

## **JOHN'S CORNER**

### **Organic Fertilizers and Nutrients –12 Bat Guano**

*By John Ferguson*

Guano comes from an Inca word for bat or sea bird manure via Spanish. Historically bat guano has been one of the most important natural fertilizers ever used. It has been used by cultures all over the world for hundreds of years. Its value is so great that it triggered several wars and the Incas killed anyone that disturbed bat colonies or bird nesting beds. Pound for pound other manures or even artificial fertilizer do not compare to bat guano as a source of balanced plant nutrients. Bat guano contains all the major and minor nutrients and many trace elements. We commonly see nutrient rates like 10-3-1 depending on the source.

Bat guano starts out as bat manure, where the bat droppings fall to the floor of a cave. Once on the cave floor the manure is eaten by guano beetles and microbes and is no longer bat poop. This processing (decomposing) renders the bat guano odor free, free of pathogens and other toxins and turns it into the wonderful fertilizer full of beneficial microbes we call bat guano.

Many bats are migratory in nature. When the bats have left the cave for the season and the beetles have finished eating it, it is a dry powder that can be vacuumed up, bagged and sold. When harvested in this manner it is a sustainable resource. However, some bats are not migratory and harvesting the guano may disrupt the bat colony leading to its demise. Also the guano will contain processed manure and fresh droppings that may contain human pathogens.

There is a lot of anecdotal evidence that when a tea is made from bat guano it has been found that the tea will act as a natural fungicide when sprayed on a plants leaves. It has also been found that when tea or guano is applied to the soil it naturally suppresses root knot nematodes. Numerous research studies have shown these same effects due to microbes hence I suspect this benefit is from the microbial components in the guano.



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Typical usage would be 2 teaspoons per 6 inch pot or 2-3 quarts per 100 square feet of garden. This varies between supplier hence read their recommendations.

**SUMMARY:**

Bat guano is a great organic fertilizer if collected and processed in a sustainable manner.

**PROS:**

- good source of major nutrients
- contains minor and trace elements
- supplies both fast and slow release nutrients
- nutrients are resistant to leaching
- feeds soil microbes
- contains no fillers
- improves soil structure (sand or clay)
- increases soil organic matter
- naturally low in salts
- adds organic matter to the soil
- used in compost piles
- contains beneficial enzymes
- odor free
- improves plant growth

**CONS:**

- expensive due to high demand
- limited availability
- may lead to destruction of bat colonies by unethical suppliers
- a few sources may have additional processing to increase phosphorus (P) concentration that renders it no longer organic.

**PROS:**

- good source of major nutrients
- contains some minor and trace elements

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- feeds soil microbes
- does not affect soil acidity
- increases soil organic matter
- naturally low in salts
- only apply once per year
- doesn't leach and pollute

**CONS:**

- most likely GMO (unless certified organic)
- not water soluble
- may contain BT poison from genetically modified varieties (GMO)
- not approved for organic production unless certified organic.