Forage Production of Birdsfoot Trefoil-Orchardgrass as Affected by Cutting Schedules

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BIRDSFOOT trefoil has gained popularity as a permanent pasture legume. Also it has had limited use as a hay crop (4). Some workers have found that birdsfoot trefoil can tolerate more severe cutting schedules than certain other legumes (2). The extent to which birdsfoot can tolerate severe management might well be affected by the competitive nature of an associated grass (4). Generally considered less competitive than other legumes, birdsfoot trefoil is commonly seeded with less vigorous grasses such as timothy or Kentucky bluegrass (3).

In Ohio, timothy and Kentucky bluegrass, which are commonly used with trefoil, do not produce adequately during summer months. Orchardgrass, which may grow vigorously throughout the season, is a severe competitor and is generally not recommended for use with birdsfoot trefoil. Late maturing strains of orchardgrass, while fully as vigorous in summer growth, are less vigorous in early spring than are common strains of orchardgrass (3). For this reason late-blooming strains of orchardgrass should be less competitive than common strains.

This experiment evaluated 8 cutting schedules with 2 strains of orchardgrass. The object of this study was to determine the effect of date and interval of cutting on total hay production and on botanical and chemical composition of birdsfoot trefoil and two strains of orchardgrass grown in association.

MATERIALS AND METHODS

Birdsfoot trefoil from a European seed source was band seeded with commercial orchardgrass (early maturing) and S-37 orchardgrass (late maturing) on a Wooster silt loam soil in 1954 using 5 replications. A split-split-plot design consisting of whole plots, to accommodate four dates of first-cutting on a random arrangement within each block was used. Each whole plot was subdivided to permit two lengths of interval between harvests. The subplots were further divided to accommodate the two strains of orchardgrass. Six- and 8-week intervals were used subsequent to 4 dates of first-cutting as follows: (1) May 13, (2) May 20, (3) June 1, and (4) June 13.

The treatments were continued 4 years (1955–1958) and a uniform harvest made in 1959 gave a measure of residual treatment effects. Dry matter production, protein production, botanical composition, and stand-life were recorded.

Soil fertility was maintained at high levels and soil pH was held at 6.5 or above. Insect damage was kept to a minimum by spraying. Botanical composition of the hay in 1957 and 1958 was calculated using nitrogen percent values of the hay and each hay