

New Research Affects Dew Removal Recommendations for Fairways

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During the 1990s, some very interesting UK research showed that practices for removing dew accumulation at sunrise such as mowing, syringing, dragging a hose, etc. can speed leaf surface drying and therefore reduce dollar spot on creeping bentgrass. The results of this work were so exciting that many golf course superintendents implemented a sunrise dew-removal program on their fairways on those mornings when they don't mow, often by dragging coupled hoses across the fairway. Since that time, we have become interested in seeing just how much fungicide savings (if any) superintendents might be able to achieve on creeping bentgrass fairways by instituting a dew-removal program.

Last year, two field experiments were conducted on creeping bentgrass fairways, comparing a normal mowing program (3 mornings per week) with a combination program (mowing three mornings per week combined with dragging by hose the remaining four mornings per week). Dollar spot was allowed to develop from natural inoculum, and disease was monitored regularly.

In both tests, the combination treatment (mowing and hosing) never provided a statistically significant reduction in dollar spot severity over the normal mow-

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ing treatment (Figure 1). We were quite surprised by these results and fully expected the combination treatment to reduce disease pressure, thus reducing the need for fungicide applications. Nevertheless, these are the results we obtained in two trials with significant disease pressure.

We have pondered these results and we

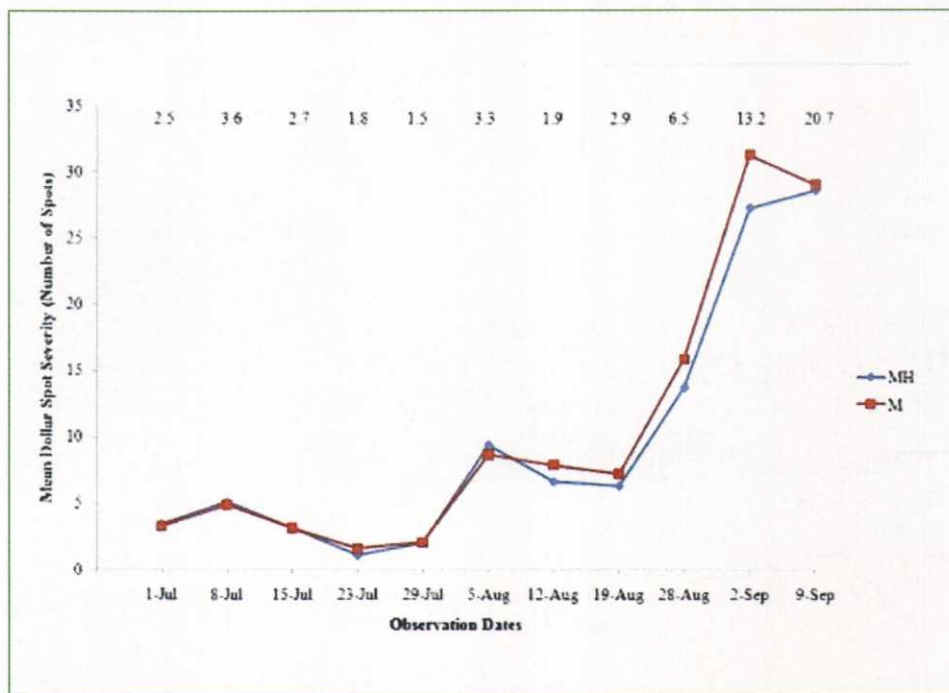


Figure 1. Disease progress in the combination treatment (MH, mowing plus hosing to remove dew) vs. mowing only (M). Data provided here are means across several treatments. LSD values (0.05) are given along top of figure.

have concluded that a blanket recommendation for dew removal on creeping bentgrass fairways for disease management is less defensible than we once thought. While our studies in the 1990s clearly showed that dragging creeping bentgrass seven mornings per week significantly reduced dollar spot, our current studies were designed to answer a different question: Does dragging on the mornings when the fairway is not being mowed provide any additional disease control over and above that provided by mowing alone? And our data indicate that the answer seems to be "No."

We know from our earlier studies that mowing is the most effective dew-removal practice for reducing disease pressure. Mowing while the dew and dollar spot mycelium are still on the leaves is probably very disruptive to disease development, both by speeding leaf drying and by tearing apart fungal mycelium (which

may reduce its vigor, maybe sometimes even kill it). While dragging every day at sunrise is useful as a stand-alone dew removal practice, our data indicate that mowing three days a week provides all the dollar spot suppression on fairway-height creeping bentgrass that a combination mowing/dragging program provides.

Of course, based on our studies in the previous decade, dragging in the morning will likely reduce disease if mowing is not done until after the leaves have dried. Furthermore, some superintendents drag in order to make the turf stand more erect, and that advantage may be a good enough reason to drag fairways.

However, our results suggest that dragging fairways at sunrise in order to reduce disease pressure is not beneficial, if one is already mowing at sunrise three days a week.

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