Determining Fertility And Seeding Rates For Soil-less Sod Establishment On Plastic

John C. Sorochan and John N. Rogers III
Department of Crop and Soil Sciences

Since the summer of 1995, sod establishment on plastic utilizing a refined wood fiber mat has been researched at Michigan State University. The ability to provide a lightweight and rapid sod is one of many benefits to establishing turfgrass on plastic. However, since the turf is being established in a soil-less growing media, the optimum fertility and seeding rates have not been determined. Two separate experiments have been initiated on this lightweight media to determine the optimum fertility and seeding rates.

Fertility Study

Nitrogen source and weight are being studied at the Hancock Turfgrass Research Center on the campus of Michigan State University. Unlike soil, the refined wood fiber mat does not contain the necessary Urease organisms to convert the nitrogen source to a usable form for the plants to uptake. Instead, ammonium nitrate (usable form of nitrogen by plants) and an organic source of nitrogen (Milorganite) are being compared. Each nitrogen source is applied at three different rates: 0.25#, 0.5#, and 1# N/1000ft^2. A third nitrogen source is Urea, included for comparison with ammonium nitrate as an alternate mineral nitrogen source. Finally, Two rates of phosphorous and potassium are also be compared (0.25# and 0.5#/1000ft^2). Fertilizer treatments are applied weekly from July through September.

Seeding Study

Establishing turfgrass on a refined wood fiber mat eliminates the favorable seed to soil contact required for optimizing seed germination. Current seeding rate recommendations are for turfgrasses established within soil conditions. Therefore, the need to determine optimal seeding rates for turfgrass established without soil on a refined wood fiber mat over plastic, is necessary. Four turfgrass species are being studied at three different seeding rates. The turfgrasses studied include Kentucky bluegrass, Supina bluegrass, tall fescue, and perennial ryegrass. The seeding rates for these grasses include the recommended seeding rates for soil conditions and 2 and 4 times those recommended rates.