

# Broadleaf Herbicide Timing Study

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Broadleaf weed control is most effective when herbicides are applied in the fall, but with new lawn care customers or areas that need a rescue treatment, broadleaf herbicides are often applied in the spring. A study, in its second year, was initiated to determine the effectiveness of spring broadleaf weed control, specifically to compare ester and amine formulations of a combination herbicide containing both 2,4-D and 2,4-DP. The ultimate objective of this study was to correlate weather conditions with weed control and develop a model to determine optimum timing for spring-applied amine and ester formulations of broadleaf weed herbicides.

Weedone DPC ester and Weedone DPC amine were applied weekly from 3 March through 11 May, 1989 and 3 March through 7 May, 1990 at 4 pts./A (0.925 lbs. ai/A) in 80 gals. H2O/A. This study was repeated at two locations each year, the Purdue University Jet Propulsion Laboratory and the Purdue Agronomy Research Center. Weed counts were taken in mid-April and mid-June of each year.

A number of conclusions can be drawn from the two years of data:

1) Very early spring treatments are not effective. The definition of early spring varies from year to year. Neither formulation gave adequate control when applied before 7 April, 1989, but in 1990, neither formulation gave adequate control only when applied before 11 March.

2) The ester formulation is far superior to the amine formulation in the early spring. In 1989, the ester provided better control than the amine when applied from 7 April through 27 April. The ester provided better control than the amine when applied between 16 March and 28 March, 1990.

3) After a certain date in the spring, control from an amine is equal to that of an ester. In 1989, this date was 28 April and in 1990, the date was 5 April.

The difference in the results from year to year demonstrate that herbicide application scheduling cannot always be based on the calendar. Rather, it should be based on a weather factor such as degree days, soil temperature, etc. With help from the National Weather Service and possibly a third year of data, a model will be developed to determine optimum timing of spring-applied broadleaf herbicides.

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