



## High Pressure Water Injection Using the Hydroject For Application of Wetting Agents

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A common problem on turf grown on sandy soils is localized dry spot, or LDS. Wetting agents are commonly used to help alleviate the problems associated with LDS. An ongoing study is investigating effects of high pressure injection of wetting agents applied with the Hydroject on LDS formation on a creeping bentgrass putting green.

Preliminary data from a study conducted in 1990 revealed differences in soil moisture content between plots receiving injected wetting agent treatments and plots receiving surface applied wetting agent. Higher soil moisture contents were found on plots receiving injected wetting agent treatments. In addition, plots receiving water injection only had higher soil moisture than plots surface treated with wetting agent.

A similar study was initiated in 1992. In this particular study, however, two different wetting agents, HydroWet and Real Kleen, were used. No significant differences among treatments were found in 1992 due to continuous wet weather. Table 1 shows gravimetric soil moisture contents taken on 3 dates in 1993. Date of application was June 16, 1993. Initial soil moisture data taken on June 23 showed no significant differences among treatments. Dry weather in July caused significant drying of the green and LDS became evident on many plots. Soil moisture taken on July 21 revealed significant differences among treatments. The highest soil moisture contents were found in plots injected with the high rate of both wetting agents (16 oz/M). A heavy rain (1.7") preceded the July 26 soil moisture sampling. Plots injected with the high rate of both wetting agents again had the highest soil moisture contents. On both dates, however, the high rate of surface applied HydroWet showed statistically equal soil moisture content as compared to plots injected at the same rate. This data show that a high rate of wetting agent may be helpful in preventing the occurrence of localized dry spot. Injection of these high rates has shown promise in maintaining soil moisture in dry conditions. Further research will be needed, however, to determine which method of application is most effective.

**Table 1** Gravimetric soil moisture content (%), 0 to 3 inch depth, as affected by wetting agent application, 1993.

Treatment	Date		
	June 23	July 21	July 26
Check	17.8 a <sup>x</sup>	7.2 cd	11.3 c
Water Injection Only	17.5 a	7.5 cd	12.5 bc
Real Kleen 4 oz/M Injected	17.0 a	7.0 cd	13.5 bc
Real Kleen 16 oz/M Injected	17.0 a	13.0 a	18.0 a
Real Kleen 4 oz/M Surface	17.2 a	6.0 d	12.0 c
Real Kleen 16 oz/M Surface	17.3 a	7.5 cd	10.3 c
HydroWet 4 oz/M Injected	18.8 a	8.3 cd	15.3 abc
HydroWet 16 oz/M Injected	16.8 a	12.3 ab	18.0 ab
HydroWet 4 oz/M Surface	17.8 a	6.8 cd	12.0 c
HydroWet 16 oz/M Surface	17.7 a	10.3 abc	19.5 a

<sup>x</sup> Numbers followed by the same letter are not significantly different at the 0.05 level of probability.

<sup>y</sup> Date of application: June 16, 1993.