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Aster Yellows is Here! By Sally Miller and Casey Hoy

Aster yellows is a serious disease of lettuce, celery, carrots and other vegetable crops in Ohio and many other states. It is transmitted by the aster leafhopper, which migrates into Ohio in late spring. If the immigrant leafhoppers are infected with the phytoplasma that causes the disease, and are present in sufficient numbers, aster yellows can be a problem.

2005 Ohio test results: Leafhoppers were collected from two farms in Celeryville in late May and one farm in Hartville in June and tested using a Polymerase Chain Reaction (PCR) assay. In Celeryville, a small sample from one farm was negative; a larger sample from the other farm had 10.8% aster-yellows-positive leafhoppers. In Hartville, 8% of the leafhoppers sampled were positive for aster yellows.

The numbers of leafhoppers observed and percentage infected are high enough to result in serious aster yellows problems. Leafhopper control in susceptible crops, especially lettuce, over the next few weeks will be crucial in minimizing the epidemic over the remainder of the growing season. The two most important times to control the leafhoppers are approximately 7-14 days after transplanting or emergence and approximately 21-14 days before harvest. The first timing is to protect the current field from infection by incoming adult leafhoppers, and should be a material with long residual activity. The second timing is to prevent any leafhoppers that have developed in the field from moving the disease to other fields, and should be a material that provides thorough and rapid control of nymphs. A distance of at least 60 yards between susceptible fields, and especially moving plantings for the next few weeks as far as possible from current plantings, can also reduce the movement of leafhoppers between fields and reduce the disease.

Weed Control in Cucurbits by Doug Doohan

With the heat and good soil moisture in many areas of the state, seeded crops are more than cracking; they are bursting out of the ground and growers are getting caught without pre-emergence (PRE) weed control in place. In cucurbits this can be a critical concern because of the very few post-emergence (POST) products available. If cucurbits are seeded but not emerged Sandea, Strategy, Curbit and Command 3ME are all legitimate choices. PRE products such as Dual Magnum and

Outlook are not yet registered on cucurbit crops. Sandea PRE is probably the most effective way to go after heavy lambsquarter populations. Both a PRE and a POST Sandea can be applied to most cucurbit crops. If two applications of Sandea are likely, don't exceed 1/2 oz/A per application. A non-ionic surfactant (NIS) must be included with Sandea POST. Many growers have also had good luck with a combination of Strategy PRE (Strategy is a premix of Command and Curbit) followed by Sandea POST.

Generally Sandea should not be applied from ground-crack until at least the 2 true leaf stage of the crop. POST Sandea applications applied too early (ie before 2 true leaves) may cause severe chlorosis from which the crop will only slowly recover. If cucurbits have cracked or emerged before PRE sprays were applied, cultivate immediately to kill white-thread stage or emerged seedlings (or spray a non-selective herbicide with a shielded sprayer). Chances are with the heat the crop will move from ground crack to the 2 true leaf stage quickly and POST treatments can be safely applied. Remember that Sandea POST controls a wide range of broadleaf weeds but does not control emerged lambsquarters. POST applications targeted at pigweeds, ragweed and morning glories (not labelled but sensitive at the very early seedling stage) will prevent further emergence of lambsquarters for several weeks.

Why You Should Complete Prevailing Wage Surveys

By John Wargowsky, Executive Director, Mid American Ag and Hort Services

I consistently hear Ohio employers of seasonal and migrant workers express concern about the availability of legal and willing workers in agricultural activities such as nursery, sod, fruit, vegetables and livestock. One program that increases Ohios capacity for such workers is the H-2A temporary agricultural guestworker program. In 2005, about 52 employers have applied to obtain nearly 1,000 legal workers to enter work at their farms and nurseries as nonimmigrant temporary workers. Even if you dont use the H-2A program at your farm or nursery, you benefit from an increased capacity of legal and willing workers in Ohio.

To facilitate this program, the Foreign Labor Certification Unit of the Ohio Department of Job and Family Services (ODJFS) is required to conduct Prevailing Wage Surveys. The information collected from these surveys assures that the foreign H-2A temporary workers and domestic workers receive the same pay. This assures no domestic workers, including permanent residents and U.S citizens, are being adversely affected by the program.

All individual survey information is protected by the Federal Privacy Act and only collective information is published. This information is published on-line at <http://workforcesecurity.doleta.gov/foreign/aowl.asp>.

The bottom line is that I encourage employers receiving such surveys from ODJFS to take the time to accurately complete and return the surveys. This process improves the employment capacity for Ohios agricultural and horticultural employers.

Crop Reports Southeast Ohio 6/15/05 by Hal Kneen

Weather is foremost on the minds of local vegetable growers. Sunny, summer weather has arrived, 9 days over 90 degree temperatures and overnight temperatures above 65 degrees Fahrenheit. Perfect tomato growing weather and the plants have responded with leaf & stem growth and setting of tomatoes. Some growers are concerned that dew is not drying up on the leaves until almost noon, making early blight a potential fungus problem. Continue spraying with the fungicides of choice. Remember to alternate strobilurins with Bravo or Mancozeb like products. Nine days without any rainfall. Approximately 1/4 to 1/2 inch rainfall Tuesday night, June 14th. Vinton County had marble sized hail with the rain. Majority of growers irrigating tomatoes, peppers, vine crops. Some fields of sweet corn that are in tassel are being irrigated with 3/4 to one inch of water twice a week.

Finishing suckering of later planted tomatoes. Trellising tomatoes. Peppers are beginning to set fruit. Vine crops are beginning to run and soon should be in flower.

Insect trap count: No European Corn Borer or Corn Earworm have been trapped in helio traps through Tuesday June 14th. Have spotted no European Corn Borer damage in corn tassles or leaf whirls. No Beet Army Worm moths have trapped through June 14th.

Southeast Ohio 6/16/05 by Stephen Schumacher

Pumpkins: Have noticed heavy cucumber beetle activity on young pumpkins. There has been a need to spray. Pumpkins seem to be doing well...Pumpkins planted during the first week in June germinated quickly and are growing rapidly.

Got some needed rain this week.

Sweet corn - Growing well with the warm weather that we have had the past two weeks. Got some needed rain this week.

Reports of green beans having to be replanted.....leaves growing slowly.

Wayne County Report by Ron Becker 6/15/05

European corn borer moths were easily seen while walking fields on Monday (6/13). However, the number of corn plants infested with larvae remains low (1-2%). Several fields of onions had to be sprayed last week for thrips. Two spotted spider mites are showing up at threshold levels in strawberries and eggplant. We expect to find them soon in vine crops. Cabbage fields are going over threshold for diamond back moth larvae and imported cabbage worm. Flea beetles are also going over threshold in cabbage, potatoes and eggplants. The aphid population seems to have leveled off for right now with few fields going over threshold this past week. This may be due in part to the many beneficial insects we are finding in the fields. Bean leaf beetle populations seem to be going down as well. We still have more sweet corn to be planted and tomato, pepper and melon transplants to go into the ground.

So, Just How Clean is Your Water? June 2005 by Shari L. Plimpton, Ph.D., Food Safety Educator - Ohio and Indiana Specialty Crop Food Safety Initiative

As we work through another year of helping growers with the application of Good Agricultural Practices (GAPs) to their fresh produce operations, I am repeatedly reminded of just how important, and potentially confusing, is the issue of water quality. First of all, we emphasize in our education programs that water quality is one of the most critical control points for minimizing the risk of foodborne illness. Of course, water contamination of any kind: chemical or microbiological is to be avoided both out in the field and in the packing house. In the GAPs program we provide recommendations based on good, general science yet, we emphasize that no standards have been established for fresh produce. Ultimately we end up applying the standards for potable water and wait for the research to tell us if we have any other options or considerations.

I have written before about the standards for water testing and treatment of wells and will repeat just a few words about it here. Anyone who has heard me speak, has heard about testing wells annually and open water sources quarterly for fecal coliform and E. coli. During farm consultations we provide Standard Operating Procedures (SOPs) that give growers methods for solving a contamination problem whether its for water intended for use out in the field, or for water used in the packing house. Those SOPs generally rely heavily on the use of chlorine (in its variety of forms) to treat the water, killing bacteria present in the water and, depending on the level of free chlorine in the water, killing some bacteria on the surface of produce being washed.

And yet the world is a changing place, new problems pop up, and, if we are lucky, new solutions present themselves as well. Some growers are using sanitizers other than chlorine to solve a number of problems inherent to using chlorine (fumes, corrosion, discharge issues, to name a few). Some of the methods I have seen more commonly employed in the Midwest are copper ionization, and hydrogen peroxide or hydrogen dioxide.

Copper Ionization is an electrical method that generates electrically charged copper ions into a water system. These ions are reactive and are thereby capable of inactivating bacteria, mold, mildew and similar microorganisms. The level of copper used by these automatic systems is not toxic and copper has been effectively used to generally control disease in other applications. The effectiveness of copper ionization on certain spore-forming bacteria and parasites is questionable when it is not monitored or controlled properly. All systems should have a method for being able to monitor the copper ion level in the water. Combination with another sanitizer (i.e. chlorine, hydrogen peroxide, etc.) is a way to cover all of your bases, yet maintaining lower levels of reactive oxidizing sanitizers.

Using hydrogen peroxide or hydrogen dioxide is another acceptable method for achieving water sanitation. Here, we are taking a form hydrogen and oxygen molecules that are highly reactive, bringing them into contact with organic material (bacteria), and (at a high enough level) effectively killing bacteria, parasites and inactivating viruses. One big plus of using these compounds is that the by-products of their reactions are water and oxygen. There is no need to be concerned about

fumes or water discharge; however, these are reactive materials and should be handled carefully. Again, monitoring the level of the reactive components is critical to maintaining control over your sanitizing system.

Of course these are only two alternative sanitation methods for water treatment of many. Regardless of the one you choose, the most common error I find is that there is no monitoring system for the water sanitation system. With chlorine, people are accustomed to using test strips to measure the free chlorine levels. If they combine this measurement with monitoring the pH of the water, they can be sure to maintain the right balance in the water to achieve inactivation of microorganisms. A pH that is either too high or too low will result in the chlorine moving into a form that will not be effective for killing microorganisms. And if you simply dump and don't measure, you may just be throwing money down the drain.

Using an ORP system to monitor the effectiveness of your water treatment system may be a more useful and easy method to assure that your treatment system is working for you on a consistent basis. ORP stands for Oxidation-reduction potential. An ORP system is a system that can measure the oxidation-reduction potential (in terms of milli-volts (mV)) of the treated water. Research has shown (Trevor V. Suslow, Ph.D., UC Davis, Pub. 8149, 2004) that a reading of 650-700 mV will result in the killing of pathogenic bacteria within 30 seconds. Advantages of this system can be automated dosing based on system readings, automatic recording of measurements (helpful for those who face third-party audits), and reduction of the need to test the water for pH.

Maintaining backup methods with which to calibrate your ORP system is strongly recommended. Ultimately you should know as much about your water chemistry (pH, mV, free ion levels) as you probably know about the soil chemistry of your fields. Failing to monitor is a failure to control. Water systems that are out of control are at a much greater risk for being the source of a foodborne outbreak. Minimize your risk and measure.

Ohio and Indiana fruit and vegetable growers can get help with the development of a food safety program by contacting Mid American Ag and Hort Services by phone at 614-246-8286, fax at 614-246-8686, or email at maahs@ofbf.org. The Initiative is presented in partnership with the United States Department of Agriculture's Risk Management Agency. More information about the Ohio and Indiana Specialty Crop Food Safety Initiative may be found at www.midamservices.org by clicking on Projects.