South Dakota - Cool-Season Grass Pasture Suppression Techniques for Legume Inter-Seeding
by Alexander Smart, South Dakota State University

Sod suppression is needed to successfully establish legumes in existing pastures; however, techniques vary in effectiveness, cost, and management. Sod suppression experiments for legume inter-seeding into cool-season pastures were conducted at SDSU's Cow-Calf Unit located near Brookings, SD, from 2003-2005. Treatments including spring burning, heavy fall and spring grazing, glyphosate herbicide, tillage, and control (no suppression) were compared for establishment success of alfalfa and birdsfoot trefoil inter-seeded into existing cool-season pastures.

Legume plant densities one year after inter-seeding for grazing, herbicide, and burning treatments were 2.6, 1.9, and 1.7 plants/ft^2, respectively; which were significantly greater than the unsuppressed control (0.7 plants/ft^2). Legume plant density under the tillage treatment (1.1 plants/ft^2) was not different from the unsuppressed control. In Experiment I, alfalfa established 1.2 plants/ft^2 compared to birdsfoot trefoil at 0.3 plants/ft^2; whereas in Experiment II, alfalfa establishment was 2.1 plants/ft^2 compared to 2.9 plants/ft^2 for birdsfoot trefoil. Drier conditions in Experiment I likely favored alfalfa, whereas wetter conditions in Experiment II likely favored birdsfoot trefoil. Cost of application was highest for the herbicide treatment and least for the grazing treatment.

This study demonstrates that alternative sod suppression techniques such as grazing and burning, which cost less than herbicides, can be used to successfully aid establishment of legumes into existing cool-season pastures.