

Feeding habits of Japanese macaques in Kojima group using stable isotope ratio analysis at the individual scale.

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In this study, we analyzed the diet of the Kojima group of Japanese macaques (*Macaca fusucata*), whose social attributes such as age and sex are identified, to quantify the effects of these social attributes on their diet. We used carbon, nitrogen, and sulfur stable isotope ratio analysis and analyzed 20 individuals belonging to the Kojima group. As a result of the analysis, individual differences were detected in all three stable isotope ratios, indicating individual differences in feeding habits even within the same group. We also analyzed the isotope ratios of food resources consumed by the Kojima group and estimated each individual and attribute's food intake ratio using a Bayesian mixing model. As a result, we could not detect any effect of the dominance-inferiority relationship within the group on the food intake rate. Still, the food intake rate varied depending on age and sex. Specifically, males consumed a larger proportion of marine-derived food resources than females and consumed a larger proportion of forest-derived food resources. On the other hand, females consumed a larger proportion of wheat fed to them by humans than males. Furthermore, the preference for marine-derived resources differed among generations at different ages. This study shows that stable isotope ratio analysis, which has been used in many previous studies at the resolution of species and populations, is also useful at the resolution of the individual level and can be used to analyze the structure of a population.

Keywords: society of Japanese macaque, stable isotope, feeding habit