

Guano

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GUANO: BATS' GIFT to GARDENERS
by Sara Keleher

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"All things in nature have a purpose. Our challenge is to understand the value of these natural gifts and use them responsibly."

The man who spoke these words wasn't talking about plants, animals, or any of nature's more obvious jewels; he was singing the praises of bat dung.

As the owner of Garden-Ville, one of Central Texas' finest organic gardening emporiums, guano purveyor Malcolm Beck not only sells the pungent powder, he also harvests it every year from nearby Bracken Cave.

Timing

Guano should not be harvested when bats are present. At Bracken Cave, harvesting is never scheduled until after the bats—some 20 million Mexican free tails (*Tadarida brasiliensis*)—have migrated south for the winter (typically in early November) and the guano has had a few weeks to dry. Beginning the process during the bats' stay would disturb them needlessly and could jeopardize their survival. The cave, which is owned and protected by BCI, is home to the world's largest known bat colony.

Tadarida brasiliensis



Also known as the **Mexican free-tailed bat**, the **Brazilian free-tailed bat** is one of the most abundant mammals in North America. They are typically 9 cm (3.5 in) in length and weigh around 7–12 g (0.25–0.42 oz) with females tending to be slightly heavier than males by 1-2 grams for increased fat storage to use during gestation and nursing. Their ears are wide, rounded, and large compared to their heads, nearly meeting at the front of the face, but distinctly not joined at the midline and projecting anterodorsally from just before the muzzle to the back of the head. They use their large ears to help them find prey using echolocation.

Roosting Preference: It tends to roost in huge numbers, but at relatively few locations, which makes them vulnerable to habitat destruction.

Diet: Insectivorous - they eat moths, beetles, dragonflies, flies, true bugs, wasps, and ants.

History

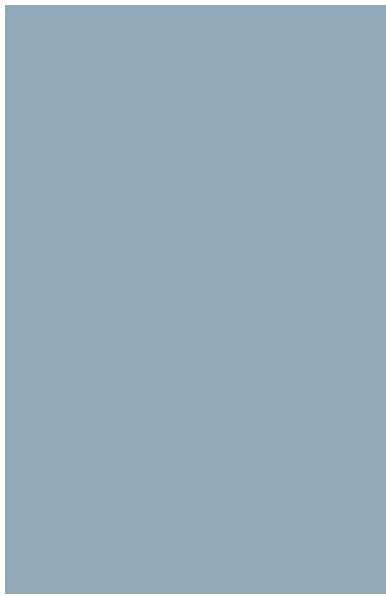


Bat guano has been used in agriculture in many regions for hundreds of years. In the 1600s in Peru, the Incas valued guano so highly that the punishment for harming the animals that produced it was death. During the late 19th century, it had become important enough to American farmers that the government offered free land to those who discovered guano deposits, provided the harvest was made available to U.S. citizens.

How It Happens

The guano cycle begins with plant matter that is eaten by insects. The insects in turn are eaten and digested by bats. After the bats deposit their waste on a cave floor, it is processed once again by millions of beetles and billions of decomposing microbes. What's left is perfectly preserved and protected inside the cave—a natural fertilizer warehouse.

Its primary ingredients are roughly 10% nitrogen, 3% phosphorous, and 1% potassium.



Harvesting

The harvesting of guano perpetuates an age-old connection between bats and people but can be dangerous for both unless professionally managed. These two Garden-Ville employees are protected from the guano's intense ammonia fumes and spore-laden dust by gas masks and are working in the cave at a time when no bats are present.



Vacuum trucks extract guano from a 100-year-old shaft at Bracken Cave. This modern method of harvesting is far more efficient than the block-and-tackle pulley system used in the past.



Photos

