

Improving cattle nutrition on the Great Plains with shrubs and fecal seeding of fourwing saltbush

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Research was conducted to estimate the percentage of four-wing saltbush or winterfat (palatable shrubs) needed in the diet of cattle to improve overall dietary digestibility when they graze mature, low-quality cool-season grass in late summer, fall and winter.



Additional research was conducted to estimate the percentage of four-wing saltbush and winterfat seeds that could survive passage through the bovine gastro-intestinal tract such that seeds have potential for fecal seeding (establishing new plants from cattle dung).

Mixtures of four-wing saltbush and mature smooth bromegrass or winterfat and smoothbrome had greater digestibility than smooth bromegrass alone. There were strong positive relationships between the amount of each shrub in the mixtures and digestibility.

Similar relationships were observed with mixtures of four-wing saltbush and mature Altai wildrye.

Germination of Dakota-grown four-wing saltbush seeds that were incubated for 24 or 48 hours, was 55 and 47%, respectively, with no difference in germination for the one-day and two-day incubations, but more seeds germinated if incubated versus not incubated.

Germination of Utah-grown four-wing saltbush seeds, which were incubated for 24 or 48 hours with high, medium or low quality forage, averaged only 9 and 8%, respectively. Length of incubation, forage quality and their interaction did not influence germination. Germination of Utah-grown four-wing saltbush seeds that were not incubated was 21% and much greater than for incubated seeds.

Average germination of winterfat seeds was only 0.6 and 0.1% for the 24 and 48 hour incubations, respectively, with incubation length, forage quality and their interaction not having significant influence on germination. Non-incubated winterfat seeds had much greater germination than incubated seeds.

Results from a final trial were confirmatory for Dakota-grown four-wing seeds. Four-wing saltbush and winterfat can improve diet quality of grazing cattle in later summer through winter, and some four-wing saltbush seeds have potential for fecal seeding.

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