

Pathological Pointers: Fungicides, Grass Plant Growth and Algae

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Fungicides are used to prevent or protect a grass plant from disease. Fungicide use was determined in the past by knowing what disease was expected (preventive) or by what disease was present (curative); and at times, we had choices about which product to select. Choices were made based upon cost of control (economics) or length of control (persistence) or product availability (on-site or rapid delivery) and range of other diseases expected that could also be managed. Today you must consider two additional aspects.

The superintendent in '95 that suffered from algae must consider the following reports about fungicides in the DMI (DeMethylation Inhibiting) group. These products can produce the dark green effect (increased chlorophyll and thicker leaves) especially in the summer. This can result in a more open canopy and the development of algae. The cause of this is not understood. Is it due to a direct effect on algae or a result of changed grass plant structure and growth or some other unknown reason? Increased algal problems were reported following use of Banner, Bayleton, Eagle and Sentinel in field trials. All but Banner had more algae than the check when greenhouse tested. Field plots treated with Sentinel exhibited carryover into the next year when scored for quality. Lynx had the least algae and may be an exception to the rule that DMI's in

the field and in the greenhouse tend to increase algae. Rubigan was not tested in these studies, but it was expected to perform as a DMI also.

Reports about the benefits of using Aliette and Fore every 7 to 14 days should also consider the potential for reduced algal competition or direct algal control with Fore.

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Those who are using plant growth regulators (chemistry type II, limitation of gibberellin biosynthesis [Primo, TGR or Cutlas]) may find some disease control (list above is least to most), but the level of disease control-Dollar Spot is minor. The similarity of these growth regulators and some DMI products is significant, and programs that use both growth regulators and DMI fungicides could experience additive effects especially in the hot period of the season. Fungicide selection today should also con-

sider your expected use of plant growth regulators.

A chemistry type I product (Mefluidide) used for seed head suppression when mixed with Ferromec is reported to produce effective suppression without any undesirable side effects. The side effects of growth regulators, type I or II and I believe some DMI fungicides, are not completely understood. Gibberellin needed for cell elongation is reported to result in suppressed growth of stems making some grasses shorter and stronger, but is this the only result of suppressed gibberellin production? Even if the plant's production of gibberellin is the only product affected by growth regulators, all other products in the production pathway can be affected. Synthesis of gibberellic acid in a plant is not the only plant hormone; Auxins and Kinins and Gibberellins are all involved in stimulating basic aspects of growth, cell division and elongation. Each is reported to work in conjunction not only with other substances but also within the group of three; and in animal systems, it is known that such hormones mediate a great variety of functions in addition to growth.

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Credit: Hole Notes, June 1996