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To:

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*3 pages from Mario Lanthier*

## **MICHIGAN TURFGRASS CONFERENCE**

The event was held in January 2017 on the campus of Michigan State University at East Lansing. It was organized by the Michigan Turfgrass Foundation ([www.michiganturfgrass.org](http://www.michiganturfgrass.org)). About 350 persons attended technical presentations for golf courses, lawn care, athletic fields and equipment.



### **PESTICIDE LEGISLATION IN EUROPE**

The European Union is planning to be pesticide free in public places by 2020.

The “Sustainable Use of Pesticides Directive” was introduced in 2009, setting in motion the requirements for mandatory IPM and non-pesticide methods.

The information was presented by John Bambury, course manager at the Ballybunion Golf Course in Ireland. “Regulation of pesticides will outstrip our innovations to manage pest problems” he added. “There will be a focus on cultural practices coupled with a high quality root zone and a low nutrient environment”.

The future of golf course management in England and Ireland may be as follows.

- Fairways and greens will become a mixture of bentgrass, fescue and *Poa annua*. “This will cause bumpiness on the greens, unless we learn to manage fescue with the same intensity as we manage bentgrass.”
- Low nitrogen fertilization at 40 kg of actual nitrogen / ha / year (equivalent to 0.8 lb / 1000 ft<sup>2</sup> / year). Said Bambury: “The best human athletes are lean and have a strict food diet. Maybe we should do the same with turf.”

## MANAGEMENT OF EUROPEAN CHAFER

“No insect causes more damage in Michigan lawns than European chafer” said Dr. David Smitley. “The damage is often misdiagnosed - European chafer adults fly at night and home owners think the grubs in their lawns are Japanese beetles.”

The presenter is a turf entomology specialist at Michigan State University and is known as “the man who wrote the chapter” on European chafer.

The cool weather pest arrived from Europe and spread rapidly before natural enemies could establish. The worst damage is in the fall when small animals such as raccoons destroy the lawn while feeding on the grubs found in the root zone.

Dr. Smitley suggested the following management tactics for European chafer.

1) Water during dry periods.

This is especially important in September and October when grubs are most active.

“This insect is a problem of drier sites. We rarely see any grub damage in lawns with a good irrigation system” added Dr. Smitley.

2) Raise the mowing height.

Higher mowing means more roots, thus less stress from grub feeding. “Lawns with a large root system are more tolerant because a very heavy infestation of grubs will never consume more than 50% of the roots” said the presenter. “If you combine mowing high with modest applications of fertilizer and watering during dry periods, you may not need to use any insecticide on your lawn – or any herbicide to control weeds, for that matter”.

3) Where pesticide can be used, spray in June or July in areas with damage the previous year, and follow with ½ inch of irrigation to wash into the roots.

Said Dr. Smitley: “The early spray is targeting young grubs before there is visible damage. Over 20 years of field trials, there is 100% control when spraying at the proper time followed by irrigation. An application without irrigation will give about 90% control”.

For more on *Rhizotrogus majalis*, see the excellent website [msuturfinssects.net](http://msuturfinssects.net).

European chafer was also a topic of discussion at the IPM Symposium of Landscape Ontario, held in Toronto on January 10. Provincial legislation is restricting the use of pesticides on residential lawns.

The parasitic nematode *Heterorhabditis bacteriophora* is used in commercial programs for control of the chafer. “Moisture is important - too dry or too wet, these nematodes will not work as well” said Richard Reed of Lawn Life Natural Products.

“For European chafer, nematode applications work, but the efficacy is 40 to 60%, consistently year after year. Is this enough?” asked Dr. Michael Brownbridge, of the Vineland Research Centre. “It may be if we integrate multiple strategies that work well together and provide the desired level of control”.

## POTASSIUM AND PHOSPHORUS FERTILIZATION

How do we calibrate fertilizer applications on turf ? “A lot of research has been done for corn, but it has little value to golf course superintendents – we are not trying to increase our harvest of bushels per acre” said Dr. Doug Soldat, from the University of Wisconsin.

Dr. Soldat was speaking in January at the Michigan Turfgrass Conference. He offered the following comments on potassium.

1) Potassium has probably no effect on wear tolerance.

This statement is supported by 5 recent studies that included work on perennial ryegrass. It contradicts the original claim made in 1973 using 8 lbs of K / 1000 ft<sup>2</sup>. Similarly, potassium fertilization has no impact for cold tolerance in cool season grasses, but it does help with cold tolerance in warm season grasses.

2) Potassium helps slightly with drought tolerance.

Three recent studies show a delayed wilting of the grass when fertilized with K.

3) Potassium has a different impact for different diseases.

More potassium means more pink snow mold and more potassium means less anthracnose, but more potassium has no direct impact on dollar spot. There is much less anthracnose when *Poa annua* has a potassium tissue content above 2%.

4) A good program to manage *Poa annua* would be as follow.

- Limit fungicide applications (let the anthracnose take out the *Poa*);
- Minimize nitrogen fertilization (2 lbs / years is much better than 5 lbs / year);
- Use a high rate of iron (this will mask the low nitrogen fertility);
- For turf in sandy soil, aim for 0.1 lb of N / 1000 ft<sup>2</sup> / week (same rate for K), adjusting the level based on results of tissue sampling.

For soil fertility guidelines, the largest set of scientific data currently available is the MLSN (Minimum Levels for Sustainable Nutrition). These guidelines were introduced in 2012 as part of a trend towards reduced inputs and increased sustainability in golf courses. The intent is to provide a minimum level of soil nutrients that will still provide good turf performance.

“This is a compilation of data that covers more than just sandy soils and also includes a fudge factor” said the presenter. The MLSN guideline for phosphorus is 21 ppm in the soil, but research with bentgrass on a sand-base soil shows excellent turf quality at 7 ppm, with no gain at 11 ppm, well below the MNSL guideline. “The MNSL is a good starting point for discussion” he concluded.

More information about the MLSN soil guidelines are found at the webpage [https://www.paceturf.org/journal/minimum\\_level\\_for\\_sustainable\\_nutrition](https://www.paceturf.org/journal/minimum_level_for_sustainable_nutrition).