

Black Soldier Fly Larvae Information

Common Name: Black Soldier Fly Larvae
 Scientific Name: *Hermetia illucens*
 Size: <20mm



Nutritional details (Dry Matter basis)

Crude Protein	42.1%
Fats	34.8%
Ash	14.6%
Crude fibre	7.0%
Sugars/Nitrogen free extract (NFE)	1.4%
Calcium	7.5% or 75g/kg
Phosphorus	0.9% or 9g/kg



Black Soldier Fly larvae

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. Keep an eye out for our novel species.

Facts about our live Black Soldier Fly larvae:

- Responsibly raised on a fruit, vegetable and grain diet.
- Grown in Cairns by Bugs Alive
- Black soldier fly larvae (also called Vitaworms, Calci worms, Phoenix worms), are a highly nutritious insect which have become hugely popular worldwide as food for captive animals. They're high in calcium, so don't need dusting with calcium supplements. BSF larvae can prevent, stop, and reverse the Metabolic Bone Disease caused by Calcium deficiency.
- High in protein and lysine (an essential amino acid), low in fat. They wriggle, making them great for picky eaters and irresistible to reptiles, birds and fish.
- ~20 times more calcium than crickets
- Recommended by veterinarians, as are the only calcium-rich feeder insect with a naturally balanced calcium and phosphorus ratio.
- Feeding them to your animals can improve the animal's natural colouring.
- High levels of lauric acid (known to kill viruses, protozoa, and coccidia).
- They can be fed live, frozen (after warming to ambient temperatures) or dried.

Black Soldier Fly Larvae care

- Black soldier fly larvae are an everyday **super-food** for your pets.
- Light coloured larvae will continue to grow if fed (soft moist foods).
- Larvae get darker as they develop (brown pre-pupae and then into dark brown pupae). Cooler (8-12°C) temperatures will slow development. Pupae are still fine to feed to animals - calcium levels peak at the pupae stage.
- Normal larvae to pupae stage takes 10-20 days before turning into a fly. Cool temperatures will extend this.
- If using the larvae within two weeks, then store them in a closed lid container under room temperature.
- If using larvae after two weeks, store them in a closed lid container in a cool place (8-12°C) and allow them to revive under room temperature for 10 minutes before feeding. A fridge (2-4°C) is too cold for larvae to survive.
- For best results, use within 2 weeks.



Black Soldier Fly pupae

- BSF require minimal care:
 - ✓ do not need to be fed to stay alive
 - ✓ will not bite you or your pet (larvae or adult fly)
 - ✓ do not make noise or give off odours.

Black Soldier Fly -adult fly



Why feed BSFL?

- ✓ Black Soldier Fly Larvae are a favourite of reptiles, amphibians, spiders and scorpions, fish and birds.
- ✓ BSF larvae have been shown to improve the health of lizards due to their healthy ratio of calcium to phosphorus (6:1) which boosts the immune system.
- ✓ BSF provide the required daily 2:1 calcium to phosphorus ratio, without the risk of a vitamin D-3 overdose. If too little calcium supplementation is given, the dragons develop Metabolic Bone Disease. If too much calcium is given, the dragons are at risk for toxicity, calcification of the kidneys and liver and death.

Further Nutritional information

Dried Black Soldier Fly larvae
(ESR International 2008)

Minerals	Unit	Content (ave)
Calcium	g/kg DM	75.6
Phosphorus	g/kg DM	9.0
Potassium	g/kg DM	6.9
Sodium	g/kg DM	1.3
Magnesium	g/kg DM	3.9
Manganese	mg/kg DM	246
Zinc	mg/kg DM	108
Copper	mg/kg DM	6
Iron	mg/kg DM	1370

Amino acids	Unit	Content (ave)
Alanine	% protein	7.7
Arginine	% protein	5.6
Aspartic acid	% protein	11.0
Cystine	% protein	0.1
Glutamic acid	% protein	10.9
Glycine	% protein	5.7
Histidine	% protein	3.0
Isoleucine	% protein+	5.1
Leucine	% protein	7.9
Lysine	% protein	6.6
Methionine	% protein	2.1
Phenylalanine	% protein	5.2
Proline	% protein	6.6
Serine	% protein	3.1
Threonine	% protein	3.7
Tryptophan	% protein	0.5
Tyrosine	% protein	6.9
Valine	% protein	8.2

Recommended by Veterinarians

BSF larvae have a naturally balanced calcium:phosphorus ratio and are the only calcium-rich feeder that can be safely fed as a staple diet. BSFL are also a natural weapon against coccidia, have a perfect balance of calcium and phosphorus, and high levels of natural lauric acid. Lauric acid has excellent antimicrobial properties including potent activity against lipid coated viruses, clostridium, and pathogenic protozoa including coccidia.

Black Soldier Fly is native of the tropical, subtropical and warm temperate zones of America. The development of international transportation since the 1940s resulted in its naturalization in many regions of the world and is now widespread in tropical and warmer temperate regions globally.

Low pathogenicity

Unlike other fly species, BSF (*Hermetia illucens*) are not a disease vector as the adult fly lacks functioning mouthparts, it does not transmit disease. Additionally, the larvae modify the microflora of manure, potentially reducing harmful bacteria such as *E. coli* and *Salmonella* (van Huis et al., 2013). It has been suggested that the larvae contain natural antibiotics (Newton et al., 2008).



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 is accepted for variances.