

PENNSYLVANIA MASTER CORN GROWERS ASSOCIATION

Between The Rows

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SIDELINE VIEW OF THE GMO DEBATE

The debate over the potential for GMO (genetically modified organism) corn continues in the national media, but here in Pennsylvania we seem to be mostly on the sidelines on this issue.

I see our position similar to that of a backup quarterback in a football game: while all of the action taking place now only has an indirect effect on us, we better pay attention because we could be in the game quickly.

Generally our corn markets, which are mainly poultry and livestock feed, have not sent any signals to producers regarding a market for non-GMO corn. As a result, most producers in our area seem to be continuing to purchase GMO corn and soybean seeds.

Let's just review a few of the issues surrounding the national debate over GMOs.

One of the largest issues is food safety. Are the products from GMO derived foods as safe as those from non-GMO crops? Approved GMO products have undergone a comprehensive review by the FDA on this issue and they have concluded that the food and feeds produced from these crops are no different than from normal corn. This is based on an analysis of the composition of the grain, the properties of the

introduced compounds, and feeding trials that have been conducted on animals.

Nevertheless, some are questioning the thoroughness of the FDA approval process. Opponents of the technology are suggesting that the FDA should ban the use of GMO crops in foods until long-term testing can be completed or at least label products that contain GMO crops.

The FDA has had a long-standing policy on labeling stating that they "will require labeling if the composition differs significantly from its conventional counterpart." Up to this point the FDA has not endorsed labeling. Since such a wide range of products contain corn, and since much of the corn supply in the U.S. contains some GMOs, many consumer food products on the market contain GMO corn. A decision to label GMO foods by the FDA would mean that that the food industry would either need to label many products or begin to secure large supplies of non-GMO corn.

In the last several weeks, Midwest corn processors have been sending letters to corn producers that typically supply them. In these letters, the companies note that while they support the use of biotechnology, they are concerned about the market signals requiring non-GMO corn. They go on to sug-

gest that producers should plan on segregating GMO and non-GMO corn next fall.

The issue of segregation causes lots of headaches for Midwest corn producers. One of the first issues is how they can be sure their crop is GMO-free. Testing procedures are being developed that should be cost effective, quick, and relatively accurate for next fall's harvest. Possible sources of contamination include cross pollination from an adjacent GMO crop, GMO seed in a non-GMO hybrid, or incomplete cleanout from combines, elevators, trucks or grain bins.

The next issue would be acceptable tolerance levels — would it be any detection, 1 percent, 2 percent or 5 percent GMO in a shipment of grain? Now, it's not clear.

Liability is a concern as well. If a mistake is made along the way in the grain production or delivery process, who is liable for the contamination?

Another area of frustration with producers is whether non-GMO corn will command a premium. The marketplace will likely determine this. If it does command a premium, then some corn users may be reluctant to make a switch to non-GMO.

Another issue with the GMO crops is their impact on the environment. Will they cause resistance in target species and increased mortality of non-target species? Most scientists agree that there is potential for corn borer resistance to Bt corn but it is remote.

A resistance management

program that consists of not planting 20 percent of our corn acres to Bt corn has been adopted by the seed industry and the National Corn Growers Association. This would allow any resistant insects a greater possibility of mating with susceptible insects, thereby producing susceptible offspring that could be controlled with Bt corn the next year. Otherwise a resistant corn borer might be forced to mate with another resistant corn borer, and this would increase the likelihood of a resistant population developing. Consequently, it's important to pay attention to refuge requirements of Bt corn.

The issue of increased mortality of non-target insects came to light earlier this year when an article was published in Nature, a prestigious British journal, that showed that Bt corn pollen was toxic to the larva of the Monarch butterfly. This started quite a controversy early in the summer. Numerous entomologists around the country began to look at the issue. In November they met and shared their findings with the press.

According to Dr. Dennis Calvin, Penn State's extension entomologist, a few of the conference conclusions were that 1. Bt corn pollen does have some toxicity to Monarch larvae; 2. toxic levels of corn pollen do not occur far from corn fields; and 3. it is likely the Bt corn pollen is not a significant

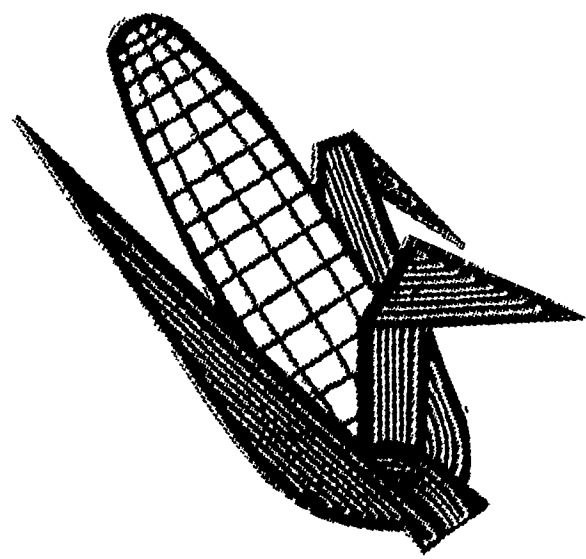
mortality factor to Monarch butterfly larva. Thus the Monarch issue was probably overblown in the press but there do appear to be some effects of the pollen on off-target organisms.

There are many other issues in the GMO debate. With the large overhead needed to develop these crops, the genetics of farm seeds are concentrated in the hands of a few companies. Is this good or bad? If we ban GMOs or make it difficult to produce and market them, are we sacrificing what could be one of the greatest agricultural innovations of all time? Who will fund the application of GMO technologies for self-pollinated crops such as rice and wheat in the less developed countries?

All of these are legitimate questions and each of us has to develop our own position on these issues. In some ways this debate is not that much different that others that have occurred with the introduction of other new technologies: television, nuclear power, the Internet — to name a few.

Take time to research and monitor this topic as it unfolds. Visit my webpage for more links to other sources of information: <http://www.agronomy.psu.edu/Extension/CornManagement/CornManagement.htm>

Keep informed. That way you'll be ready if we get called in the game.



In 2001, Bt Corn Technology

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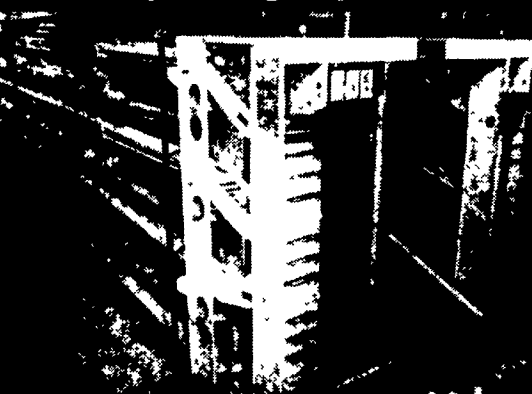
eases and pests to come up with effective management methods. Voight demonstrated how using a digital camera, a picture of a disease or insect can be taken. The picture can be downloaded into a computer and transmitted by e-mail using a commercially available word processor to plant entomologists or pathologists quickly at Penn State. The technology can expedite information about a pest or disease from the grower, to Penn State experts, and those experts can provide recommendations directly back to the grower.

Recommendations about

treating can then come directly from Penn State specialists.

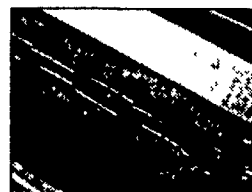
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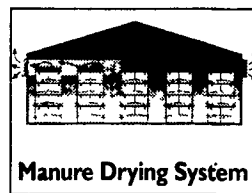
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