Stop 10. A Combination of Lightweight Rolling and Sand Topdress Programs to Decrease Pesticide Inputs and Enhance Fairway Turfgrass Quality

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Rolling has been used for centuries to achieve surface smoothness. Sand topdressing also has been used for centuries to control thatch, alter soil characteristics, and achieve surface smoothness. Although heavyweight rollers can compact the soil, lightweight rollers improve turf quality. In recent years, rollers have been used to increase ball travel on putting greens. While investigating rolling and its effect on green speeds, scientists at Michigan State University fortuitously discovered a novel strategy for plant disease management, control of dollar spot (Rutstroemia floccossum syn. Sclerotinia homoeocarpa F.T. Bennett) with rolling regimes. Cultural practices once reserved for putting greens may prove equally beneficial to fairway turfgrass stands, with rolling regimes providing a means of reducing pesticide inputs to these areas. The objective of this study was to compare turf grown on native soil and sand topdressed areas, and evaluate the effects of season long rolling frequency (one, three, or five times per week) on turf quality and disease severity for a mixed stand fairway of creeping bentgrass (Agrostis stolonifera L.) and annual bluegrass (Poa annua L.). No fungicide applications were used on these plots that were maintained at 0.5-in height of cut, and vibratory rollers, attached to a John Deere 2500A triplex mower, were used to administer the rolling frequency treatments. This three year investigation was initiated in July 2011 at Michigan State University, East Lansing, MI. Turfgrass grown on the sand topdressed areas had less dollar spot incidence and rated higher in quality compared to the native soil areas in 2011. However, the hot and dry weather of June and July 2012 could be the reason for the insignificant difference in disease severity between sand and native soil plots as well as between rolling frequency treatments when compared to 2011 results.

Stop 11. Japanese Beetle and European Chafer Control Options

Terry Davis and Dr. David Smitley

Grubs continue to be the number 1 insect pest problem in Michigan turfgrass. There are 2 types of grub control. Curative products such as Sevin and Dylox can be applied to active grubs in the fall or spring and will give 30-65% grub control. Preventive products such as Arena, Meridian, Merit or any of the 20+ generic flavors of imidacloprid or Acelepryn must be applied prior to egg hatch from the eggs laid primarily in late June and throughout the month of July. All of these products will give 60-100% grub control. The first 3 products should be applied between mid-May and Mid-July for optimum results. Acelepryn is much less water soluble and should be applied between late March and early May to make sure it is able to work its way down to where the grubs will be feeding in late July.

We have been analyzing 25 years of data generated in our grub tests and several things are very evident:
1) Immediately irrigate after applying a grub control with at least ½ inch of water.
2) If an insecticide is warranted – apply the highest labeled rate.
3) Proper timing of the application is essential.
4) Preventive chemicals are far more effective than curative controls.

Natural Biological Control of Japanese Beetle

Previous research at MSU supported by MTF and Project GREEEN indicates that survival of Japanese beetle larvae in the soil from October to May is reduced by as much as 50% when the pathogen, *Ovavesicula popilliae*, is established. We have successfully established this pathogen at several golf courses in the Detroit and Kalamazoo areas. At golf courses where the pathogen has been detected for 10 years or longer, populations appear to be declining. As a result, grub damage to turf is unusual and defoliation of linden trees, rare. The good news is that we have some dead infected beetles for you to take home to your own golf course to get *Ovavesicula* established there. The bad news is that it may take 5 – 10 years from when *Ovavesicula* is first introduced until populations begin to decline. If you are located in Kalamazoo/Battle Creek area there is no need to introduce more infected beetles because the pathogen is already well-established in that area. If you have introduced infected grubs or beetles in the past, it is not necessary to do it again.

Directions of how to implant infected beetles:

Find an area of irrigated rough on the golf course where you usually have grubs. Use a screwdriver to punch a hole into the soil about 1.0 inch deep. Enlarge the hole enough so that you can place the beetle 1.0 inch deep. Cover the hole and step on it after the dead beetle is placed in the ground to prevent birds from finding it. Repeat this for each dead beetle in the bag. Space the dead beetles about 5 paces apart. Do not place dead beetles where any insecticide has been used. Only choose irrigated turf sites where it is likely to find Japanese beetle grubs in the fall. Do not use insecticides in the introduction area for 3 years.

Stop 12. Postemergence Crabgrass Control

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2013 has been yet another year when preemergence herbicides have failed and crabgrass has been able to break-through and become a problem in lawns. It seems like increased temperatures over the years is enabling crabgrass, a warm season plant, to out-compete our cool season turfgrasses. If crabgrass is not controlled after it has germinated it is left to produce more and more seed giving it increased potential to be an even bigger problem the next year. The list of products that provide postemergence crabgrass control is ever increasing and the list of combination products with these differing active ingredients seems to grow by the minute.

Two trials were conducted in an area with high crabgrass pressure on June 26, 2013 when crabgrass was in the 1-2 tiller stage. Mesotrione (Tenacity) and topramezone (Pylex) are newer herbicides on the scene that not only provide excellent crabgrass control, but show great