

With global warming progressing, it is critical from the perspectives of biodiversity conservation and wild animal management to clarify how changes in temperature affect the feeding efficiency and foraginggulping behavior of wild animals.

In this study, we focused on large Japanese field mice (Apodemus speciosus Apodemus speciosus) that are widely distributed widely in Japanese forests ~~and~~. Our study revealed that their capability to detoxify tannin (\*\*), an anti herbivore defensive substance (\*) a plant defense chemical (\*) contained in plants, improves at low temperature.

Various chemical compounds, including tannin, are primarily detoxified in the liver after being absorbed-ingested into the body. It is ~~commonly~~ known that the liver's ability to detoxify alcohol decreases at higher temperatures; ~~nevertheless~~. Nevertheless, it has been unclear how temperature is correlated with the detoxification process of tannin, one of the most common toxins present in nature.

To address this question, we fed oak acorns containing high concentrations of tannin to large Japanese field mice raised at either 10°C or 20°C 10 or 20 degrees Celsius. Next, Then we and compared the levels of detoxification in the liver, intake amount, and digestion ~~—~~ rate. Consequently, we founddiscovered that the mice raised-kept at 10 °C degrees detoxified tannin faster and thus ate larger amounts of acorns. Moreover, they digested proteins contained in acorns more efficiently.

These results indicate that large Japanese field mice are able to neutralize the toxicity of tannin more effectively and consume acorns more efficiently at lower temperatures. Japanese field mice survive the cold winter by eating acorns stored during the autumn; therefore, this trait must be advantageous for their overwintering. These findings provide crucial information forin observingpredicting changes in habitats and populations of wild animals amid global warming.

**Comment [Editor1]: Level 5**

[Scientific Notation] [SME]

The scientific names of species are italicized

**Comment [Editor2]: Level 5**

[Article] [Grammar]

Definite article was needed at this instance.

When this article is used, it means that we are referring to a specific or identified noun, so it will be clear to the listener or reader what exactly is being referred to.

**Comment [Editor3]: Level 5**

[Word and Phrase Choice]

[Language]

Improved the word choice for better clarity as per the context

**Comment [Editor4]: Level 5**

[Consistency] [Style]

Consistency of scientific notation was maintained. Inconsistency is an error commonly made when writing a research paper, and such an error creates negative impression about the overall quality

**Comment [Editor5]: Level 5**

[Article] [Grammar]

Definite article was not needed at this instance.