

A New Methodology for the Evaluation of Ecological Characteristic of the Camel

- A case Study of Climate Change and Breeding of Camel -

Buho HOSHINO*¹⁾, Sara MORIOKA ¹⁾, Nami HASEGAWA ¹⁾, Mei SUGAWARA ¹⁾, Kaoru IMAMURA ²⁾,
Satomi ISHII ¹⁾, Naruya SAITOU³⁾, Ruslan SALMURZAULI⁴⁾, Sabyr NURTAZIN⁴⁾, Kanji HASHIMOTO¹⁾

Abstract: Kazakhstan dry steppe is one of important pasture lands of breeding of dromedary camels. In this study, we analysis the behavior patterns and habitat use of dromedary camels based on satellite (GPS) tracking data and to clear the relationship between an increase in the camel farm and climate change. The herdsman's (or Owners) is decision the pastureland use by year-to-year rainfall. They are also known how to control the different grazing lands by the dry season and the rainy season in the same year. Camel's behavioral pattern was different in the dry season and the rainy season. The result shows, the average value of the moving speed in the pastures of spring (rainy season) is 2.81 ± 1.64 km / h, and the average value of the grazing speed is 0.324 ± 0.241 km / h in same season. In addition, the average value of the moving speed in the pastures of the summer (dry season) is 4.85 ± 0.1278 km / h, and the average value of the grazing speed is 1.027 ± 0.128 km / h in dry season. More of the moving speed and deviation value of grazing speed Both the dry season, the variation is large, it can be seen that the movement speed is also nearly twice of the rainy season. However, 50% core area (MCP, Minimum Convex Polygon) of home range of grazing area in has been shown to be more of the rainy season, because we finding that in dry season the main food resources of camel is tree leaves and tree branches or shrubs. Recently, lot of studies shows indicated that continuous herbivory pressure has a positive effect on plant performance and biodiversity, known as “grazing optimization.” In this study, we established three sites of the different pasturage pressure and investigated relationship between pasturage pressure and the Simpson's Index of Diversity (D-value) based on field observations (measurements), GPS tracking and stocking of camels. We analytically examined a hypothesis of grazing optimization in which herbivory improves the photosynthetic ability of individual plants. We examined plant performance under various herbivory pressures and considered the evolution of plant phenology in response to a given herbivory pressure.

Key Words: Behavior pattern of camels, Camel Farm, grazing optimization theory, Kazakhstan, Satellite tracking of camels.