THE INFLUENCE OF COW AGE ON BOTANICAL COMPOSITION OF DIETS IN MIXED CONIFER MOUNTAIN RIPARIAN AREAS AND ADJACENT UPLANDS

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The objective of this study was to evaluate the effect of cow age on botanical composition of diets in mountain riparian areas. Treatments consisted of 30 first calf heifers, and 30 mature cows randomly assigned to four pastures (2 pastures/treatment, average 21.5 ha) in a two-year study with a cross over design. Botanical composition of diets was determined in fecal samples obtained from 10 animals in each treatment from d 36 to 39 of a 42-day grazing period using microhistological techniques. The crude protein (CP) content and in vitro dry matter digestibility (IVDMD) were determined, and correction factors were calculated for 22 major plant species. There was no between age class differences in the total number of plant species in the diet ($P >0.10$) than for heifers. Heifers consumed more ($P < 0.10$) grasses and fewer ($P < 0.10$) shrubs and trees than mature cows. In digested samples, grasses were overestimated, whereas, all forbs but northern bedstraw (Galium boreale), were underestimated, and all shrub species were
overestimated except common snowberry (*Symphoricarpos albus*). Western wheatgrass (*Agropyron smithii*) and tufted hairgrass (*Deschampsia caespitosa*) were the only species to comprise more than 5% of the diet consistently across the years. There were strong interactions between diet species composition, animal age class, and year (*P* < 0.01). In Year 1, heifers consumed more western wheatgrass, tufted hairgrass, pinegrass (*Calamagrostis rubescens*), and blue wildrye (*Elymus glaucus*) (*P* < 0.10), but less Kentucky bluegrass (*Poa pratensis*), and meadow foxtail (*Alopecurus pratensis*) (*P* < 0.10), than mature cows, but in Year 2 no between age class differences were found (*P* > 0.10) except for western needlegrass (*Stipa occidentalis*) (*P* < 0.10). The diet proportion of ponderosa pine needles (*Pinus ponderosa*) was significantly different between age classes across the study years with consistently being found more in the diet of mature cows (*P* < 0.10). In summary, mature cows appeared to have selected a diet that contained less grass species and more shrubs and trees compared to younger cows.

**Key Words:** botanical composition, microhistological analysis, cow age