Final Project Report to the NYS IPM Program, Agricultural IPM 2000 – 2001

Title:
Building the Perfect Sweep Net: Learn How This IPM Tool Can Help Save Money and Improve Alfalfa Quality

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Type of grant:
Training practitioners to use IPM techniques

Project location(s):
Yates County

Abstract:
Injury from potato leafhopper (PLH) feeding is a major cause of yield and quality reduction of alfalfa. If not recognized in a timely manner, PLH injured alfalfa can affect a dairy producers bottom line. While working with Mennonite farmers in Yates County, the lack of knowledge of alfalfa IPM became evident. Farmers were not practicing any pest management, spraying prophylactically, or using their hats to sweep for pests. Our educational programming on how to make and use sweep nets helped growers identify and implement IPM practices to manage leafhopper populations. Close monitoring of PLH also assured proper timing and justification of insecticide applications. Overall, we demonstrated to these growers how this IPM tool could help them save them money by producing a higher quality feed for their cows.

Background and justification:
Yates County continues to grow in the number of new dairy farms. Ninety percent of the 234 dairy farms in the county are Mennonite owned. Most of these farms consist of 40 cow dairies on about 100 acres. An average of 30% of that acreage is in constant alfalfa production.

The TAg Teams last year were a first step in assessing the educational needs of Mennonite growers in Yates County. Thirty-five growers attended at least one of our 12 meetings. These growers became very interested in adoption of IPM practices after the benefits were demonstrated in the field. The NWNY Team purchased a dozen sweep nets through Ward's

Biology and sold them at cost ($35). Because of the high cost, many of these nets were shared between family members and neighbor farms, therefore, reaching a much wider audience. This demonstrated to us that if nets were available at a reasonable cost, growers would be willing to adopt this technology. A wider adoption of sweep net use for potato leafhopper monitoring and control would result in better alfalfa management resulting in higher quality feed. This would be a significant financial benefit for small dairy farms.

Objectives:

1.) Provide an educational program on alfalfa insect pest management
2.) Provide participants with materials for assembling their own sweep nets, thus strengthening ownership in the program
3.) Demonstrate proper sweeping techniques and sampling procedures in alfalfa
4.) Develop an evaluation method that will also provide an accurate record of pest populations and management tactics throughout the growing season

Procedures:

1.) Because of the limited travel abilities of Mennonite growers, four programs were held throughout the county. A participating grower hosted each program and their farm was utilized as an outdoor classroom. Each workshop lasted approximately 2 hours. The workshop revolved around all aspects of alfalfa insect pest management. This included identification, biology, and life cycle of pests and beneficial insects, sampling methods, economic thresholds, and management decisions. Each participant received a copy of the Pocket Guide to Alfalfa and Field Corn Management and two NYS-DEC certified pesticide applicator credits for completing the program.

2.) Working with growers and businesses within the Mennonite community, we were able to manufacture and construct most of the hardware needed to build a sweep net. All dimensions were taken from a regulation sweep net to stay consistent with Cornell sampling plans and economic thresholds. The wire rims were fabricated at a Mennonite owned metal shop in New Holland, PA. The material for the handles and other hardware were purchased from a local hardware store. Handles consisted of ¾ inch electrical conduit with a rubber bicycle handle on the end. Two ½ inch lock bolts were hammered into the other end of the conduit. A ½ inch by 1.5-inch carriage bolt was then used to secure the wire rim to the handle. The muslin nets were made with cooperation between the Yates County Extension office and a local 4H Youth group. The material was purchased locally and the 4H club earned three dollars per net as a fundraiser.

Overall, we had enough nets, rims, and handles for sixty sweep nets. As part of the workshop, the participants assembled all the sweep net parts to build their own nets.

3.) Using a sweep net can be very intimidating to someone who has never handled one before. Therefore, the proper sweeping technique was first demonstrated and then practiced by the growers. We did not continue until everyone was comfortable using his own net. The class then divided up into small groups, spread out, sampled the alfalfa, and the number of leafhoppers per

sweep was determined. At this point, the different management options were discussed and the group collectively made an appropriate recommendation for that field.

4.) A 3X5 inch card was developed to assist growers in keeping track of field counts of potato leafhoppers when sampling. The front of the card had written and picture instructions on how to correctly sweep for potato leafhoppers, sample, and decide if management was needed. The back of the card had the sequential sampling chart and economic thresholds to determine whether or not to treat. These cards were very similar to the sampling cards used by past TAg programs. Participants were given a stack of these cards and asked to record PLH numbers throughout the rest of the season.

Results and discussion:

At the completion of our programs, forty-one growers had learned how to utilize their new sweep nets and implement a PLH management plan on their farms. However, the results of this program will reach much further into the Mennonite community. These sweep nets will be shared with family members and neighboring farms.

Twelve of these growers were also members of two of my TAg Teams in Yates County. All of these growers adopted sweep nets to monitor PLH on their farms. Many other participants would call me for reassurance that they were sampling correctly. Additionally, three growers who sampled and were on the edge of treating for PLH, requested a personal visit to double check their findings.

Proper pest identification is the cornerstone in any pest management program. One of the most important lessons learned by these growers was the correct identification of PLH. Prior to these programs, a few growers sprayed their alfalfa for what they thought was PLH. The misidentification of pea ahids for PLH cost these growers up to a thousand dollars each. They will not make that mistake ever again.

Overall, PLH populations were not a problem in established fields in 2001. Populations arrived later than normal and the timings of cutting kept populations from increasing. Therefore, sweep net useage probably was not as prevalent as it was in 2000. However, sweeping was useful in new seedings where PLH populations were able to build up and damage young plants.

I feel one of the biggest successes of this program was the integration of the Mennonite community (growers and businesses), Cornell Extension, and 4H Youth. We were all able to come together to produce a very useful tool. The Mennonite community is very tight knit, and trusting outside institutions is a major concern. Our involvement in this project has helped breach that trust barrier and Cornell Extension is gaining ground as a trusted resource within the agricultural community.