Food and Agriculture Organization of the United Nations

FAW GUIDANCE NOTE 6

FALL ARMYWORM IN AFRICA: FAO'S POSITION ON THE USE OF GENETICALLY MODIFIED (GM) MAIZE

General Considerations

- FAO recognizes that crop improvement through innovative technologies, including both conventional breeding and modern biotechnologies, is an essential approach to achieving sustainable increases in crop productivity and thus contributes to food security. Scientific evidence has shown that modern biotechnologies offer potential options to improving such aspects as the yield and quality, resource use efficiency, resistance to biotic and abioticstresses, and the nutritional value of the crops.
- FAO is also aware of the public perception and concerns about the potential risks to human health and the environment associated with genetically modified organisms (GMOs). FAO underlines the need to carefully evaluate the potential benefits and possible risks associated with the application of modern technologies.
- FAO emphasizes that the responsibility for formulating policies and making decisions regarding these technologies rests with the Member Governments themselves.

The responsibility for formulating policies and making decisions regarding GMOs lies with the individual Governments. FAO does not interfere in the policies or decisions, including those related to GMOs, of its Member Governments and so it has no position regarding the development, testing or commercial release of GMOs in any specific country. On request, FAO provides legal and technical advice to governments on areas such as the development of national biotechnology strategies and the development of biosafety frameworks.

Considerations related to Fall Armyworm

Regarding the potential use of GM (genetically modified) maize to control the Fall Armyworm in Africa, FAO considers that it is yet too early to draw conclusions.

Bt maize has been demonstrated to decrease damage from Fall Armyworm, but Fall Armyworm populations in the Americas have evolved resistance to some Bt maize varieties.

Nevertheless, more work still needs to be done including conducting trials and collecting data. It must be borne in mind that the Bt maize grown currently in some parts of Africa is aimed primarily at controlling the maize stem borer insect and not the Fall Armyworm.

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Additional technical background information

Maize has been genetically engineered by incorporating genes from the bacterium Bacillus thuringiensis (Bt) that produce insecticidal proteins that kill important crop pests. The use of Bt maize has resulted in some cases in reduced insecticide use, pest suppression, conservation of beneficial natural enemies and higher farmer profits. However, such benefits may be short-lived. Insect populations are able to adapt to Bt proteins through the evolution of resistance. Despite efforts to delay the selection for resistance, many cases of field resistance evolution among maize pests have been demonstrated in Bt maize, including in the Fall Armyworm (*Spodoptera frugiperda*) in the Americas, and in South Africa in the maize stem borer (*Busseola fusca)*.

While transgenic maize has provided some transitory benefits to commercial maize farmers, the context for the vast majority of African maize farmers is quite different. Over 98 percent of maize farmers in Africa are smallholders, growing maize on less than 2 ha of land and typically saving seed to plant the next crop. The use of purchased inputs, including seed, is low. Given the cost of transgenic maize seed, the lack of adequate supply channels, and lack of economic incentives for smallholders to grow such maize (due to the low and volatile prices received), there is currently a low probability that the technology would be used in a sustainable manner by smallholder maize farmers in Africa. Even for commercial maize farmers in Africa, the long-term benefits of transgenic maize were put into doubt when, within two years of deployment, maize stem borers began to show resistance to Bt maize in South Africa.

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