EFFECT OF TILLAGE INTENSITY ON ESTABLISHMENT OF BIRDSFOOT TREFOIL IN PASTURES

BIRDSFOOT trefoil, *Lotus corniculatus* L., is a legume which has the potentiality for making a significant contribution to pasture production in many situations because of its ability to grow on moderately acid, drouthy, infertile, and imperfectly drained soil. However, several workers have reported sparse stands and slow establishment of birdsfoot trefoil under conditions of limited seedbed preparation (1, 2, 3, 4). This report presents the results of two experiments which were designed to determine the seedbed conditions requisite for the successful establishment of birdsfoot trefoil on the hill pastures of south-central New York.

Summer Tillage Experiment

An experiment was laid out in an unproductive pasture on an acid soil classified as Lordstown stony silt loam with a 5% slope. The original vegetation consisted mainly of sweet vernal grass, *Anthoxanthum odoratum* L., and broad-leaved weeds with some meadow fescue, *Festuca elatior* L. During the first week of August, 1948, five intensities of tillage were applied to plots 7 by 72 feet with four replications in a split plot design. The order of increasing intensity were (a) no tillage—check, (b) spring tooth harrowing twice to a depth of $1\frac{1}{2}$ inches, (c) field cultivation twice to a depth of 4 inches, (d) field cultivation six times to a depth of 4 inches, and (e) plowing followed by spring tooth harrowing twice. Two weeks after the initial tillage, 3,000 pounds per acre of limestone and 500 pounds per acre of 5–10–10 fertilizer were applied to the experimental area and all tilled plots were gone over twice with the spring tooth harrow. The plots were seeded on March 29, 1949, without further seedbed preparation or covering the seed. The subplots were sown with simple mixtures at the following rates per acre:

1. Empire birdsfoot trefoil 6 pounds and timothy, *Phleum pratense* L., 8 pounds,
2. Ladino white clover, *Trifolium repens* var., 2 pounds and orchard grass, *Dactylis glomerata* L., 8 pounds,

Notes

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