

Biotech brings hope to Africa

By FRANK HOLDMEYER

MAIZE (corn) is the most important field crop in South Africa, a country of around 44 million people. Yellow corn is grown primarily for animal consumption, while white corn is the staple food crop for a major portion of the population, comprising about 71% of total production.

Corn production is hampered in South Africa by a number of factors, but stalk borer (*Busseola fusca*) is the biggest problem. The pest can trim yields 10% to 45%. For the 3 million communal, or subsistence, farmers who rely on corn for their survival, this is a serious challenge.

Most small-scale farmers in South Africa do not even attempt to control stalk borers primarily due to cost of chemical treatment; they simply can't afford it. Add to that the fact that stalk borer damage is often hidden and hard to detect, heavy infestations are unpredictable, and checking fields multiple times each summer takes time and skill.

South Africa on the whole is *Bt* friendly. The country officially approved genetically modified yellow corn for animal feed and white corn for human consumption under the GMO Act, 1997.

However, millions of black subsistence farmers are not sufficiently informed of the

Key Points

- U.S. Grains Council helps fund *Bt* corn plots in South Africa.
- Purpose is to educate farmers of benefits of GMO crops.
- European opposition groups have strong influence in Africa.

benefits and safety of *Bt* corn and need to be convinced *Bt* seed is worth the extra cost.

Education in test plots

The U.S. Grains Council, a U.S. based association that works to increase the exports of America's grains around the world, and AfricaBio, a non-profit, nonpolitical biotechnology association, are working to make that happen.

"In 2004, the USGC and AfricaBio initiated a project to establish six demonstration plots of both genetically modified and conventional corn in South Africa," explains Terry Francl, chairman of the USGC Biotech Advisory Team. Francl is a senior economist with the American Farm Bureau Federation.

"Part of the goal is to get local people educated and involved in informing South Africans on the benefits of bio-grains," he continues. This is especially important in South Africa where European opposition to GMO crops is especially strong.

"Our whole effort in South Africa is to educate as well as



SOUTH AFRICAN CORN THREAT: Stalk borers cause considerable damage to corn in South Africa. Damage to the cob creates conditions suitable for secondary fungal infections that can lead to the production of mycotoxins.

Alliance raises awareness

AFRICABIO is an independent, nonprofit biotechnology stakeholder association whose key role is to provide accurate information and create awareness on biotechnology in South Africa and the region. The association is made up of consumers, retailers, manufacturers, biotechnology companies, industry associations, farmers and farm organizations, students, scientists, and researchers.

Go to www.africabio.com to learn more.

refute misinformation. We can use these demonstration plots to prove our point."

AfricaBio's strategy is to work top down and bottom up, says Jocelyn Webster, executive director. "We want to influence decision makers through information, one-on-one meetings, and interaction with small farmers. In addition, we inform consumers, farmers and scientists through education, training and demonstration.

"Our goal is to move farmers from subsistence [where they eat what they grow] to small scale, which means they can make a profit and have a chance to grow," Webster says.

Trained to farm *Bt*

Thus far, the projects have been very successful in demonstrating the benefits of biotech corn. A growing number of farmers and others are being informed and educated of the benefits of *Bt* corn. One of those is Sabina Khoza from the Gauteng Province.

After her second year growing *Bt* corn, Khoza is quite pleased with the results. "I don't want to plant conventional corn again," she declares.

Khoza, who is president of the Gauteng Provincial Farmers Union, says the genetically modified corn has much bigger ears and less insect damage when compared to conven-

tional South African corn.

Part of the goal of the USGC and AfricaBio is to empower the black farmers of South Africa with the knowledge to grow crops successfully.

Training is also a part of the demo plot process. Khoza's farm is also a training center — Fair Deal Training Center.

Another of the demonstration sites is located at the Buhle Farmers' Academy near Delmas. The academy offers a program in which emerging, entrepreneurial farmers are intensively trained and sent out well-equipped to begin their own farming programs. Students are given a small plot of land and must do everything from preplant through harvest.

What's next?

USGC's biotech team members recently concluded a mission to South Africa to assess the benefits of these demonstration and training projects.

"This program has great po-

They said it



"To me this means money. I'm very proud to be associated with biotechnology."
Sabina Khoza,
small-scale farmer
in South Africa



"European governments are working with the environmental groups in South Africa to combat biotech. Our goal is to refute the European effort by demonstrating the benefits of biotech corn to the South African small farmer."

Terry Francl,
USGC Biotechnology
Advisory Team



"When I look at my conventional corn, I find stalk borer. But when I go to the GMO corn, there are no insects."

Lawrence Hlungwane,
Brits, near Johannesburg



"Biotech grains offer a lot of benefits to resource-poor South African farmers."

Jocelyn Webster,
executive director,
AfricaBio



"The introduction of GMO products is strictly regulated in South Africa."

Walter Loubser,
South African National
Seed Organization

tential to effectively showcase the benefits of biotechnology to small farmers and to filter this message up to decision makers not only in South Africa, but also the greater Southern Africa Development Community," says Cori Wittman, manager of biotechnology education.

"The council should continue to work with AfricaBio in designing demonstration plots for next year."

■ For more information, go to www.grains.org.

Bt delivers major yield kick

IN the 2003-04 season, demonstration plots were planted at Potchefstroom (North West Province) and Zurbekom (Gauteng Province) in South Africa under conditions similar to those available to small-scale farmers. At Potchefstroom, plants displaying moisture stress were irrigated while plants at Zurbekom were dependent on rainfall for moisture.

Results of field trials with *Bt* white corn in South Africa*

| | Potchefstroom (Irrigated) | Zurbekom (Dryland) |
|--------------------|---------------------------|--------------------|
| Yield (bu./acre) | | |
| <i>Bt</i> | 192.93 | 21.66 |
| Non- <i>Bt</i> | 142.59 | 17.04 |
| Yield Increase | 50.34 (35%) | 4.62 (35%) |
| Percent cob damage | | |
| <i>Bt</i> | 0.9% | 0.7% |
| Non- <i>Bt</i> | 18.6% | 8.5% |

*Converted from kilograms per hectare to bushels per acre

SOURCE: AFRICABIO

What else is USGC doing?

THE U.S. Grains Council has published a number of publications that are used by its ten offices around the world.

"These publications answer questions U.S. farmers and consumers take for granted," explains Terry Francl, chairman of the Biotechnology Advisory Team for USGC. DVDs have also been produced which answer questions from both consumer and producer perspectives.