMOs) in agricultural production has been challenged by environmentalists and a host of other 'green' groups, popularly known as the NGOs. This NGO war seems to be endless and the governments of many countries are reluctant to go ahead with the release of GMO materials for agricultural production, in spite of the fact that the results achieved from many of the breeding programs using GMOs are based on scientific evidence rather than on inflammatory statement and rhetoric.

From the results of using GMOs in agricultural production, it is fair to say that transgenic crop production will not only bring a lot of benefits to farmers at levels unheard of before, but also address the twin issues of ensuring food security and eliminating the ill effects of indiscriminate crop protection.

The first issue of population explosion is really alarming. With the present population of six billions, some say that the figure will rise to eight billions in 2020, while the UNDP's figure give a doubling of the present number in 25 years. Even industrialized countries may suffer food shortage when that time comes. How can the world feed that much population is the issue of great concern to policy makers and food producers alike. At present, 800 million people, mostly from underdeveloped countries, are either starving or malnourished. Thus there is a need to produce more food to feed them, employing all presently available land and any other pieces of land, no matter how unsuitable they are, including forestlands, to grow more crops. As is well known, more and more arable lands are now transforming into wastelands and deserts due to the act of mankind. The more forests have been cleared for development, the worse the environmental problem as the result of the global warming. It is noted that arable land is decreasing by over one million hectares every year. To combat these global population and environmental problems, it is essential for us to develop new crop varieties that have a higher productivity and would require less chemical fertilizers. Transgenic seeds with increased yields also mean less deforestation – reduced conversion of forestlands into farmlands. Hence, they are a means of sustainable agriculture!

The present rate of pesticide usage is also alarming. Estimates by various agencies indicate that out of the US\$ 795 million spent on pest control every year, about US\$ 341 million is going into controlling one species of pest alone - the lepidopterans, which not only attack vegetables, but also cereals, oilseeds and coarse grains. Use of insect resistant crops would provide significant profit to farmers, intangible health benefits to people and a cleaner environment. Even with the spraying of effective insecticides, for example, between 20 to 35% of the tomato produce is lost due to pests; if no spray or ineffective insecticides are used, the loss can vary between 50 and 90%. The loss is a real financial burden to the farmers. The development of crop varieties resistant to viruses and fungi will also bring about reduction in agrochemical use and a higher yield. Are there any other better means of producing these varieties than using GMO materials?

In spite of having protests by NGOs in most countries, there are about 70 commercially important crops identified globally for incorporating genetic traits from other species. Apart from cotton and sugarcane, the transgenic research covers crops such as corn, cotton, tomato, beet, barley, petunia, Bengal gram, and alfalfa. The farmers' keen interest is also evident since the area under GMO crops has increased over 20-fold in the five years since the first GMO introductions albeit with most of them in the US.

In Thailand, even though GMO research is being conducted on a number of crops, not a single seed, thus far, has been permitted to be commercially exploited. It is hoped that the Government will soon permit the exploitation of some of these GMO materials so that we shall be able to continue feeding the world and able to compete with other nations like the US, Australia, China, in producing crops at a competitive price to feed the hungry people around the world.