
Interview: Dr. Michael Shinkle

Stored grain suffers record infestation

Yields per acre are promising this year for the major grains in the United States, so the 1987 harvests may be good despite the large acreage set aside, and the farm-income crisis. However, there has been a record rate of insect infestation in stored grain for the last two years, as grain exports and domestic animal feed utilization both decline. Irradiation, modern chemicals, and proper facilities would permit food storage with minimum damage. Here Dr. Michael Shinkle, an entomologist and food safety expert who heads the Environmental Management Services company in East Peoria, Illinois, discusses the scope of the current problem.

EIR: How big is the problem of infestation of grain in storage?

Shinkle: We've had two years back to back. We didn't really have much of a winter, because of mild temperatures. We've had two years of very poor sales of grain, and slow movement of grain, heavy insect infestation of grain, heavy mold counts in grain, and it is not improving.

EIR: What about the banning of the fumigant EDB?

Shinkle: Farmers are complaining about the fact that they cannot feel safe about using the alternatives they have for treating grain infestation. They used to use the pour-on fumigants [EDB and others], and oddly—that is, I think that the pour-on fumigants are hazardous—if you look at the record, we had very few incidents nationally when the farmers had pour-on fumigants. Basically, I think the reason that we had such a good record when we had the pour-on, is they usually just opened the cans, and threw them inside and then got away, so they limited their exposure. They're a little frightened about using aluminum phosphide, which is the alternative now, because it does have one property that is worrisome, and that is that it will spontaneously combust if

it is combined with water.

There is a new material. It started in general use last year, and it's called, "Actillic." It is a spray-on that can be used when you auger grain into a storage facility. It can also be used to top-dress grain. That has been very good, and is now starting to be used. It gives a long term residual.

Malathion is the old standby, and it can still be used for bran bugs—there are a number of beetles that are categorized as bran bugs. The bran bugs cause heating of grain, and that will ruin the condition of grain. Malathion can be used effectively.

The Indian meal moth is resistant to malathion, and it is a top infestation pest. What we've been finding is that, as early as the end of February, when I walked about 40 million bushels of corn, the Indian meal moth was so plentiful that it was flying in clouds over some of these grain masses. That is very unusual. Usually you don't start to see them until July, because the adults and the larvae are killed by severe winters.

[So, in a mild winter], they over-winter in all stages. It stays in the top 8-10 inches of grain. But it will web over the grain and ruin it, clogging up the augers. Sometimes the wheat gets really hot. The moisture can get trapped and start ruining the grain where the insect has been webbing. The University of Illinois released a statement a few days ago, reporting that central Illinois has a very heavy Indian meal moth infestation in every facility.

EIR: What about storage facilities?

Shinkle: There is a serious problem of grain loss in these hurriedly built, flat grain-storage facilities out in the field. They build a wooden wall about 4-5 feet tall in either a circular fashion, or rectangular. Very commonly, if it is rectangular, it is 200-300 feet long by 80-100 feet wide. They put tarpaulins up over the grain, after they auger the grain in this. It's just a big pile of grain. Some of it is on a good cement pad, with aeration ducts across the pad so they can keep the grain cool. Some is just on a polyethylene sheet on the ground. You can go here and there and smell the rotting grain.

There has been a lot of loss of grain from the flat storage facilities. Every elevator of any size at all, around the Midwest, built one of these, or more, except for the large companies—Archer Daniels Midland [ADM], etc. The smaller country elevator co-ops did. Some of them have been sensible about putting the right money into the proper construction, but others have built poor storage in haste, and they have lost a lot. It is difficult, if you don't have just the right kind of condensation. Many, even well built, have lost a lot through condensation. It is exactly what we have predicted. I sent an alert to the universities, that I feared very much what they were doing in the field with these facilities.

It's a net loss of grain. Barge storage has proven to be exactly as we had predicted. We have lost most of the grain that was actually stored, rather than moved, in barges.

It's hard to estimate, because they moved the grain around. For instance, they had a number of barges. ADM had a number on the Illinois River, and they moved those down to southern Mississippi for the winter, because of the weather. On the southern Mississippi River, there are a number of firms that actually contract to watch barges, to fumigate and watch the condition of the grain. They are the same types of firms as ours in the north—but there is less of that. Up on the Illinois River, there's a feeling that maybe you can get by if the infestation is not too bad. Then you simply send it south, and you blend it with good grain.

EIR: How does blending work?

Shinkle: When that has been infested and discounted, they blend it with better quality so they meet what's called a "pass."

We are not at all impressed with USDA inspectors. There was a time when they did quite a credible job, but not seeing what we see now. The regulation has been changed regarding blending, but still some of the same practices go on. We have a problem primarily because we are not moving grain as much to make it work.

We've culled a lot of cattle. A lot of storage is changing. There's a lot of complaining going on in the field today about the large terminal elevator, and the way they purchase grain—the way they discount grain. It is felt that they do so unfairly and inequitably, so that they are really putting the squeeze on the country elevator. Some have gone bankrupt. Some of it is poor management. Some are being squeezed in certain areas.

Some of the Minnesota studies showing what the farmers are doing in treating their grain—what they are not doing—lends some credibility to the discount policy. There are a certain number of bugs allowed in a certain amount of grain—depending on which grain it is and where you happen to be. The elevator people will discount if it's over-tolerance, but they may still take it and blend it. As long as everybody is moving corn and wheat fast enough, you simply move the problem. Some of the fine particles move out—broken grain, dust, debris—that is where insects harbor. But when you move grain, you break it, and that is when the micotoxin levels increase.

EIR: What do you recommend?

Shinkle: Sell more grain. We never had a problem until CCC days where they encouraged on-farm storage of corn—around the 1940s and '50s. We had a lot of government bins on the farm. Then they developed fumigants, and the farmer was able to use a lot of them. There was very little regulation, but very little incident of hazard, or people being killed. The government moved in—blowing out of proportion the dangers. Something "might cause cancer," or might do this or that. Very theoretical, very impractical. They took materials away from the farmer. The consumer will wind up paying

more for food, more for grain, putting us even more out of a competition mode with the rest of the world. Everytime you stop moving grain and start storing grain, you have a problem. Through the 1960s and '70s, we were moving grain so fast—prices were up; we were moving a lot of grain; we were pretty well-heeled. Then Mr. Carter came along.

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