

Mountain big sagebrush browse decreases dry matter intake, digestibility, and nutritive quality of sheep diets.

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Abstract

A metabolism study evaluated the influence of increasing quantities (0-30% dry matter basis) of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana* Rydb. Beetle) on dry matter intake and in vivo digestibility of whether diets. Diets consisted of hand-harvested, coarse-ground and frozen current year's growth of mountain big sagebrush leaves and twig tips mixed with chopped native grass hay. Dry matter intake decreased from 93 to 23 g dry matter day⁻¹ kg metabolic weight⁻¹ and in vivo dry matter digestibility from 59 to 0% with increasing levels of sagebrush in the diet. With increasing levels of sagebrush in the diet, water, lignin, and nitrogen contents increased in the diet, but decreased in the dung, while fiber components decreased in both the diet and dung. Total nitrogen intake decreased from 1.58±0.041 to 0.406±0.070 g day⁻¹ kg metabolic weight⁻¹, and nitrogen retention decreased from 0.80 g day⁻¹ kg metabolic weight⁻¹ with no sagebrush to a slight loss of nitrogen with 30% sagebrush in the diet. Mountain big sagebrush was not readily consumed by whethers when fed together with grass; as low as 10% sagebrush in the diet seems to adversely influence intake and digestibility. Therefore, when other more favorable forages are not available, sheep and other ruminants with similar physiological responses to mountain big sagebrush may not meet their nutrient requirements through increased sagebrush consumption