

INTEGRATED PEST MANAGEMENT - ALFALFA HAY

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I am a private consultant in row crop production. I have served growers in Tulare and nearby counties for the past 15 years.

I originally worked wholly with cotton, but with the outbreak of Egyptian Alfalfa Weevil some 12 years ago, I began to work extensively with alfalfa hay. The scope of my work has increased each year. I am now working with most Valley crops. I employ seasonal field help as field checkers who note the cultural practices followed and record insect numbers and kind.

Integrated Pest Management is my main "bag". I believe that IPM is an explosive "buzz word" to many Californians. It appears to have different meanings to different people. For myself, it means total crop management--entomology, disease, fertility, time of planting, water management, soil conditioning, check width and length, varieties, weed control and the whole gamut of factors that must be considered in successful hay production.

In most fields there usually tends to be one main limiting factor which is often the key to full production. Finding this key is my job and I must look at the total picture with an open eye--not with "blindness".

During the last 6 years checking alfalfa hay has changed dramatically. Basically it used to be a fairly simple task, but with increased numbers of weevils, worm populations and aphids, monitoring has become a full time activity. Timing of hatching of egg masses and trying to observe the cutting date, all help decide the economics of whether to treat, or not to treat.

As an independent pest control advisor I am paid to give an unbiased opinion of the problem based on my knowledge and the factors as I find them in the field. The remedy to solve the problem is also unbiased, and is also based on my knowledge and the factors concomitant to the particular field.

I believe that an independent pest control advisor is similar to most supervisory ranch employees. His job is somewhat different, however since he receives his pay on an acre basis for his skill and knowledge to diagnose and solve a particular problem.

Details of our work are very important and to gather them all together involves much leg work and time. Gathering this information accurately and assessing all the factors can be the key to good crop growth. Anything that would permit a more rapid assembly of the facts would be helpful. A computer model of alfalfa offers enormous potential to the pest manager as well as the grower. Last summer I cooperated with Dr. Charles Summers of the University of California, Entomology Department, in developing a computer program covering the Egyptian Alfalfa Weevil. I discovered that this model could save valuable time and divide most alfalfa fields into categories that would permit a more accurate and rapid assessment of weevil problems. These three categories are:

1. Fields with low insect populations far below the economic thresholds. Such fields can be eliminated from the possible treatment list quite early.

2. A delineation of fields likely to be needing weevil control sufficiently early enough in the season when beneficial insect balance will not be disrupted. Such knowledge will permit build-ups of beneficial insects and allow biological balance between the harmful and beneficials to exist during the productive part of the year.

3. The computer model will show those fields that are questionable and will pin point them for the pest manager and the grower so constant vigilance and sampling can be carried out.

The use of heat-degree units has been placed into the model and by comparing past performance with the heat units during a point in time one can estimate approximately what the insect population would likely be.

The computer can absorb other important factors such as cutting or harvesting dates which in turn will be reflected in the print-out on a particular field.

Aside from Egyptian Alfalfa Weevil problems, worms such as alfalfa caterpillar, beet army and yellow-striped are likely to strike in late spring or early summer. The presence of these insects tend to be greatly aggravated where excess insecticide was used early to control weevil and the build-up of early developing beneficials was slowed or disrupted. Some seasons are worse than others due to weather conditions that also favored heavy build-ups. Careful field monitoring at regular intervals by qualified checkers is the independent pest manager's way of making careful assessments. There must be sufficient qualified man-power to gather the necessary data for a careful diagnosis.

All of this narrows down to the need for a complete alfalfa hay study similar to the Cotton Pest Management Program we saw in recent years. With some coordination of the working pest control advisors in the field, new data or economic thresholds could be devised. Right now there are probably as many methods of using the sweep net in alfalfa as there are pest control advisors. That doesn't help correlate any data. At least when I discuss sweeping with a fellow colleague in the field we both try and sweep the same to standardize our sampling data. At the present, a multitude of "gut" feeling is used to form judgement for a particular situation. Most of the "seat-of-the-pants" decisions are only able to be thought out through a process of trial and error based on one's experience and careful judgement.

Integrated Pest Management research methods and technology are changing rapidly as well as the organizational units involved in implementing them. Private consultants and extension workers (the primary units involved) must define their areas of responsibility. Once this has been accomplished we can move further into the development of systems that will use all of the Integrated Pest Management inputs. I believe that both groups private and extension are essential to further development of better Integrated Pest Management systems.

Today the modern farmer is a real "dollars and cents" man. His decisions are almost always dealing with "the bottom line". I feel the same is true in justifying my time spent in the field, as long as I continue to have a broad outlook to search for the single limiting factor affecting yield, whether it be insects, irrigation, soil density, or fertility problems, my job is worthwhile.