

Farm insect plague: Who's to blame?

by Marcia Merry

Idaho and Utah were both declared federal disaster areas this summer because of grasshopper damage, and other western range states were plagued with the same infestation. Next summer, the grasshopper population could double or triple, causing massive damage.

Grasshoppers are just one of several pests threatening to spread out of control. The national fruit, vegetable, and crop-seed supplies are potentially threatened by the arrival of a new mite that debilitates honey bees—needed for pollinating plants. Fire ants are moving from their stronghold locations in the South, farther west toward California. Gypsy moths, bagworms, beetles, cutworms, and other insect populations can cause extensive damage if they are not contained by proper cultivation and eradication measures.

Are the grasshoppers, the mites, and the bugs the “plague of locusts” that inevitably visits the house of those who stray? In some ways, yes. In 1983, federal subsidies to cover one-third of the cost of grasshopper-control spraying, which had been routinely available to ranchers, were discontinued. Other federal pest-control programs have also been cut, while farmers have been less and less able to pay for pest controls because of collapsing farm credit and income.

Since the early 1970s, the impact of the environmentalist movement has undercut the research, development, and application of needed advances in pest-treatment measures. Constant R&D and pest controls are needed to prevent the development of “pest time bombs” which can explode, the way malaria mosquitoes have done in the world since William Ruckelshaus unnecessarily banned the use of DDT. According to Dr. Michael Shinkle, an entomologist and pest-control expert with Environmental Management Services, Inc. in Illinois, “We’re talking about 36% of the world species of flies now being resistant to one or more of the world’s pesticides. And 15% of the beetles. Fifteen percent of the biting bugs, like ticks, are resistant.”

Effects of the lack of fertilizer

When land is underfertilized, and crops also receive insufficient herbicides and pesticides, the conditions are created to breed pestilence and plague. Inability to afford proper measures has cut production of crops on some farms by 30%. Wherever weeds or unwanted plant cover increase, there is more opportunity for destructive insects to proliferate. Be-

tween seasons, the crop residue needs to be cleared away to break up the infection cycle.

In Maine this summer, many farmers were forced to leave at least one-third of their blueberry crops to rot in the fields, because the price they were receiving did not cover the harvesting costs.

Because of insufficient fertilizer use in the past few years in U.S. corn production, the protein content of corn has fallen from 10% to 8% in the Midwest, and as low as 7% in the South. As the protein content drops and the carbohydrate content increases, conditions become even more favorable for the growth of various fungi, especially where the corn is not dried properly.

The byproduct of one fungus—*Aspergillus flavis*—is aflatoxin, one of the most deadly toxins known. In several areas of the United States, aflatoxin in the corn fed to chickens has affected their immune systems, drastically lowering egg production and eventually killing the affected poultry.

Since 1979, the amount of nitrogen fertilizer use per capita in the United States has fallen, for the first time ever. Though this trend may be statistically the result of averaging in the 1983 Payment-in-Kind program where 90 million acres of land were removed from cultivation, nevertheless the consequences are serious. Farmers have scaled back production inputs, even according to U.S. Department of Agriculture analysts, who weakly explain: “A late, wet spring, continued high interest rates, and a record farm debt-asset ratio have kept fertilizer, pesticide, and farm machinery purchases lower than previously forecast.”

Invasion of the grasshoppers

Grasshopper infestations built up this year in Arizona, New Mexico, Colorado, Utah, Wyoming, Montana, and Idaho, and forage losses were significant throughout the region. But federal disaster declarations and associated emergency funds were too little and too late to affect the laying of eggs which will produce next year’s population. Eggs are laid by Aug. 1 (in the soil and thus invulnerable to current pesticides), but the limited federal aid was not available until mid-August.

A new species of honey bee mite has shown up in Texas, the *Acarapis woodi*, that attacks the breathing channels of bees. The colonies of bees weaken, the population goes down, and fewer bees are present to pollinate food crops. The acarine mite was detected in the Rio Grande valley last month—the first time in the United States. New federal and state regulations have been implemented to restrict movement of bees, and research is underway on potential damage the mite could cause.

Approximately one-third of the food consumed in this country requires honey-bee pollination directly or indirectly. This includes most fruits, many vegetables, berries, and the seed industry for vegetables and for forage crops, which in turn support dairy cows.