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USING BIRDSFOOT TREFOIL IN KENTUCKY PASTURES

By W.C. Templeton, Jr., C.F. Buck and D.W. Wattenbarger

Birdsfoot trefoil (*Lotus corniculatus* L.) is an excellent pasture legume in the Corn Belt and in northeast United States. It has usually been considered too poorly adapted to Kentucky to merit trial by the farmers. Observations and grazing results in Woodford county during the last 14 years, however, indicate that this view is no longer valid.

A grazing trial was established in 1954, with birdsfoot trefoil and Kentucky bluegrass as one of three mixtures used. Trefoil was seeded alone in the spring, and an excellent stand was obtained. Bluegrass was drilled in the established trefoil in September 1954. There were four 4-acre experimental pastures of trefoil-bluegrass and an additional 6-acre field which was used as a reserve pasture.

By 1956 the legume stands were poor in all the trefoil pastures, and at the end of the trial in 1959, trefoil had virtually disappeared from the four experimental pastures. Stands of the legume were noticeably better in the reserve pasture, however, and it was decided that it would be maintained for further study. The field was grazed moderately during 1960 and 1961. Considerable trefoil seed was produced, and the trefoil population began to increase.

In spring 1962 the area was fenced into six pastures of approximately 1 acre each. Since that time, each of the three spring management practices has been given two pastures: (1) grazing initiated from April 10 to 30; (2) grazing initiated from April 20 to May 15, and (3) grazing initiated or cut for hay from May 25 to June 15. Grazing of all pastures during the summer was delayed for 8-10 weeks to permit the trefoil to reseed.

Birdsfoot trefoil stands have been excellent during the last 5 years, and the pastures have been as productive as excellent bluegrass-ladino clover pastures on the same farm.

Under the conditions of this experiment, birdsfoot trefoil appears to be behaving as a biennial or short-lived perennial, with vast numbers of seedlings appearing each spring. In the fall of 1965 soil samples were collected, and the trefoil seed were separated, counted, and weighed. The amount of seed recovered was almost 200 pounds per acre (1,716 seeds per sq ft). Botanical analyses show that approximately 50 percent of the summer herbage is trefoil.

The successful growth of birdsfoot trefoil in the Woodford county pastures is thought to be related to the accumulation of seed in the soil, and, probably, to the

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development of an adequate population of trefoil-nodulating organisms. The experiments with these pastures suggest that, under a management program which will permit natural reseeding for a few years, birdsfoot trefoil shows promise for improving pasture production in Kentucky. We believe that it will prove most useful in northern Kentucky, in conjunction with Kentucky bluegrass. It does not appear to be as compatible with the other common cool-season grasses, especially tall fescue.

Where feasible, pure seedings of birdsfoot trefoil alone would be preferable, with bluegrass being added later. Renovation-type seedings probably can be made successfully if (1) the grass is grazed hard during the preceding year, (2) the sod is thoroughly disked, (3) adequate lime, phosphorus, and potassium are present or are applied, and (4) the seeds are inoculated with appropriate bacteria. Eight to 10 pounds of seed per acre should be planted and covered shallow in March or early April.

Birdsfoot trefoil does not cause bloat, is not attacked by the alfalfa weevil, and is relatively drought-tolerant. In our opinion, birdsfoot trefoil in a mixture with Kentucky bluegrass deserves consideration for areas which are to be devoted to pasture permanently or at least for several years, and where management will favor reseeding.

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