DIETS OF TAME MOUNTAIN GOATS AND BIGHORN SHEEP IN COLORADO

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Abstract: Dietary selection and forage quality of tame Rocky Mountain goats *(Oreamnos americanus)* and bighorn sheep *(Ovis canadensis)* in alpine tundra was investigated. Seven mountain goats and 6 bighorn sheep were reared and trained for use in grazing trials. Forage selection was quantified by counting the number of bites of each forage species. Nine grazing trials have been conducted during the winters of 1978-79 and 1979-80, and the summer of 1979. Preliminary data analysis for the 9 grazing trials indicates that forbs were the most important component of mountain goat diets ($\bar{x} \doteq 66\%$), while graminoids were highest in bighorn sheep diets ($\bar{x} \doteq 50\%$). Across both winters, the order of importance of each forage category for mountain goat diets was forbs ($\bar{x} \doteq 53\%$); grasses ($\bar{x} \doteq 36\%$); browse ($\bar{x} \doteq 10\%$). Concurrently bighorn sheep diets consisted of graminoids ($\bar{x} \doteq 61\%$), forbs ($\bar{x} \doteq 34\%$); browse ($\bar{x} \doteq 5\%$). During the summer, forbs were the most important forage class in the diets of both species. Summer mountain goat diets consisted of forbs (92%), graminoids (6%) and browse (2%). Simultaneously, bighorn sheep diets consisted of forbs (72%), gramindois (27%), and browse (< 1%). Forbs important in the diets of both species included *Trifolium* spp., *Campanula rotundifolia,* and *Polygonum bistortoides.* Important graminoids included *Carex rupestris, Calamagrostis purpurescens, Agropyron scribneri,* and *Kobresia myosuroides.* Mountain goat consumption of *Salix* spp. leaves comprised the only important contribution of browse to the diets of either species. In addition to dietary selection determinations, nutritional value of important forage species is being assessed by chemical determinations of percent dry matter, nitrogen, acid detergent fiber, lignin, cell wall constituents and in vitro digestibility. Nitrogen analysis for the first 6 grazing trials (November 1978 - September 1979) has been completed. It reveals that the dietary crude protein was significantly ($\alpha = .09$) higher for mountain goats than bighorn sheep for 5 of the grazing trials.

QUESTIONS - RESPONSES

Rolf Johnson: Presumably, all of this data is from your observations of what they ate and did you compare these observations with fecal pellet analysis?

Tom Dailey: No, we didn't.

Daryll Hebert;; I was wondering if you restricted diet in any way a day or two previous to taking your animals out.

Tom Dailey: Yes, we did. I failed to mention that. Usually about a week before a grazing trial we started cutting the feed back and a couple of days before the trial they wouldn't be eating very much so they were in a fasting stage.

Daryll Hebert: I did it with my sheep. I was doing it with and without restricting the diet and it certainly made a difference in terms of what they did out on the range. They were selecting when they were well fed, they seemed to be a lot more choosy than when they were restricted prior to going out.

Jerry Brown: Did you have any trials on areas that were more shrubby?

Tom Dailey: No. We had planned on it, but because it was a graduate project, I simply didn't have the time to conduct trials in other study areas. Sometimes in the winter time it would take 2 weeks to run a graze trial due to weather conditions.

Nike Goodson: Were your study areas in the areas actually used by sheep and/or goats?

Tom Dailey: No. Neither sheep or goats exist in these areas. Historically sheep have and goats don't exist there because generally in the state goats exist as transplants. We really aren't to concerned about this because generally the vegetation composition is fairly similar throughout the alpine. We were somewhat constrained because we needed an area fairly close to Fort Collins and also area that is free of tourists.