

Insect nutritional comparisons



Bugs Alive is a Cairns based innovative insect production company supplying live insects.

Our insects are fed fresh fruit and vegetables and a grain-based diet with supplements to ensure your pets receive the best nutrition possible.

Nutritional details (live)

Rating as a feeder	Feeder insect	Dry Matter (as fed)	Protein	Fat	Fibre	Ash	Ca:P ratio
#1	Black soldier fly larvae	91.7%	37.7%	32.6%	8.7%	10.7%	4.5:1
#2	Crickets	73%	18%	5%	2%	2%	0.3:1
#3	Woodies (Dubia roaches)	65%	21%	9%	5%	1%	1:3
#4	Silkworms	79%	13%	2%	3%	1%	1:1.4
#5	Silkworm pupae	76%	15%	6%	2%	1%	nd
#6	Mealworms	65%	19%	9%	2%	2%	1:07
#7	Mealworm Beetles	63%	25%	7%	6%	2%	nd
#8	Giant mealworms	nd	17%	21%	nd	nd	1:16.7
#9	Fly pupae	68%	20%	6%			1:10
#10	Earthworms	82%	11%	3%	2%	1%	1.5:1
#11	Fruit flies (<i>Drosophila spp.</i>)	70%	21%	5%	5%	2%	1:10
#12	Grasshoppers	72%	20%	2%	5%	2%	nd
<p><i>Figures are 'as fed' averages (not on a Dry Matter basis).</i></p>							
<p><i>nd – no data</i></p>							

*Crickets have over 3x the antioxidants as orange juice.
Insects are packed full of protein, beneficial fats, vitamins, minerals, antioxidants and they are a prebiotic fibre.*

Most insect nutrition is measured in “Dry Matter,” or nutritional value when dried out. When comparing nutrient values, “As Fed” is a more accurate measure.

Converting from As Fed to Dry Matter: Divide percentage of nutrient As Fed by the percentage Dry Matter, and then you get the percentage of nutrient by dry weight.

Converting from Dry Matter to As Fed: Multiply the percentage of Dry Matter by percentage of nutrient.

Further Nutritional information

Protein is essential for building and maintaining muscles, as well as assisting proper organ function and providing energy. High protein insects are great for helping sick or injured reptiles recover, as protein is used for cell maintenance and repair.

It is advised that strict insectivores (reptiles that only eat bugs, no veggies) must be fed a variety of insects to make sure they get the nutrients they need, as some feeders are higher in nutrients than others.

Fats in insects are generally unsaturated, which is better than saturated fats. A high fat diet is still unhealthy for reptiles. The fats may be “healthy” by our considerations, but fat as a nutrient is very high in energy: 9 (kilo)calories/g of fat, vs 4 (kilo)calories/g of protein or carbohydrate.

Excess energy gets converted to fat, which can contribute to obesity in pet reptiles. Fats are essential for a variety of functions:

- Assists absorption of certain vitamins (vitamins A, D, E, K)
- Cushions internal organs
- Helps create fat stores for brumation and egg laying
- Helps maintain body temperature

Fibre in insects comes mostly from chitin, or the insect’s exoskeleton. It is a complex carbohydrate (good). The amount of fiber in an insect is typically very low; high amounts can lead to digestive issues if fed too often or in excess.

The hardness of an insect’s exoskeleton does not indicate higher fiber levels (or chitin content). Instead, it’s due to certain protein chains used to reinforce the exoskeleton.

Ash are the parts of the bug that aren’t protein, fat, or fibre. This is typically salts, minerals, and metals, including the insect’s gut contents. Higher levels of ash, can be assumed to correlate with higher levels of vitamins/minerals as well as a larger gut capacity.

Ca:P — The Calcium to Phosphorus Ratio

Knowing how to balance your reptile’s dietary calcium and phosphorus intake is critical to managing its health.

Reptiles require twice as much dietary calcium as they do phosphorus. In order to properly digest phosphorus, calcium must be present. The optimal ratio of calcium to phosphorus is ~2:1. When there isn’t enough calcium for the reptile’s body to properly process phosphorus, it will steal calcium from bones and other stores. Over time, this repeated robbery of calcium can lead to Metabolic Bone Disease (MBD).

Most insects contain more phosphorus than calcium, except for Black Soldier Fly larvae. Calcium supplements are designed to correct the natural imbalance between calcium and phosphorus. When choosing a calcium powder, make sure that it does not contain phosphorus or more than 5000 IU/kg of vitamin D3.

Why should you care? Knowing these percentages gives you the knowledge to make educated decisions about which feeders to give your reptiles, and how often, based on individual needs.

Disclaimer: this information has been provided in good faith based on industry average published data. Published data also varies. Therefore, individual samples may vary and no responsibility accepted for variances.

