

Poster Session II

1. GLYPHOSATE APPLICATION AND CATTLE GRAZING: AN INTEGRATED APPROACH TO CONTROL MEDUSAHEAD. Casey Spackman*¹, Kip Panter², Clinton Stonecipher², Juan J. Villalba¹; ¹Utah State University, Logan, UT, ²USDA-ARS, Logan, UT

Livestock avoid grazing the invasive annual grass medusahead (*Taeniantherum caputmedusae* (L.) Nevski). We hypothesized that application of the herbicide glyphosate to medusahead stands would increase use of the weed by livestock. Six medusahead-infested plots (0.054 ha each) were divided into three 6 m by 30 m strips and randomly assigned to the following treatments: 1) application of glyphosate (RT 3; Roundup brand) at a rate of 394g ae ha⁻¹, 2) potassium chloride (KCl; salt in RT 3) at a rate of 174g ai ha⁻¹, and 3) Control (CTRL, no chemical application). Seven days after treatment, beef steers (n=12) were randomly paired and assigned to each of the 6 plots in a complete randomized design with repeated measures. Animals were allowed to graze from 0800 to 1700 from June 11 to June 18, 2016. Foraging events on medusahead (MH), other grasses (GR) and forbs (F) were measured using the bite count technique at successive five minute intervals per steer for 4 h/d. Cattle preferred on average GR (11.5 ± 0.4 bites/min) over F and MH (2.7 ± 0.2 and 2.7 ± 0.6 bites/min, respectively). However, bite counts in RT 3 steadily increased for GR, MH, and F from June 14 (3.3 ± 0.3; 0.3 ± 0.3; 0.7 ± 0.1 bites/min) to June 18 (4.5 ± 0.3; 2.5 ± 0.3; 1.1 ± 0.1 bites/min, respectively), while bite counts for GR, MH, and F in KCl and CTRL increased to a lower extent during the same period. Moreover, the proportion of medusahead removed from RT 3 strips increased steadily from June 12 to June 18 (from 0.02 to 0.5 ± 0.09), a much greater increment than for KCl (from -0.08 to 0.01 ± 0.02) or CTRL strips (from -0.06 to 0.06 ± 0.03). The greater utilization of glyphosate-treated medusahead plants and strips suggests that an integrated approach of herbicide and grazing treatments is an efficient tool to control medusahead spread in rangelands.