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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, Cook College, Rutgers University in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public. Articles appearing in these proceedings are divided into two sections.

The first section (white pages) includes lecture notes of papers presented at the 1997 New Jersey Turfgrass Expo. Publication of the New Jersey Turfgrass Expo Notes provides a readily available source of information covering a wide range of topics. The Expo Notes include technical and popular presentations of importance to the turfgrass industry.

The second section (green pages) includes technical research papers containing original research findings and reviews covering selected subjects in turfgrass science. The primary objective of these papers is to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Dr. Ann B. Gould, Editor
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SUPPRESSION OF POWDERY MILDEW WITH MONOPOTASSIUM PHOSPHATE FERTILIZER

Dr. Joseph R. Heckman[1]

Powdery mildew is a serious disease of susceptible turfgrass cultivars. Low light intensity and poor air circulation promote powdery mildew disease. Our objective was to evaluate the foliar application of monopotassium phosphate fertilizer for control of powdery mildew disease on Kentucky bluegrass.

MATERIALS AND METHODS

Kentucky bluegrass was grown in flats in the greenhouse from January to April 1997. All flats were fertilized weekly with Miracle Gro Lawn Food 36-6-6 (nutrient sources were urea, ammonium phosphate, and potassium nitrate) at the rate of 1 tbs per gal of water. Various rates of monopotassium phosphate (MKP) and/or X-77 sticker were applied every 7 to 14 days from March 3, 1997 to April 7, 1997. The treatments listed in Table 1 were applied as a foliar drench from a sprinkling can. Powdery mildew disease suppression was visually rated on a scale of 1 = worst disease incidence and 10 = best disease suppression. The experimental design was a completely randomized design with three replications.

RESULTS

Monopotassium phosphate significantly suppressed powdery mildew disease on Kentucky bluegrass grown in the greenhouse. Higher application rates of MKP and more frequent application improved disease suppression. The use of X-77 sticker alone or in combination with MKP strongly suppressed the disease (Table 1 and Figure 1).

The results clearly indicate that foliar applications of MKP can suppress powdery mildew disease. It is less clear if the suppression is related to improved plant nutrition or other means of disease control. The 36-6-6 fertilizer that was applied to all treatments and the control flats was, however, expected to provide adequate P and K for growth of Kentucky bluegrass.

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Table 1. Effect of monopotassium phosphate (MKP) and X-77 sticker on powdery mildew suppression in greenhouse grown Kentucky bluegrass on April 7, 1997, six weeks after treatment.

Treatment	0-52-34 MKP	X-77 Sticker	Application frequency	Disease suppression[1]
	(Tbs/gal)	(ml/gal)	(Days)	
1	0.0	0.0	7	1.3 f
2	1.0	0.0	7	3.0 d
3	1.0	1.5	7	5.3 c
4	0.5	0.0	7	1.7 ef
5	0.0	0.0	14	1.3 f
6	1.0	0.0	14	2.0 e
7	0.0	1.5	7	5.0 c
8	2.0	1.5	7	8.0 a
9	2.0	0.0	7	7.0 b
				$LSD_{0.05}$ = 0.57

[1]Disease suppression rated on a scale of 1 to 10 where 1 = worst and 10 = best suppression.

Figure 1. Effect of monopotassium phosphate (MKP) and X-77 sticker on powdery mildew suppression in greenhouse grown Kentucky bluegrass, March 3, 1997 to April 7, 1997. Disease suppression rated on a scale of 1 to 10 where 1 = worst and 10 = best suppression.