

# Elephants can differentiate between food amounts by smell alone

June 5 2019, by Bob Yirka

---



Credit: CC0 Public Domain

An international team of researchers has found that Asian elephants can tell which of two food sources has more food in it by smell alone. In their paper published in *Proceedings of the National Academy of*

*Sciences*, the group describes experiments they carried out with elephants and what they learned by doing so.

Prior research has shown that elephants are among the smarter animals, and that they have a really good sense of smell—far better than dogs. In this new effort, the researchers tested an aspect of odor detection that no animal, including humans, has ever been known to possess—the ability to discriminate between [food](#) portion size using only their olfactory senses.

The experiments consisted of loading up two buckets with [sunflower seeds](#), a delicacy the elephants particularly enjoy, locking lids with small holes in them onto the buckets and then allowing a single elephant to sniff both for a few moments. The researchers then loosened the lids and presented the elephant with the buckets again, noting which the elephant chose to open and dive into first. They repeated the experiment several times with several different elephants, while also varying the amounts of sunflower seeds in the buckets.

The researchers report that the elephants showed a clear preference for the bucket containing more seeds, even though they had never actually seen what was in it. The team also found that the greater the difference in [seed](#) quantities, the better the elephants were at picking the one containing the most. They also found that the males were better at determining quantities than were the females.

The researchers point out that this is the first example ever documented of an animal being able to differentiate between food quantities by smell alone. They also note that their findings may prove useful in places like Thailand, where elephants are increasingly perceived as a nuisance as they encroach on human-occupied areas. Up until now, most efforts to deter them have been based on attempting to scare them away (using firecrackers, for example). If the [elephants](#) can smell a better deal

nearby (set up for them ahead of time), the researchers note, they might be convinced to go there instead.

**More information:** Joshua M. Plotnik et al. Elephants have a nose for quantity, *Proceedings of the National Academy of Sciences* (2019). [DOI: 10.1073/pnas.1818284116](https://doi.org/10.1073/pnas.1818284116)

© 2019 Science X Network

Citation: Elephants can differentiate between food amounts by smell alone (2019, June 5)  
retrieved 23 April 2024 from  
<https://phys.org/news/2019-06-elephants-differentiate-food-amounts.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.