

Title: Integrated Pest and Crop Management TAg Teams in NWNy

Project Leader(s):

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Abstract:

Tactical Agriculture Teams (TAg) have proven effective for teaching farmers, agri-business representatives, and extension personnel the principles of integrated pest management (IPM) as well as nutrient management and improved crop cultural practices. Since 2000, the NWNy Team has successfully developed fourteen TAg teams with dairy producers throughout Yates, Ontario, Seneca, Monroe, Livingston and Wayne Counties. In 2006, three teams were developed in the Finger Lakes region in Seneca, Yates, and Livingston Counties. These teams were very diverse in farming backgrounds and ranged from traditional, Mennonite and Amish producers. Despite the diversity, the hands-on approach of the TAg program was an effective teaching model across all types of farms. This was the first attempt to introduce extension programming to some of these audiences and was viewed as a great success.

Background and justification:

The concept of organizing a small group of members from the agricultural community into TAg Teams has been well accepted in the Finger Lakes Region. Since 2000, The NWNy Team has organized 14 teams with 92 members, predominantly dairy producers. TAg Teams provide members with a learning environment within a small group who are usually neighbors. There is a built in comfort level and growers feel less intimidated about new concepts and asking questions. Meetings are normally close to their farm and therefore, they do not spend much time traveling to the meeting. In the case of Mennonite or Amish communities, distance to travel to a meeting is crucial in their decision to attend.

A large portion of our time is spent on IPM topics for corn and alfalfa out in the TAg member's fields. This in-field classroom approach is very interactive and hands-on. Teaching IPM techniques on small to medium sized dairy and crop farms seems to be more beneficial when it comes to sampling and implementation. This is mainly due to smaller field sizes and these farms usually do all their own spraying and application of inputs.

Yates County TAg Team – Mike Stanyard

The NWNy Team has been heavily involved with implementing corn and alfalfa TAg Teams within the steel wheel communities of Yates and Ontario Counties. These small dairy farms of 40-50 cows and 100-150 acres of crops are the perfect size for implementing their own IPM programs. The number of dairy farms in Yates County continues to increase. Many are young

producers moving away from the family farm and could use a little help with initiating a crop and pest management program. In 2006, the team moved into an area of Yates County in which we had not worked in before and established a team of 6 dairy producers within a two miles radius.

Livingston County TAg Team – Mike Stanyard

The NWNy Team continues to work with producers on agricultural environmental management issues particularly when they are farming on the outskirts of one of the many Finger Lakes in the region. The team was working with a group of dairy producers located on Conesus Lake on reducing soil, fertilizer, and manure runoff into the lake. TAg was the perfect opportunity to expand our extension outreach to include crop and pest management into their overall farm management program. Five dairy farms within the Conesus and Hemlock Lake watersheds were brought together to learn more about corn and alfalfa IPM.

Seneca County TAg Team- Mike Dennis

In effort to reach all farm clientele in Seneca County the use of the TAg teaching format served as a useful means to work within the dairy sector of the local Amish community. Based on response and interaction with this group at other meeting and or educational venues it appeared that Corn and Alfalfa TAg would be a justified program to bring to this group. Efforts were initiated during the winter of 2005-2006 to recruit a group of Amish dairy farmers within a neighborhood radius using current contacts from within the community. As a result a team of 8 Amish dairymen was put together that would meet on at least a monthly basis throughout the growing season to discuss corn and alfalfa related Integrated Pest Management and crop management issues. Meeting times and places were set according to the schedule of participants as well as the timeliness of topics coupled with results of crop scout findings in the field. This was a new audience for CCE using this approach.

Objectives:

1. Establish three TAg Teams in the NWNy area for 2006
2. Encourage growers to take soil tests on all fields and PSNT's on cornfields where needed
3. Develop timely pest management notes and reference materials to participants for inclusion in an IPM reference notebook
4. Expand the use of scouting data so information gained is placed on the NWNy Team website and used in TAg Notes, "Mike's Pest Update", and Ag Focus newsletter
5. Evaluate impact of program

Procedures:

1.) In 2006, three teams were established in the NWNy region. One Mennonite team of six dairy producers was established in Yates County just south of Penn Yan. A second team of five small dairies was established in Livingston County around Conesus Lake. The third TAg team was established in Seneca County. Initially, this team consisted of eight Amish Dairymen and grew to 10 participants during the middle of the summer. The Yates and Livingston County TAg Teams were lead by Mike Stanyard and Nancy Glazier. The Seneca County Team was taught by Mike Dennis and summer assistant Joi Strauss.

Meetings were scheduled approximately every three to four weeks during the growing season with each participant hosting a TAg meeting at their farm. All farms were viewed as open classrooms and pest management and crop cultural practices were viewed and discussed in the field. In all cases, the main commodities grown were corn and alfalfa with some small grains and pasture. Between the three teams 15 meetings were held throughout the season.

2.) During our first meeting, the teams discussed local soil types, pH testing, soil sampling procedures, interpreting lab results, and fertilizer applications. As corn reached 12 inches in height, Pre-Side dress Nitrate Testing (PSNT) was the focus of crop management. The summer assistant (crop scout) collected soil samples on fields (entered in the program) as needed including all corn fields for analysis for PSNT. The results of the PSNT's were presented and discussed at the time of side dress nitrogen application.

3.) Each TAg member was given a three-ringed binder to be used as an IPM notebook. The notebook was utilized to incorporate handouts given at each meeting. Insect fact sheets on most of our feature pests (alfalfa weevil, black cutworm, early corn pests, potato leafhopper, and corn rootworm) were handed out to growers to keep for future reference. Most of these were accessed through the NY IPM web page. Other references included information on how to soil sample, submit a soil sample, and fill out the appropriate information sheet. Also included were pesticide application record sheets from the DEC, NWNy Team monthly newsletters (AgFocus) and the 2006 Cornell Guide to Integrated Crop Management.

4.) Each TAg member picked one cornfield and one alfalfa field that Nancy Glazier (Yates & Livingston) or Joi Strauss (Seneca) scouted once a week throughout the summer. If problems such as weeds, diseases or insects were found to be over thresholds, growers were contacted and we worked with them on a one-on-one basis. Nancy and Joi gave scouting reports from all farms at TAg meetings to give growers an idea of pest populations in the surrounding area. If a pest problem or crop condition was present on a majority of farms, then this issue became a priority topic for the next meeting.

Sampling data were also placed on our NWNy Team web page (www.nwnyteam.org) on a weekly basis. Nancy has her own section to post results from each county. Mike Stanyard also used these scouting reports in greater detail on "Mike's Pest Update" and in TAg Notes. The TAg Notes Newsletter was published four times during the growing season. Most of the pest information from the TAg teams was accumulated by commodity and mailed out to over 800 producers across the nine counties that the team covers. Nancy also wrote articles about TAg team activities in the team's newsletter, Ag Focus. This publicity has helped promote TAg Team participation in NWNy.

5.) During the first meeting, all three teams completed the pre-questionnaire with 27 questions covering all aspects of crop and pest management. At the completion of the program, two of the teams have completed the post-questionnaire and the percent increases recorded. In addition, participants were asked to fill out an exit survey about possible adoption of IPM and crop practices for the future.

Results and discussion:

The TAg programs were successful again in 2006. The NWNY Team continue to expand the TAg team offering with new producers, areas and counties. The initiation of TAg into the Amish community in Seneca County by Mike Dennis is a perfect example of this continued goal. Mike Stanyard continues to work smaller English and Mennonite farms in the Finger Lakes region as these producers gain the most impact from the corn and alfalfa TAg program.

Throughout the growing season, TAg teams learned how to assess pest populations and their potential for crop damage, including insects, weeds and diseases. Most of the participants were dairy producers and therefore, crop pest education consisted of alfalfa and grain and silage corn. Insect pest management education included alfalfa weevil, wireworm, seed corn maggot, white grub, potato leafhopper, armyworm, black cutworm, corn borer, and corn rootworm.

Alfalfa weevil feeding was more prolific in the Finger Lakes region than normal. None of these participants have ever sampled or sprayed for weevils. The weevils got a early start due to the warm spring and many fields had third and fourth instar damage on second cut regrowth. As a result, some fields had to be sprayed and monitored further. However, natural controls such as parasites and viruses were prevalent and some of the larger populations crashed in a matter of days.

Potato leafhoppers populations were down overall in the Finger Lakes regions but were surprisingly prevalent in Yates County through the whole summer. Most alfalfa fields that Nancy scouted were over threshold and most had to sprayed. These producers would not have monitored these fields which would have resulted in tonnage and quality losses. This would have been worse on the new seedlings which all were sprayed. A side-by-side comparison of PLH resistant versus non-resistant on one producers farm was a great teaching tool. These fields were “off the beaten path” and had not been monitored after first cutting. When we returned 30 days later the PLH was green and tall while the conventional alfalfa was bright yellow and only a foot tall. The economics spoke for itself.

Corn rootworm continues to be the number one corn pest for dairy producers growing continuous corn for silage. All the farms were using either a soil insecticide or Poncho seed treatment for rootworm management. However, most were not using it until the year after they were detecting root damage or lodging. None of the producers knew how to scout for rootworms. Learning how to determine whether or not they should spend \$18/acre was very valuable to these producers. Every corn field entered in the scouting program was above threshold for next year. Lets hope they follow through with what they learned.

Managing pests in the barn has also emerged as a hot topic. This year we had Keith Waldron, IPM specialist, come up to speak to all three TAg teams on fly control in confinement areas. All the teams commented on the value of Keith’s information on the use alternate management techniques to spraying including sticky traps, parasitoids, and baits. Based on the positive reaction of the team members, we will continue to address this pest in the future.

The scouting service was a very valuable tool and provided significant buy-in by the growers to become part of the TAg Team. This was very attractive to them since most of these farms did

not scout for insects such as potato leafhopper and western corn rootworm. Many of the growers told me they looked forward to seeing Nancy each week and were anxious to see the scouting results. If there was a field that was close to or over threshold, the grower was personally contacted that day and a management decision was made on the spot.

The results of Nancy's scouting reports were also integrated into a newsletter called TAg Notes. Four issues were released throughout the 2006 growing season. TAg Notes was released in a timely basis when certain pests of corn, alfalfa, and soybean were at or nearing economic thresholds. This newsletter did not just go out to TAg Team member's but to our whole NWNYS mailing list of close to 800 recipients in nine counties. This timely newsletter gave other producers a heads up on when and what to look for in their own fields.

Another attractive facet to TAg Team participation was pesticide certification points. The NYS IPM Program really saved educators a lot of time and headache by pre-applying for credits based on key meeting topics (alfalfa weevil, potato leafhopper, corn rootworm, etc.). This is particularly important to Mennonite and Amish producers who all hold private licenses and are limited in their ability to travel long distances to meetings.

Pre and post-tests were given at the first and last meetings of the year to measure any impact our TAg program may have had on the knowledge base of our team members. Both teams increased their general knowledge of integrated crop and pest management. Test averages for the Yates team increased 26% from 50 to 76%. The Livingston County team average test scores increased 18% from 65 to 83%.

All of the participants highly agreed that this experience helped them understand the importance of pest and crop management issues on their farm.

Seneca County TAg Team (submitted by Mike Dennis)

In an effort for Cornell Cooperative Extension of Seneca County to build trust and confidence with the Seneca County TAg team traditional evaluation techniques utilized in the TAg program were modified for this project. At the first meeting farmers completed a pre-questionnaire that served as a resource to Mike Dennis for planning and initiation of future meetings of the group. At that time participants were assured that results of the questionnaire would remain confidential. The primary evaluation tool used for this TAg team was interaction at meetings and one on one follow up throughout the growing season.

The farms involved in this program were very similar in all aspects of operation particularly in regard to animal numbers and the amount of corn and alfalfa acres. On average each farm managed 45-50 mature dairy cows with appropriate young stock, 30-35 acres of corn and 30-40 acres of alfalfa. In addition, several farms utilized varying acres of pasture.

Based on feedback directly from participants at both group meetings and individually several things are notable. Use and awareness of IPM techniques has increased as a result of this program. In particular the use of threshold tables for monitoring pest populations was accepted by the group as a valuable tool to avoid or limit the use of pesticides. For example participants commented that knowing a corn field has reached threshold numbers for corn rootworm beetles

allows them to potentially reduce insecticide purchases, choose to treat the next corn crop, or manage their crop rotation accordingly. It is my best estimation that the use of pesticides will likely go down, and at least be utilized on a field by field basis, based on comments from participants. In general some participants commented that they treat corn or alfalfa acres based on what is practiced on neighbor farms or just because they have not known any different. This practice is changing.

Of great interest to the group was having someone scout their fields on a regular basis. This service served the participants two fold. First, it gave the farmer insight of what was currently happening in his field. Second, it allowed the farmer to see the ease at which different scouting techniques can be utilized with a small amount of training, in particular insect monitoring. For example, at least half of the participants owned or had access to sweep nets but had limited or no training on their use. Participants were instructed in the use of sweep nets during the course of the season.

Evaluating soil samples with the PSNT offered yet another impact. This was a technique that everyone was interested in particularly with the increased cost of nitrogen fertilizers. This tool aided the farmer in making more informed decisions on manure and commercial fertilizer management in regard to their corn rotation. We were also able to dispel some of the myths about this management technique.

Outreach is firmly believed to extend beyond the scope of this 10 farm group. Quite often at meetings members would comment on conversations with other farmers within the Amish community. Team members would share information and or resources to others and bring questions to meetings that came about from these interactions outside of the group.

This group of farmers is much attuned to the associated costs of field crop and livestock management. Participants were regularly able to repeat costs per acre for corn rootworm insecticide from memory and analyze change in practices.

Project location(s):

Seneca County, Interlaken

Yates County, PennYan

Livingston County, Livonia