

Defensive Disease Management

Pressure for “perfect” turf conditions remains high in spite of increased concern regarding the potential health risks of pesticides and pending restrictive legislation. A significant “middle ground” is available through the implementation of Integrated Pest Management (IPM) programs. A core aspect of IPM is the use of resistant species and varieties, yet significant site disruption seems to preclude widespread implementation.

A recent study conducted by researchers at Kansas State University investigated the relationship between bentgrass variety and fungicide use for disease control. Specifically, the project compared preventive and curative control programs on different bentgrass varieties. Four varieties were planted and managed as putting green turf and treated with a number of different fungicide combinations for the prevention and curative control of dollar spot and brown patch.

An important observation noted immediately was that none of the varieties provided adequate quality without a fungicide. However, L-93 was significantly more resistant than Penncross and Providence, which were more resistant than Crenshaw. The inherent resistance of L-93 allowed all fungicide programs to be reduced. Considering all varieties, a preventive strategy for dollar spot required more than twice (~30) as many applications as a curative program (~12 apps), however this was not evident for brown patch. Brown patch incidence was so severe a curative program could not help turf maintain acceptable quality.

The significant reduction in fungicide use in a curative strategy for dollar spot directly contradicts previous claims that a curative program will always use more fungicide. Clearly this is disease dependent and the importance of using resistant varieties is evident and likely worth the investment in time and resources in an era of concern with pesticide use.

From: Settle, D., J. Fry and N. Tisserat. 2001. Dollar spot and brown patch fungicide management strategies in four creeping bentgrass cultivars. Crop Science 41-1190-1197.

Compost Reduces Rust Disease

Landscape and sports turf professionals are regularly engaged in establishing new sites into turfgrass. Many sites are plagued with poor soil conditions due to the lack of adequate topsoil. Also, there are many long term concerns regarding the use of pesticides so that any effort at establishment that can aid turf health would be worth implementing.

Ohio State University researchers investigated the how the use of a biosolid (sewage sludge) compost material incorporated at establishment could influence turfgrass establishment. The compost treatment supplied about 2.5 lbs of N, 10 lbs of P and 3 lbs of K and plots were seeded with Kentucky bluegrass and perennial ryegrass alone or in a mixture.

The compost amended plots enhanced establishment at various periods throughout the study year. Differences for Kentucky bluegrass were not evident until week 5 while ryegrass plots treated with compost were twice as established as uncomposted plots in the 4th week. The differences persisted through most of the 52 weeks for the ryegrass plots, however, meaningful differences (>75% density ratings) ended after about 2 months.

Interestingly, the researchers observed significantly more rust (*Puccinia* sp.) in the perennial ryegrass that did not receive compost amendment. This effect persisted into the 2nd month of the experiment. The obvious explanation is that more nutrients were applied in the compost plots, yet a starter fertilizer and follow up treatment was made to plots not treated with compost. Furthermore, in the first two months of the experiment you would not expect a significant nutrient release from the compost, however leaf nutrient levels were not measured.

This study is the first of its kind to report how soil incorporation of a compost reduces the severity of a foliar pathogen. Of course when using compost it is vital for it to be tested properly for contaminants and consistency. Clearly there are many benefits to be enjoyed when a compost is used properly at establishment

From: Loschinkohl, C. and M.J. Boehm. 2001. Composted biosolids incorporation enhances establishment on disturbed urban soils and reduces leaf rust severity. HortScience 36:790-794.

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