



## Combination Or Single Products: Think Through The Confusion

By Steve Kammerer, regional director, Southeast Region | March 17, 2017



*Straw blankets help prevent desiccation in droughty areas by protecting turf from drying winds.*

Every year, it is amazing to see how products, from as complicated as automobiles to as simple as cookies, offer new improvements to encourage consumers to upgrade to the “latest and greatest.” Just the choices in cookie flavor available at the supermarket range from the ordinary to the obscure such as banana split, red velvet cake, candy corn and beyond. It’s easy to find some 22 different varieties of a single cookie brand.

The same product evolution is occurring in the world of golf course pest control. A golf course superintendent called me to ask which product I would recommend for an outbreak of *Microdochium* patch and I mentioned three or four fungicides by their chemical names. The conversation progressed to brand names, post-patent or generic products, and pre-mixes or combination products. I have seen two-, three- and even four-way fungicide and herbicide combination products. Are all of these chemistries necessary? Is a combination

product a better value than individually buying each active ingredient? The following explains some advantages and disadvantages of combination products:

#### Advantages:

- Spectrum – Combination products can be advantageous when facing several pest targets that cannot be controlled by one chemical alone – e.g. brown patch and Pythium or broadleaf and grassy weeds.
- Residual – Applying a curative product with a preventive product can help manage pests that are at varying stages of development. A combination product of this type can extend the duration of control or protection.
- Formulation superiority – Sometimes two products are incompatible when mixed together in a spray tank. Combination products may utilize different carriers to overcome active ingredient antagonism.
- Resistance management – Combination products can help manage resistance if all chemistries in the combination have activity on the primary pest of concern.
- Economics – Combination products can be a good economic choice if they cost less than purchasing each component of the combination product individually.

#### Disadvantages:

- Confusion – Because combination products contain more than one active ingredient, it becomes even more important for superintendents to know the chemical names and modes of activity for all [herbicides](#), [fungicides](#) and [insecticides](#).
- Resistance – Some products have resistance issues. If an active ingredient in a combination product has no activity on the target pest, you may be making other pests less sensitive to that active ingredient in the future.
- Tracking chemical restrictions – Most pesticides have a maximum allowable amount that can be applied. Understand the contents of any combination product to avoid exceeding the maximum allowable amount for any of its individual components. Using different products that contain the same active ingredient does not reset the limit.



- Off-target effects – When applying a combination product for a particular pest, be careful that it does not accidentally affect beneficial organisms that are not the intended target.
- Rates are fixed – Combination products have a set concentration of each active ingredient. You cannot adjust the concentration of one active ingredient without changing the others.
- Economics – Companies may include other active ingredients in a combination product with an active ingredient that is in high demand. Buying a combination product could mean that you are purchasing a product active ingredient you would not otherwise.

So, how should you navigate the sometimes confusing world of combination products? Look at the products you use and have a specific reason for each active ingredient. If you have several pests to manage, consider the active ingredients in any combination product individually to be sure that their attributes are what you desire. It is also important to keep records and calculate product costs by percentage or amount of active ingredient. Compare the cost of individual products with any combination products you are considering. If a combination product meets your needs and costs less than the individual components, it makes sense to use that combination. Otherwise, you might be better off making your own tank mixes.

## **Southeast Region Agronomists:**

Steve Kammerer, regional director – [skammerer@usga.org](mailto:skammerer@usga.org)

Chris Hartwiger, director, USGA Course Consulting Service- [chartwiger@usga.org](mailto:chartwiger@usga.org)

Patrick M O'Brien, agronomist – [patobrien@usga.org](mailto:patobrien@usga.org)

Todd Lowe, agronomist – [tlowe@usga.org](mailto:tlowe@usga.org)

[Information on the USGA's Course Consulting Service](#)

[Contact the Green Section Staff](#)