

## **Sweet Corn Pest Management Plan Completed for the Northeast**

When the Vegetable IPM Working Group set about deciding which of the key vegetable crops would be the top candidate for a region-wide Pest Management Strategic Plan (PMSP), we considered many factors. Is it grown region-wide, by a large number of growers, on a lot of acres? Is it popular and increasing in acreage? Are we losing pesticide materials or do we need new research? Is it used in both fresh market and processing? Among major vegetable crops such as peppers, tomato, pumpkins, potatoes, and sweet corn, it was sweet corn that was ranked on top.

Collectively, the 11 northeastern states produce 23% percent of the total U.S. crop of fresh market corn, as well as 14% of the processed corn in the country. Regionally, sweet corn represents 30 percent of the vegetable crop acreage (110,800 acres), and is grown by 50 percent of the nearly 6,000 vegetable farmers in the region (2002 Census). Total value of sweet corn in the northeastern states is \$157,951,000 for fresh market corn and \$29,110,000 for processed corn. As anyone who grows this crop knows, pest control is challenging, and absolutely critical in order to produce a marketable crop.

Some were skeptical about undertaking a region-wide PMSP effort – after all, aren't the growing conditions and the pests dramatically different, between Maine and Delaware? We proposed to accommodate those differences, and try to find common issues. With funding from the Northeast IPM Center, we convened a two-day workshop in Albany, New York, in December 2004. We had sweet corn producers, Extension sweet corn specialists, and industry representatives from across the region. As anyone who has participated in one of these workshops knows, no stone is left unturned in reviewing pests, pesticides, pest management practices, what works, and what is needed. This input provided the basis for the PMSP recommendations. Further grower input was gathered from two additional sources: a survey of New England sweet corn growers conducted by the University of Massachusetts in 2004 and a NASS survey of growers in Pennsylvania, New York, and New Jersey.

Growers indicated that the major caterpillar pests (corn earworm, European corn borer, fall armyworm) along with corn leaf aphid present their biggest challenge in insect pest management. The predominance of synthetic pyrethroids, and to some extent the carbamates among the insecticides that are available—and are considered effective—is a major concern. Growers indicated a strong need for alternatives that provide a different chemistry; are effective, reasonably priced, and safe for handlers; and have less impact on natural enemies. Until these are available, maintaining current registrations for non-pyrethroid products is important.

Alternatives that are highlighted in the recommendations include alternative chemistries, biological control, and transgenic (Bt) cultivars. Growers also have a need for resources and tools to enable them to implement IPM practices at the farm level, regardless of farm size or location. These include education about beneficial insects, pest identification, and

new chemistries. The challenges facing organic sweet corn producers are also discussed in this PMSP.

Weed management in sweet corn requires herbicides that will effectively control annual broadleaves, grasses, and perennial broadleaf weeds. New chemical control options are needed for weeds, including short residual herbicides, and both pre- and post emergence options. Until new chemistries are available, registrations for critical uses should be maintained. Cultivation is widely used as a supplement to herbicides, and organic farmers depend upon cost-effective cultural and mechanical methods for weed control.

Management of insect and weed pest problems often has an effect on the presence of disease problems. Although the use of seed treatments and resistant varieties has dramatically reduced the incidence of many sweet corn disease problems, several diseases still present potentially significant economic losses if not properly managed. Growers indicated that Stewart's wilt, common leaf rust, common smut, and stalk rots are the most important diseases in terms of the percentage of acres infested.

Vertebrate pests cause significant losses. Birds, raccoons, and deer were ranked as the most serious pests. A variety of control methods and repellents are used with varying effectiveness. Growers noted the need for effective seed treatments against bird pests of seeds and seedlings.

The Vegetable IPM Working Group is celebrating the completion of this project, and is grateful for the diligent, hard work of Kerry Richards of Penn State University, who led the workshop, and compiled, wrote, edited and re-edited this large document. You will find this document at [www.ipmcenters.org/pmsp/pdf/NE\\_Sweet\\_Corn.pdf](http://www.ipmcenters.org/pmsp/pdf/NE_Sweet_Corn.pdf) and an executive summary, priorities, and recommendations posted at [northeastipm.org/iwg/veg/2006/sweetcornpmspexcerpt.htm](http://northeastipm.org/iwg/veg/2006/sweetcornpmspexcerpt.htm). We hope that this document will now be used to help guide research, extension and regulatory agencies and funding organizations in their decisions about this key vegetable crop. We also hope that, by showing how we have common needs and concerns across the whole region, we have laid groundwork for more collaboration and work together.

Written by Ruth Hazzard, University of Massachusetts Extension, December 2006