Palatability Differences in Tall Fescue Using Leaf and Plant Type

J. P. Craigmiles, L. V. Crowder, and J. P. Newton

TALL fescue (Festuca arundinacea Schreb.), due to its wide range of adaptability, is used on a large acreage of improved pasture land in the United States. Categorically, tall fescue is a low-quality forage plant (3, 4, 6). Forage quality can be defined as the ability of a plant to meet an animal's nutrient requirement when fed free choice. One of the characteristics of quality in forage is palatability. Palatability is a complex character determined by both the livestock and herbage offered and is usually thought of as the amount of the plant consumed under proper grazing conditions. Even though palatability is often confused with appetite, some forage workers (5, 9) report it is of greater importance than nutritive value.

Palatability is difficult and expensive to determine, especially in a breeding program where the need for screening thousands of selections is acute and by necessity animals have to be used. Buckner (1) found grazing cattle tended to select certain fescue genotypes at each grazing period with the grazing ratings showing that polycross progenies and synthetics of the palatable inbred lines to be more intensively grazed than naturalized varieties. In a later study (2) it was concluded from grazing 72 tall fescue strains that the observational techniques could be used successfully early in a breeding program to screen large plant populations for improved palatability. Other workers (7) determined palatability differences in early stages of plant development using sheep. This paper reports results obtained from studies correlating fescue plant and leaf types with palatability, without attempting to differentiate among digestibility, palatability, appetite, and intake. Also, a comparison of animal selectivity on clones and polycross seeding is reported. Time, labor, and expense would be saved if chosen plant characteristics could be used in the screening of clones early in the breeding program without using animals.