Safer grain fumigant available for Md. farmers

COLLEGE PARK, Md. — Maryland farmers who store grain may want to try a fumigant that is safer, less expensive, and as effective as any previously recommended, according to Extension entomologist Lee Hellman.

Hellman, speaking here at the 1982 Maryland Agricultural Pesticide Conference last Friday talked about the various controls needed to eliminate pests in stored grains.

"Hydrogen phosphide has been used in large grain storage operations both on farms and at commercial facilities in western and midwestern states for several years," Hellman said. Adequate supplies of liquid fumigants, and lack of availability of hydrogen phosphide in a form readily usable by farmers limited its use in the east. Now he says he believes the situation has been reversed.

"Hydrogen phosphide is available through eastern distributors and there may be some limits on the availability of liquid fumigants in the future," Hellman said.

A dry fumigant, hydrogen phosphide, is available as a tablet or a pellet. As it decomposes it releases phosphine, a gas that is lethal to all known stored grain pests.

To use the material, the storage bin must be sealed, as for any fumigant. The tablets or pellets are put into the grain mass with a probe. As soon as they come into contact with the air, the tablets or pellets release a warning gas, ammonia. About 1 to 2 hours later the pellets begin to release phosphine. It takes the tablets a little longer, about 2 to 4 hours.

Hellman said, "This much time between application and release of gas gives the user a margin of safety. By the time the gas is being released the farmer should see to it that the area is clear." Liquid fumigants, currently used, are much heavier than air and their toxic effect is immediate. Therefore, careful handling of these materials is very critical.

Hellman said, "Safe handling of any insecticide requires a great deal of care, and hydrogen phosphide is no different in that respect. But, because this material does not release the toxic gas immediately, when it is used with reasonable care, the risk of exposure is reduced."

In recommending the material, Hellman pointed out that good pest control in stored grain starts with sanitation. Storage bins should be cleaned and completely cleared of any grain from the year before.

The fumigant is available in this area and the manufacturer will conduct on-farm certification for farmers who store grain and do their own fumigating. Hellman suggested that interested farmers contact the Extension agent in their county. If there is sufficient interest, a certification program could be conducted on a farm in the area, Hellman said.

Manage alfalfa for optimum regrowth

UNIVERSITY PARK — Spring growth of alfalfa originates from the buds of crowns that survive the winter. This early spring growth is achieved at the expense of carbohydrates stored in the taproot.

According to William C. Stringer, assistant professor of crop science at Penn State, as more leaf area accumulates, the developing alfalfa loses its dependence on reserves and depends on daily photosynthesis. As the plant accumulates more leaf area, energy is available to restore the root reserves to a higher level.

Spring growth is rapid because of milk temperatures and ample moisture. For this reason, the first cut is usually the largest harvest. When the cut is made, the plant leaf area is removed, early recovery depends upon root-stored energy.

When the first cut is made at the early bud stage, root reserves are relatively high, but not at peak levels. Later cuts at early to mid-bloom stages allow the plants to reach peak reserve levels.

Stringer recommends taking the first cut at early bud stage because soil temperatures and moisture are at optimum levels for regrowth. Higher temperatures and lower moisture levels during summer place the plants under stress, and their daily productivity is lower than it is in the spring.

Stringer adds that insect and disease pest can add to the stress problem. Therefore, it is important to let the plants reach a more mature stage in summer. This allows a reserve to develop in the taproot.

In Pennsylvania, it is recommended that summer growths be allowed 35-42 days to reach the early bloom stage before cutting. A common cutting schedule for central Pennsylvania might be May 25-July 2-August 10. Such a schedule, with good fertility and pest management, should result in persistent stands and high yields.

What should be done for autumn management?

Mid-September cuttings have been frowned upon in the past because the plant is building up reserves, beginning to develop cold hardiness, and laying down crown buds for winter. However, considerable growth can occur during this time which would be wasted if not cut.

Preliminary results from new experiments indicated that with adequate fertility and management and ample recovery time before the autumn cut (42 days) plant survival and productivity may be unharmed. Stringer says that more information will be coming on this topic as future experiments are completed.

Soil scientist joins U. of Del.

NEWARK, Del. — James Thomas Sims, a specialist in soil fertility and plant nutrition, has joined the staff of the University of Delaware's department of plant science. A native of Columbus, Ga., Sims holds B.S. and M.S. degrees in soil fertility from the University of Georgia. He earned his doctorate in soil chemistry at Michigan State University, studying phosphorus adsorption and availability for crop uptake.

At Delaware Sims will teach an undergraduate course in soil fertility and an advanced graduate course in plant nutrition. He will also conduct research in the area of soil fertility.

James T. Sims