

UNIVERSITY OF RHODE ISLAND  
Plant and Soil Science

Herbicide Effects on Sod Development and of Rooting after Transplant  
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When a herbicide is used for weed control in sod, will there be any harmful effects? Will the sod develop normally or will plant, tiller, and rhizome growth be affected? Will sod tensile strength be reduced? After transplanting will it form new roots and knit as quickly as possible? To find answers to some of these questions, tests have been conducted at the Rhode Island Agricultural Experiment Station since 1970.

Procedure

Standard rates of granular benefin, bensulide, DCPA, and siduron were applied in the spring to Kentucky bluegrass sod that was seeded in the fall and still developing and to mature grasses ready for harvest. Sod development was evaluated by taking visual turfscore ratings and by plant, tiller and rhizome counts in some trials. Sod tensile strength measurements were also taken to determine development. Root production of transplanted sod was evaluated by measuring dry weight of roots grown from four-inch plugs on sand. Root strength measurements were also taken by recording the force necessary to lift sod plugs from soil.

In another series of tests standard rates of 2,4-D spray mixture with either dicamba, mecoprop or silvex were applied to mature Kentucky bluegrass sod in the spring and fall at various times before and after sod lifting. Rooting of the transplanted sod was evaluated by measuring root production and root strength.

A. Results from benefin, bensulide, DCPA and siduron

I. Immature Sod

- a. About 2 1/2 months after treating Kentucky bluegrass sod with benefin and DCPA, the grasses were coarser in texture and of poorer quality. No visible effect was evident from bensulide and siduron treatments.
- b. Sod tensile strength 2 1/2 months after treatment was reduced by benefin and bensulide. Reduced tensile strength was still evident from bensulide five months after treatment. Sod strength was not reduced by DCPA and siduron treatment.
- c. In an effort to determine the influence of benefin and bensulide on plant development and relationship to sod strength counts of plants, tillers and rhizomes were made 2 1/2 months after treatment. Benefin treatment did reduce tiller and rhizome production. This could account for reduced sod tensile strength. Since there was no reduction in tiller or rhizome

numbers with bensulide, it is possible that root production also influences sod strength.

d. Root inhibition was detected in sod transplanted four months after treatment with benefin, bensulide, and DCPA. No effect on rooting was detected with siduron treatment.

## II. Mature Sod

a. No reduction in sod strength was detected in sod treated three months earlier with benefin, bensulide, DCPA or siduron.

b. Root inhibition was evident in sod transplanted three months after treatment with bensulide. No inhibition was obtained from benefin, DCPA or siduron.

### B. Results in Mature Sod with 2,4-D, dicamba, mecoprop and silvex

a. Herbicide mixtures of 2,4-D with either dicamba, mecoprop, or silvex applied four weeks before sod transplanting in the fall or spring did not affect sod rooting.

b. Mixtures of 2,4-D with either mecoprop or silvex applied two weeks before transplanting in the fall reduced root growth. No root inhibition was evident from the 2,4-D plus dicamba mixture. None of the three mixtures caused root inhibition from spring treatments made two weeks before transplanting.

c. All herbicide mixtures applied two weeks after sod transplanting in the fall or spring resulted in root inhibition.

d. Herbicide mixtures applied four weeks after transplanting in the spring did not reduce root growth - (no fall data available).

### C. Practical Conclusions for Kentucky Bluegrass Sod

a. It appears safe to use siduron for crabgrass control in sod that is immature and lacks complete grass cover.

b. On mature sod it appears safe to use benefin, DCPA or siduron for crabgrass control.

c. Mixtures of 2,4-D with either dicamba, mecoprop, or silvex can be used safely on mature sod if applied at least four weeks before or after transplanting.

d. If it is necessary to apply broad-leaved herbicide mixtures two weeks

before harvest it is safe to use any of the three mixtures in the spring or 2,4-D plus dicamba in the fall. None of the mixtures were safe to use two weeks after transplanting in either the fall or spring.