



Tank mixing some products during hot weather and heavy rainfall can have noticeable negative effects on turf.

OVERWHELMING PUTTING GREENS WITH TOO MANY INPUTS

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All putting greens need five critical elements for survival: carbon dioxide, oxygen, sunlight, water and nutrients. Sure, supplemental water and nutrients have to be applied during periods of deficiency, but Mother Nature provides most of the basic necessities. Surface management – such as mowing, grooming and topdressing – is another necessary component for putting greens. However, beyond these fundamental practices, putting green management has become increasingly complex. There are a plethora of fungicide and fertilizer products available, each with different labels about when and how they should be used. But do putting greens really need all these inputs?

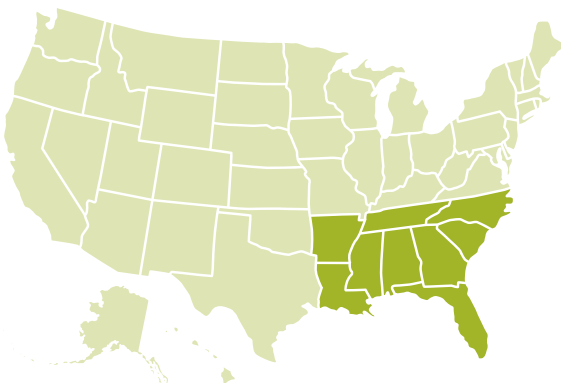
Some very involved disease control programs include applications of many different types of fungicides during the course of a year. Fertilizers have also become common components of regular spray programs. Add in plant physiological regulators – e.g., hormones, additive biostimulants and plant growth regulators – and it becomes challenging to identify what is actually beneficial. Furthermore, the performance of some fungicides can actually be antagonized when certain products are used in the same tank mixes.

When a problem arises – especially if a very complex spray program is being used – diagnosing the cause can be difficult. Eliminating factors such as diseases, nematodes and nutrient deficiencies narrows the possibilities, but sometimes it may take months or even years to diagnose the true cause. More often than not, an undesirable symptom is a combination of several factors.

To help clearly identify the positives and negatives associated with products and tank mixtures, here are some helpful tips:

- 1) If you ever have questions about the compatibility of different products in a spray mixture, refer to product labels or ask your suppliers for more information. Many manufacturers continually test tank-mix combinations of popular products to identify and address potential concerns.
- 2) Prioritize your product inputs. In the case of bermudagrass putting greens, the top of the list would likely include growth regulators and preventive fungicides for diseases such as Pythium.
- 3) Apply high-priority products by themselves or only with a fertilizer or growth regulator you have used successfully in the past. No more than one or two additional products should be in the spray tank when applying high-priority products.
 - Gauge and record the efficacy of all product applications by collecting quantifiable data like clippings, green speed, firmness, nutrient levels and disease incidence.
 - Rate surfaces on color and quality before and after each application. Ideally, have two different people take these ratings for comparison.
- 4) Test potential tank mix products on their own first and then mix them with other products one at a time.
 - Make two sequential applications at the label rate and interval during a period where your putting greens are experiencing optimal environmental growing conditions.
 - A nursery is the best location to test tank mixes until the effects are known.

If a problem can be alleviated by simplifying applications, limiting the number of inputs in one spray tank and reducing the number of applications, the end result will be less chemical use, fewer products to consider and longer utility of your priority products. This saves money, reduces environmental risk and will potentially yield better putting green performance.



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