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This research will investigate the effects of phosphorus fertilization programs on turfgrass performance, and monitor soil and plant tissue nutrient levels to determine the impact of the programs.

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Phosphorus use in turfgrass continues to come under scrutiny and legislation restricting use is still under consideration. Professional turf applicators have reduced or eliminated phosphorus from their fertilization programs based on the assumption that soil phosphorus levels are supplying adequate amounts of phosphorus to the turf. Expected outcomes are definitive phosphorus recommendations for turfgrass in Michigan.

The nitrogen treatments are 2, 3.2, and 4.25 lbs. N/1000 ft.<sup>2</sup>/yr. The low, medium, and high nitrogen treatments will be applied over 2, 4, and 6 applications, respectively. Nitrogen will be applied using a formulation containing slow and fast release nitrogen sources that are representative of typical home lawn fertilizers. The phosphorus treatments are 0, 0.5, and 1.0 lbs. P<sub>2</sub>O<sub>5</sub>/1000 ft.<sup>2</sup>/yr. Phosphorus will be applied using mono potassium phosphate. Phosphorus will be applied according to the application schedule for the nitrogen treatments. For example, the low nitrogen treatment will be applied over two applications and all phosphorus applications whether zero, medium, or high that are applied with the low nitrogen treatment will be applied over two applications.

In 2004, a low phosphorus soil was sodded with Kentucky bluegrass and fertilizer treatments were initiated. For 2005-2006, data collection will include weekly visual color rating, chlorophyll index rating using Spectrum Technologies Chlorophyll Meter CM-1000, bi-weekly quality rating, bi-weekly clipping yield and tissue analysis (leaf NPK content), monthly soil sampling and analysis, disease and weed incidence as necessary. Due to the reduction in funding following 2006, the intensity of data collection in 2007 will be reduced. Turfgrass color and quality ratings will be taken every two weeks, clippings and soil samples will be collected three times per year (spring, summer, autumn).

The irrigation x fertility x turfgrass species research project initiated in 2005 will continue in 2007. Irrigation treatments include: no irrigation, irrigation weekly, and irrigation every other day. Fertility treatments are synonymous with the above described P trial, however the soils on this site test high for soil phosphorus level. Turfgrass species/mix are: tall fescue, Kentucky bluegrass, and a three way lawn mix containing

Kentucky bluegrass, fine fescue, and perennial ryegrass. This trial will add to our knowledge for making fertilizer BMPs with respect to phosphorus.