[1290] STRATEGIES FOR MANAGEMENT OF RESISTANCE IN TRANSGENIC MAIZE IN BRAZIL

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The use of Bt transgenic plants can be a new and efficient approach to control some ma
pests in Brazil. However, it should be considered the complexity of the pests and
diversity of climatic conditions that exist. An in-depth evaluation of the effect of the
transgenic plants over the main group of insect pests should be done. Even for
principal pest, *S. frugiperda*, the existence of genetic variability within its natu
population related to the susceptibility of transgenic plant is possible. Plant-pest-natu
enemy balance should be considered to prevent any disruption in favor of the pe
increasing the selection pressure over the transgenic plant and facilitating the build up
resistant pest strain. In order to make the transgenic plant last longer, strategies such as
constant monitoring (susceptible population from different locations should be maintair
in the laboratory for comparison with advance field generations of pests subjected
transgenic plants) or the use of natural enemies should be encouraged. A go
complementary action could be achieved by egg parasitoids such as *Telenomus remus* a
Trichogramma spp. or predators such as the earwig *Doru luteipes* from natural populati
or even through artificial releases from laboratory culture. The successful of the transge
technology also will depend upon joint action involving the private and governmen
institutions working closely together with the farmer. These actions necessarily include
introduction of integrated pest management concepts to be applied to those pest controll
by the transgenic plants as well as to other insects. The strategy to set up the distribution
refuse area depends on the production region and the level of technology used. In Brazi
large portion of farmers still use unimproved seed. Usually they are small farmers and
use of transgenic maize will probably depend upon seed prices. All these maize producti
regions could be considered as a natural refuse area. In the case that this new technology
adopted, one strategy should be the use a common area based on cooperative efforts fr
all farmers.

Index terms: *Spodoptera frugiperda*, *Diatraea saccharalis*, *Helicoverpa zea*, resistan
management, biological control