



OPINION

Responsible Science

Two prominent entomologists warn that recent studies on the effects of genetically engineered crops have distorted the debate about engineered crops and that this could have "profound consequences" for science and public policy.

The article, "False reports and the ears of men," in the latest issue of "Nature Biotechnology," is authored by Anthony M. Shelton, professor of entomology at Cornell's New York State College of Agriculture and Life Sciences, and Richard T. Roush of the University of Adelaide, Australia. They urge that the public should not be swayed "by laboratory reports, that when looked at with a critical eye, may not have any reality in the field or even in the laboratory."

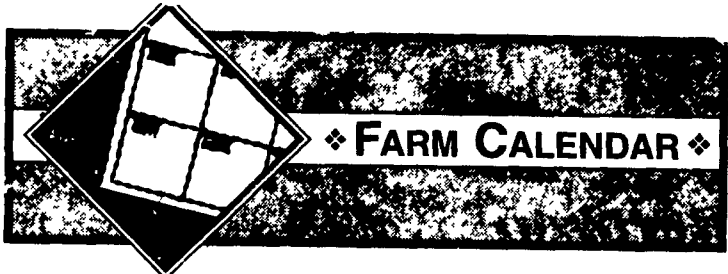
The first of the studies they comment on was led by John E. Losey, Cornell assistant professor of entomology. This study of the effect of "Bacillus thuringiensis" (Bt) corn on the monarch butterfly "can only be considered a preliminary laboratory study," they write.

In the May 20 issue of "Nature," Losey and his colleagues reported that pollen from commercial corn, genetically engineered to produce a bacterial toxin to protect it against European corn borers, kills monarch butterfly larvae in laboratory tests. While Shelton and Roush note that this result was expected under such laboratory test conditions, they question whether this test was realistic.

"If I went to a movie and bought a hundred pounds of salted popcorn because I like salted popcorn, and then I ate those salted popcorn all at once, I'd probably die. Eating that much salted popcorn simply is not a real-world situation, but if I died it may be reported that salted popcorn was lethal," Shelton said in an interview. "The same thing holds true for monarch butterflies and pollen. Scientists have a duty to be incredibly responsible for developing realistic studies. Scientists need to make assessments that are pertinent to the real world."

In the second study discussed in the article, researchers at Kansas State University reported in "Science" that they had discovered corn borer resistance to Bt toxins. Shelton and Roush question the methodology used in the study, "including that the authors did not demonstrate that resistance was actually to the same Bt toxin as in the plant or that the insects could survive on the Bt plant." Even so, they write, "this questionable laboratory study has generated considerable debate over whether the present resistance management policy should be overturned."

In discussing the Cornell monarch butterfly report, Shelton and Roush voice their surprise that a "previous and more relevant and realistic study has been largely overlooked." While the Cornell laboratory study showed high mortality among monarch larvae that ingested genetically engineered pollen, an Iowa State University study by Laura Hansen and John Obrycki showed low mortality even when Monarch larvae were fed milkweed that had the highest levels of Bt pollen that would be encountered in the field. Shelton and Roush note that it is unlikely that these high Bt pollen levels would be encountered by the insects in the field, and they say that "few entomologists or weed scientists familiar with the butterflies or corn production give credence to the "Nature" article."



Saturday, September 18
 Grazer Meeting, Penn State University Haller Farm.
 Producer Field Trip to Penn State Haller Farm, meets at Comfort Inn/Bonanza Restaurant at New Columbia exit of Rt. 15 north of I-80 at 8 a.m.
 Southeast Regional Cattle Association Annual Farm Tour to Maryland, Holloway Brother Farm, Harford, Md., and Shadow Springs Farm, Havre de Grace, Md., leaves Chester 4-H Center 7:30 a.m. and Herr Angus 8:30 a.m.
 Philadelphia Harvest Show, Horti-

culture Center at Fairmount Park, 10 a.m.-5 p.m.
 Ninth Annual Benefit Auction and Bake Sale for the Clinic For Special Children, Leola Produce Auction, Leola, 8:30 a.m.
 Lehigh Community Livestock Roundup Sale, Schnecksville Fairgrounds, 10 a.m.
 PDPPS 43d Annual Pennsylvania Dairy Princess Banquet and Coronation, Sheraton Inn, Harrisburg, milk punch reception 5:30 p.m., banquet 6:30 p.m.
 Sustainable Forests Day, Gulyas and Tilley Property, Ulster, 10 a.m.
 Lancaster County Trust annual

Now Is The Time
 By John Schwartz
 Lancaster County Agricultural Agent

To Plant Spring Oats For Fall Forage

The drought of 1999 has caused many livestock and dairy farmers to be facing feed shortages for the coming winter. There are still some emergency options that can be pursued to provide additional forage.

Small grains may be used for supplemental forage production according to Dr. Elwood Hatley, Penn State Agronomist. The best option for fall forage production is spring oats. It may be used for grazing or silage.

It may be seeded in early September at three bushels per acre. Usually no additional inputs are required. Fertilizer application is not likely to increase yields. Feed oats may be used for seed provided you check the germination. To check germination, take 100 seeds, place them in a wet paper towel in a plastic bag and put them in a warm place. In a few days check to see what percentage has germinated. If germination is less than 90 percent, increase your seeding rate accordingly or buy seed oats.

To Plant Winter Grains For Forage

Winter grains such as wheat, barley or rye, may provide grazing this fall or spring silage production. Harvesting winter grains as silage in the fall is difficult because they lack stem development. Harvesting for fall silage may be improved by mixing spring oats (2 bushels per acre) with fall grain (1.5 bushels per acre). Winter grains can provide grazing in the fall or spring without harming grain yield as long as the plants are allowed to go into winter with two to three inches of growth and the cattle are removed in the spring prior to stem elongation. All winter grains may be harvested for silage production in the spring. Traditionally rye has been the grain used most often for forage production. It can be planted the latest for erosion control and forage production. It does drop in forage quality faster than the other grains. It must be harvested in the boot stage prior to head emergence.

Other winter grains may be harvested later in maturity. Which

picnic, Dwight and Rosie Rohrer Farm, Manheim, 1 p.m.-5 p.m.
Sunday, September 19
 Gratz Fair, Gratz, thru Sept. 25.
Monday, September 20
 Pa. All American, Farm Show Complex, Harrisburg, thru Sept. 23.
 Beaver Community Fair, Beaver Springs, thru Sept. 26.
 Lycoming Fall Crops Day, Gene
 (Turn to Page A35)

winter grain is best for your forage production will partly be determined by which one is most convenient for you to harvest in the spring. Rye is normally harvested for silage in late April, barley in early May and wheat in mid May.

To Cope With Stress

A crisis is an event that can affect a family at any moment, according to Debra Naumann, Lancaster County Extension Family Living Agent.

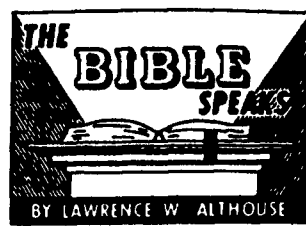
Whether it is an illness, death, accident or weather related problems, such as the recent drought, families react in many different ways to crisis. Some break apart, while others not only make it through, but grow stronger as a result. Families that grow stronger are often those who have taken steps ahead of time to develop their strengths. These families are open and honest and possess good communication skills.

This means that family members not only share feelings about problems with each other, but are able listen to each other

without offering instant solutions or answers. These families are not afraid to seek support outside the immediate family. This could be from other trusted family members, friends, church or community agencies. Families with strong coping skills recognize the importance of spending time together in the event of a crisis. While life may be difficult, they gain strength by developing a teamwork approach to problem solving and by spending time together laughing, relaxing and playing. Those families who cope well in the event of a crisis are able to see a crisis as an opportunity to become stronger. By viewing the crisis as a challenge rather than an event that may level them, these families take an active role in making things better. This sense of hope and optimism helps them to go on even when things look unbearable.

Feather Prof.'s Footnote:

"Unless you try to do something beyond what you have already mastered, you will never grow."



BY LAWRENCE W. ALTHOUSE
ARE YOU A PROMISE KEEPER?
 September 19, 1999

Background Scripture:
 Exodus 19:1 through 20:21
Devotional Reading:
 Deuteronomy 4:32-40

In the stories of Abraham, Isaac, Jacob and Joseph, the basic relationship between God and these people is that of covenant. God and the people make an agreement or a pact with each other. God promises Abraham that he and his descendants shall be his people and he will be their God. This is the covenant relationship that is at the heart of their religion. In Exodus 19 God spells out some of the basics of this relationship. We call these basics "the Ten Commandments."

Some of us have problems with commandments. The very fact that we are commanded to do this or not to do that often motivates us to resist and perhaps even defy these commandments. From the Garden of Eden onwards, God's children resisted him either passively or actively or both. One woman said she didn't like the Ten Commandments because they gave people ideas! She's right. The very fact that God says "Thou shalt not . . ." motivates some people to try out the very thing God forbids.

GOD'S GRACIOUS ACTS

We often fail to realize that the covenant between God and Israel — as well as between God and us — does not begin with commandments. Before delivering them to Moses, the Lord says to him, "You have seen what I have done to the Egyptians, and how I bore you on eagles' wings and brought you to myself . . ." (19:4). The covenant is always based upon what God has already done for us. It is from this context that he says: "Now, therefore, if you will obey my voice and keep my covenant, you shall be my own possession among all peoples . . ." (5,6).

The starting place of our relationship with God is not with what he tells us he will do, but what he has already done for us. There came a time in my adult life when, if my parents asked me to do

something, I did it, not so that they would do something nice for me, but because of what they had already done for me many times over. I knew I could never repay the debt I owed them. Our relationship with God is similar: we start off with an indebtedness we can never pay back. What God has done for us becomes our motivation to keep our promises.

OUR 'EGYPTIAN SERVITUDE'

The Ten Commandments are directly preceded by these words: "I am the Lord your God, who brought you out of the land of Egypt, out of the house of bondage. You shall have no other gods before me" (20:1,2). We respond to God's saving us from our own personal Egyptian servitude by promising to follow and worship no other gods. And so it is with each of the commandments: they provide a way of accepting what God has done for us.

When we study the Ten Commandments, we find that God does not command us to do or not do this or that simply because he wants us to toe the mark. Each commandment tries to protect us from the consequences that follow the breaking of them.

So, these commandments are not for his sake, but ours. If we worship other gods, graven images, take God's name in vain, violate the Sabbath, fail to honor our parents, kill, commit adultery, steal, bear false witness and let ourselves be consumed by covetousness, we are the losers, not God. Our lives are enriched when we keep our promises and they are impoverished when we do not.

So, God gives us the commandments, not to restrict us, but to enrich us and we keep our promises for the same reason. Being a disciple of Jesus Christ is based upon what God has done for us and keeping the promises we make to him.

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