

Local

Bugs conquer bugs, control pests

Techniques not refined enough to replace pesticides yet

By LAURA CORTEZ

Battalion Reporter
Despite potential health and environmental hazards, there appears to be no end in sight to the large-scale use of pesticides in this country. Biological control, however, is a non-chemical method of control that has been successful in reducing pesticide use.

Predators, parasites and disease organisms can be used to effectively control insects, diseases and weeds which destroy about 33 percent of the potential food crop in the United States.

Basically, biological control aims at restoring and maintaining the natural balance of the ecosystem. Much of the pest problem results

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from man transporting plant and animal species from their natural habitats to places foreign to them.

In addition, excessive pesticide use destroys beneficial as well as pest insects.

Dr. David Pimentel, an entomologist at Cornell University, estimates that crop losses due to insect pests have increased nearly twofold (7 percent to about 13 percent) from the 1940s to the early 1970s.

Pesticides are primarily used to help combat the problem, but the "bug vs. bug" method of pest control has been successful on many food crops.

Dr. Frank Gilstrap, associate professor of entomology at Texas A&M University, said although California, Hawaii and Florida are the leaders in biological control of insects, Texas has had some "striking successes," and has the potential to be the leader.

Biological control is a "routine technique" in controlling pests on citrus crops in the Rio Grande Valley, where the citrus black fly is being maintained at a low level by its parasite (a beneficial insect that lays eggs in the pest insect, thus killing the pest while producing its own offspring).

Gilstrap said this method is also being used on tree crops, such as peaches, apples and olives, as well as on nut crops. It has not been widely

accepted on field crops, such as vegetables, however, due to lack of necessary research. But Gilstrap added that much research in Texas is addressing the area.

And although much of the research is being done in this county (at Texas A&M), little is being implemented here.

"Brazos County is certainly not the vanguard of biological control," Gilstrap said.

Pesticides are used heavily in this area, and "you're not going to convince many growers that pesticides are not good — they've had too much success with them," he said.

Another problem is that biological control does not eliminate all of a particular pest and may leave insect parts in certain crops.

Gilstrap said, "Although there are tolerances (legal levels) for pesticide residues, the tolerance for insect parts is zero. This means you better use pesticides or you can't sell your crops. We're caught in a vicious circle."

The problem now is that there is not enough information on how much crop loss farmers would suffer if they stopped using pesticides.

In an article in BioScience, Pimentel said, "At this time, it is not clear whether crop losses due to insect pests would continue to increase or would decrease over time if pesticide use were terminated."

Gilstrap said that sound research must be the basis for pesticide use, and researchers, rather than chemical salesmen, should be consulted before pesticides are employed.

But while it is doubtful whether pesticides will be replaced by biological control, there will be a trend away from pesticide use in some crops, and more emphasis on pest

management, which takes advantage of as many natural sources of control as possible, he said.

Weeds and plant diseases also cause serious problems in food

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crops, but biological control in these areas is not as advanced as insect control.

Dr. R. D. Martyn of the plant sciences department at Texas A&M said, "Entomology is without a doubt in the driver's seat when it comes to biological control. They (entomologists) have about a hundred year jump on us, and they've got much more success stories than we have."

He said most of the work in plant pathogens is still in the experimental stage, and little is applied.

Martyn cited two successful programs in the United States: one at the University of Arkansas where a fungus is being used to control Northern joint vetch weed in rice crops, and another in the Pacific Northwest, where a fungus is being used to control skeleton weed on rangeland crops.

Biological control is not practiced in this county, but Texas A&M is involved in a good deal of research.

Among this research is control of aquatic weeds that plague Texas rivers and lakes. One of these weeds,

the water hyacinth, is being grown for research purposes in plastic children's swimming pools in a greenhouse on Agronomy Road.

Martyn said that even though biological control is still in the experimental stages, other non-chemical methods such as breeding for disease resistance and making the environment unfavorable to the pathogen are being successfully used.

He could not estimate when biological control would become widespread.

"The breakthrough could come tomorrow or it could never come," he said.

It appears progress in plant and weed control is coming slowly, yet the success of insect control is encouraging, and the benefits are clear — it is safer and cheaper than pesticides.

An example of the cost difference is a beneficial wasp which controls citrus red scale for \$20 an acre, compared to \$200 an acre for pesticide spraying.

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United Press International
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The rain in Spain proved no obstacle to reception of the signals.

Pulled by Saturn's gravity to a high speed of 56,559 mph, the spacecraft was scheduled to reach its closest approach point at 5:46 p.m. CST, skimming just 77,200 miles above the rolling clouds of the giant gas ball.

Scientists at the Jet Propulsion Laboratory were concerned that rainstorms in Spain during the night would interfere with reception of some of the most important data by an antenna near Madrid, but their worries proved unwarranted.

"We're heading for our close encounter and all is going well. A number of fascinating photographs have come in," Hibbs said.

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