Effects of multi-species grazing and bio-control on leafy spurge infested rangeland Golden Valley County, North Dakota

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Abstract:

A study to evaluate the effects of multi-species grazing and bio-control insects in the control of leafy spurge (Euphorbia esula L.) was established near Sentinel Butte, North Dakota in 1998. The objectives of this study were to determine if simultaneous grazing of leafy spurge-infested rangeland with cattle and sheep employing a twice-over rotational grazing treatment (TOR) in conjunction with bio-control would: 1) enhance plant species diversity and richness, and reduce leafy spurge stem density compared to season-long grazing (SL) and 2) enhance livestock efficiency and performance compared to SL. Leafy spurge stem densities were different (P<0.05) between the upland and lowland range sites on the TOR from 1998 to 2000. A significant (P<0.05) treatment effect was found when comparing stem densities between TOR and SL on both upland and lowland range sites. There was no change (P>0.05) in species richness or diversity in either the TOR or SL treatments from 1998 to 1999. There was no difference (P>0.05) in cow average daily gain (ADG) between the TOR and SL treatments; however, cow ADG was lower (P<0.05) in 1999 when compared with 1998 and 2000 on the TOR treatment. Calf ADG was not (P>0.05) different between the TOR and SL treatments for all three years of study. Calf ADG was lower (P<0.05) in 1998 than 2000 on the TOR. There was no (P>0.05) difference in ewe ADG between the TOR and SL treatments for all three years of the study. Ewe ADG was higher (P<0.05) on the SL and TOR treatments in 1999 compared to 1998 and 2000.