

FEEDING STRATEGIES OF THE SPRINGTAIL *CRYPTOPYGUS ANTARCTICUS* BASED ON STABLE ISOTOPE ($\delta^{13}\text{C}$ & $\delta^{15}\text{N}$) FEEDING EXPERIMENTS

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The Maritime Antarctic collembolan *Cryptopygus antarcticus* (Isotomidae) is the dominant springtail species throughout the Antarctic Peninsula/Scotia Arc area (70-90% of the fauna in moss habitats).

The ecological significance of Collembola species in the Antarctic and more especially *C. antarcticus* calls for a more detailed investigation of their role in ecosystem functioning. Early statements postulated that this Collembola species was apparently a non selective microbial or detritus feeder. In order to clarify the feeding selectivity of this particular springtail species, this study aims (1) to determine if *C. antarcticus* is an omnivorous organism, (2) to clarify the feeding selection ability of the species, and if so, (3) to assess its feeding preferences among a restricted number of diets using laboratory feeding experiments and stable isotope ratios techniques.

It is essential to know both what is consumed and what is assimilated by the organisms in order to be able to assess the exact role of *C. antarcticus* within the Antarctic ecosystem.

With this intention, three experiments were carried out in order to investigate (1) the feeding preferences among labeled ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) diets-6 choice experiment, (2) the preference between two different diet (labeled and non labeled)-2 choice experiment. The diets tested were composed of one alga species *Prasiola crispa*, two lichen species *Umbilicaria decussata*, *Usnea Antarctica*, and three moss species *Brachytecium glaciale*, *Pohlia nutans*, and *Sanionia uncinata*. The proportion of springtails found on or close to each diet was used for the analysis and collembolan stable isotope ratios composition was measured at the end of the experiments.

Isotopic composition ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$) of the food sources and animals suggest that *C. antarcticus* performs a selective feeding towards the diet *Prasiola crispa*.