Seasonal variability in the diet composition of Alpine ibex (*Capra ibex ibex* L.) in the Swiss National Park

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Keywords: Alpine ibex, limited resources, diet composition, faecal pellets,

Abstract

At the beginning of this century several Swiss populations of Alpine ibex (*Capra ibex ibex* L.) decreased considerably, yet the reasons for these decreases are rather unclear. Among several different possibilities (genetic, medical or behavioural), resource availability could have a strong impact on the population size. To understand whether an animal population is constrained by limited resources, it is important to gain information on the diet composition over the course of the year. Using micro-histological analyses of plant fragments in faecal pellets collected quantitative data on forage composition of Alpine ibex during four seasons in the Swiss National Park (SNP) in 2008. Graminoids were the dominant forage at all times of the year averaging 69.5% and did not significantly differ between the seasons. However, when separating the consumption of monocotyledons in *Cyperaceae* and *Poaceae,* significantly different frequencies were detected among the seasons. Dicotyledons were the second most frequently consumed group of plants with 24.3%, followed by 4.9% conifers and 1.4% other plant species (ferns, mosses, unidentified fragments). Winter and spring are characterized by the relatively high amount of conifers and *Cyperaceae*. The samples collected during summer were separated from the other samples by the high amount of herbs and low amount of conifers and *Cyperaceae*. The autumn samples contained higher amounts of *Festuca* species. Altogether, the present study provides detailed data on the diet composition of Alpine ibex over the course of the year, which will help to assess whether the population of these animals are resource limited once data on resource availability is collected.

The same technique was used to investigate the diet composition of Alpine chamois (*Rupicapra r. rupicapra* L.). The both species show partially resource partitioning.