

GARDEN

about your orchard's ecosystem



Recorder/Chuck Blake

one sexual scent, which at-

By LYNN STOWE TOMB
Recorder Correspondent

Sticky, red croquet balls, white cardboard rectangles, and scented cardboard tents dangle from the branches of apple trees in the orchards where Glenn Morin and Dr. Robin Spitko are working. Either visually or sexually attracting some of the many pests that plague Massachusetts fruit growers, these traps can give an estimate of insect populations in the orchard.

Monitoring of the pests and their predators is the basis of integrated pest management (IPM) and the partner's month-old firm, New England Fruit Consultants. Dr. Spitko, 28, and Morin, 26, work out of an office on Lake Pleasant in Montague.

Their pamphlet explains, "IPM involves the use of all management tools available to today's grower including cultural, biological, and chemical control methods.

Each pest is controlled in a manner that is least disruptive to the control of other pests, but creates no adverse effects on crop quality."

"We intensely monitor insect and disease activities in the orchard over an entire season," said Morin, "with the basic idea of treating with insecticides only when pests are in economically damaging numbers."

Dr. Spitko added, "Traditionally, growers have sprayed by the calendar. The trees are at stage X, so it's time to spray for a certain bug. It's possible that the bug is not even in the orchard."

"With the escalating cost of chemicals," said Morin, "the cost of spraying the whole orchard, protectively, may be more than the cost of the damage of a small number of bugs."

"The economics of growing apples," continued Dr. Spitko, "is not based on yield volume like some other vegetables and fruits. Large amounts of insecticides and fungicides are necessary to obtain the cosmetically perfect fruit demanded by consumers."

"Our aim is to achieve the same quality, yet cut back on pesticides by spraying only when necessary," said Morin.

"If the consumer would accept a less than per-

fect apple we could spray even less. The fungus, apple scab, for instance, produces a superficial mark on the skin that doesn't effect the quality inside. Yet it's not acceptable to most buyers."

Besides ecological benefits, reduced spraying also prolongs the lifetime of the current spray materials. Heavy spraying forces the insects to mutate and adapt to a certain chemical, rendering it ineffective.

The IPM Apple Project originated five years ago at the University of Massachusetts in plant pathology. Now in its last year, the project is directed by Dr. Ronald Prokopy and William Coli. Morin and Dr. Spitko worked as technicians, doing the fieldwork and monitoring.

While Dr. Spitko was finishing her Ph.D. at the University of Massachusetts in plant pathology, Morin, who has a bachelor's degree in zoology, spent three years on the project. Dr. Spitko gained her field experience last year.

"The goal of the project was to demonstrate the feasibility of IPM to commercial growers," said Morin. "It was also hoped that private consulting would carry on the work of the project. This is what we expect to do."

During the first four years, the project has shown IPM growers how to use 37 percent less pesticide than the control orchards, which were sprayed traditionally. This was a savings of \$97 per acre, per season, in chemicals and application costs with no decrease in fruit yield or quality.

One of the results of last year's testing showed the benefits of letting predators do the grower's work.

"It was a good year for aphid predators," said Dr. Spitko, "so we advised the IPM growers to hold back on spraying — which would have killed both aphids and predators. The problem was completely taken care of with little damage to the fruit."

"IPM tries to get the orchard back into a natural balance," said Morin. "Some spraying is always necessary in large commercial orchards, but some chemicals are less toxic to predators."

At Valley View Orchards in Shelburne, owners

Harvey and Marvin Peck have been involved with the IPM Apple Project for four years. Morin and Dr. Spitko are monitoring the Peck orchards this year as independent consultants.

"We agreed to be a part of the experiment when approached by Dr. Prokopy," said Harvey Peck. "It sounded like a good idea, and it wasn't costing us anything. Now we're enthusiastic about IPM — we find we can lengthen intervals between spraying and that saves us time and money."

Visiting the orchard once a week, the partners use a variety of traps.

"Right now we're looking for tarnished plant bug, leaf rollers, leaf miners, gypsy moth caterpillars, and apple scab," said Morin.

Apple scab is detected by testing for the ideal conditions for infection, using a miniature weather station that measures a combination of wetness and temperature.

The cardboard tents attract the male moths with a sexual scent (pheromone), and other visual traps mimic the exact color of the blossoms and fruit.

The program that works for commercial orchards," said Morin, "can be adapted to the small grower." Where field scouting is done on a weekly basis in large orchards, the consultants can make an initial visit to the homeowner with a few trees, and give advice on an approach to insect control based on the individual's orientation.

A complete organic control program would include monitoring, trapping, and use of some natural pesticides. Dormant oils that cover the foliage can also be sprayed. Some damage must be sustained with an organic approach, but in the small orchard it can be within acceptable limits.

We're interested in orchard reclamation," said Dr. Spitko, "and we can give information on disease resistant varieties of trees, root stock, and site selection.

"The owner can then continue his own IPM program," said Morin. "The emphasis is on whole management — learning your orchard's ecosystem."

For more information, call New England Fruit Consultants at 367-2629.

Uniformity: key to winning

By PAT LEUCHTMAN
Recorder Columnist

Joanne Allen, co-superintendent of the Roundhouse at the Franklin County Fair, was talking to me about gardening the other day, and she thought that all the potential blue ribbon winners in the county could do with a reminder that the time to prepare for the fair was not at the end of August, but right now while gardens are being planted.

Her advice was well taken, and I went back to last year's premium book to check on the categories. I usually plan my garden with family preferences in mind and with concessions to the kinds of storage space I have, but this year I am going to plant some extras so that I will have enough to spare for the fair. Each year I am surprised at how many beans, carrots and beets, I have to pick before I have enough identical specimens to make up a display plate.

"Uniformity," said Joanne, "that's the key. It is the single most important element in winning a blue ribbon. That and following the directions in the premium book exactly. Exhibits are disqualified all the time because a display plate has more or less than the required number of specimens. If a category requires five tomatoes, for instance, a plate of six will lose the chance to compete, and it doesn't matter how beautiful the tomatoes are."

Conrad Halberg, who co-superintends the Roundhouse with Joanne, said that uniformity was so important he often chooses his seeds with that in mind. He said many catalogs will note what varieties of a given vegetable tend to pho-

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duce uniformly. This makes finding five or 15 specimens a little easier.

I had never noticed this before, but I glanced through my Burpee and Stokes catalogs, and, sure enough, Conrad was right. Burpee says that Danvers Half Long carrots are "very uniform" and that Super Snowball cauliflower is a "dependable, uniform variety." Salad Hybrid Pickling cukes make "uniform slices for bread and butter pickles."

Stokes notes that Danvers carrots and Amstel, a miniature carrot, are uniform varieties, as is Snow Crown cauliflower.

Conrad said that last year he thought there was only one entry in the broccoli class. (I'm making note of that. It ought to be easy to win a ribbon if there is so little competition.) However, he said that carrots, beets and tomatoes were very large classes. "Last year we had so many onion entries that we had to split them into three categories, Spanish, white and yellow." It would be quite a coup to win when the competition is so stiff.

Then there are the largest pumpkin and squash classes. Big Max pumpkin seeds is advertised as being perfect for largest pumpkin contests and should average about 100 pounds. Conrad said that Hungarian Mammoth squash isn't very good for eating, but Stokes says it's "great for fall fairs, reaching 100-200 pounds each."

I found out that I needed to have a couple of classes explained to me.

Thick-walled peppers are common bell peppers (Bell Boy and California Wonder), but thin-walled peppers are hot peppers like Hungarian Wax and Long Red Cayenne.

Once you have chosen uniform varieties, and planted a little extra for the fair, it is important to tend the garden carefully to insure high quality vegetables. Conrad Halberg said that meat organic gardeners were going to have to keep a close watch and handpick bugs if that became necessary. Unblemished and unscarred skins are vital to the winning of a blue ribbon.

In addition to the displays of single vegetables, there are the large, mixed displays and the Chopping Bowl competition. The person who artistically arranges a variety of vegetables in a large chopping bowl or other similar container can win a \$15 first prize. Even fifth place will collect \$6. Conrad says that using greens as a background works very effectively and that kale, with its heavy, crinkled leaves, is a good choice for this use. This is one of my favorite exhibits because it illustrates so beautifully not only the high quality that is produced by the home gardener but also the variety and abundance.

There are 33 categories in the canning competition, and for the resident of Franklin County who wins the most blue ribbons in the canning field there is the Fred Wells award — \$30 for first prize and \$20 for second prize. This makes it obvious that entering exhibits in the fair is not only fun, but it can also be profitable.

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