

BLACK SOLDIER FLY LARVAE

(*Hermetia illucens*)

[PetWave Premium Quality Black Soldier Fly Larvae](#) (*Hermetia illucens*) or VitaWorms are recommended by many veterinarians, as the only calcium-rich feeder that has naturally balanced calcium and phosphorus. Vitaworms are high calcium and low in fat, which makes it an excellent staple feeder. **Size of BSFL:** Vitaworms are 10 to 25mm in length and 6mm in diameter **Packaging of BSFL:** We package the Vitaworms in a substrate of organic feed inside a calico bag and then placed in an aerated cardboard box for bulk or an aerated plastic tub to ensure that they arrive in premium condition.

NAMES

On the internet, the humble BSFL are known by a myriad of brand names including Calci Worms, Phoenixworms, BIOgrubs, Nutrigrubs, Reptiworms and Soldier Grubs. In Australia, the most common names on online forums for the Black Soldier Fly Larvae include BFSL, Vitaworms, Calciworms, Lizard Grubs, Phoenix Worms, Dragons Crunchy Critters & Beardie Grubs. Black Soldier Flies Larvae are increasing in popularity around the world as a nutritious feed for reptiles, turtles, predatory fish, scorpions, spiders and birds including chooks. In some countries, people are using BSFL as a sustainable source of protein for human consumption and as mass recycler of waste. These Lizard Grubs are expected to play a big role in our future. Black Soldier Flies are edible at pre-pupate, pupate & fly stages.

MATURE BLACK SOLDIER FLIES

Mature Black Soldier Flies (with wings) mimic wasps in appearance but in fact can't bite or sting. This is because as a fly they only live for 5 to 8 days and therefore do not need or have a mouth parts to eat. Since they don't eat, they are not vectors of any human diseases unlike some other flies.



ABOUT PETWAVE

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We know that your time is valuable & you want access to reliable, premium products at perfect prices. We are able to satisfy your needs through our premium online offer. We are very proud to offer the highest quality and largest selection of live fish, aquarium plants and driftwood creations, a wide range of live food such as insects, frozen pet food especially for snakes, lizards, amphibians and birds of prey and many rare, creative and beautiful decorations for your aquarium and terrarium.



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BLACK SOLDIER FLY LARVAE CARE SHEET

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NUTRITION

Black Soldier Fly Larvae (BSFL) compares favourably to other popular feeders with a calcium to phosphorous ratio of 1.5:1, very close to the ideal 2:1 ratio without [gutloading](#) or [calcium powder](#) required with other feeders:

	Calcium	Phosphorous
Vitaworms	8115 ppm	5400
Crickets	345 ppm	4300
Mealworms	133 ppm	3400

* these ratios can be further improved with a specialised & balanced diet

BENEFITS

- great food for a picky eater, irresistible to most reptiles, birds and larger fish
- the BSFL are extremely active, wiggling intensely. This behaviour makes them exciting and enticing to your pet
- they are easily confined to a food bowl during your reptile's meal, so easy to catch and eat
- this perfect herp food can help with growth, development of bones, nerves, egg and can help to prevent or reverse metabolic bone disease, common in lizards and frogs
- BSFL contains high levels of lauric acid (known to kill reptile viruses, protozoa and coccidian), thereby acting as a natural antibiotic for your pet
- Vitaworms require no feeding and make no odour or noise
- our larva have the ability to prevent and correct Metabolic Bone Disease which is caused by calcium deficiency.
- nutritional boost for gravid or just-laid females; increases chance of healthy offspring and a great start for hatchlings, giving them an early boost of nutrition to increase their health



HOW TO FEED YOUR PET

Feed Vitaworms straight from the container into a food bowl. The darker Vitaworms are those slightly more mature in preparation for pupation. This is normal and the Vitaworms are not dead, the calcium levels are at their highest at this stage (the darker the better). We suggest feeding the darker worms first while they are still moving. If you are cooling your BSFL, let them warm up to room temperature for about 10 minutes. This will make them move more and be more attractive to your pet.

It's recommended to feed your lizards 4-8 lizard grubs per meal depending on their size and appetite. Vita worms are a great addition to your bird's diet also, it's recommended to feed a medium size bird (e.g: butcherbirds and kingfishers) 10 per meal, with large birds (eg: magpie and kookaburras) being recommended a serving of 10-20 per meal. If some of the Calciworms do pupate, then you can leave them to let the flies hatch. These flies can be of significant interest to active hunters such as Boyds Forest Dragons, Green Tree Frog and Red Barred Dragons who chase them around their enclosure, great exercise!

STORAGE AND CARE

You do not need to feed the Black Soldier worms to keep them alive. If the larvae are still white in colour, you can help them to grow by feeding them bananas or any other organic matter. BSFL are amazingly hardy tolerating a wide range of temperatures up to 40°C if you store them in a cool and dark place. They will remain fresh in their calico bag or an aerated sealed container for 2 to 3 weeks at room temperature (just make sure the substrate bran is slightly moist - relative humidity of 70% is perfect). Storing your Phoenix Worms at 10 to 12°C can slow their growth and extend their life by up to 12 weeks (although temperatures of less than 8° C can be deadly). Most fridges run around 4° C, so you should not put BSFL in a normal refrigerator as it will kill them. Wine coolers and fridges that run hotter than normal (around 12°C or warmer) are fine! Be aware that Black Soldier Fly Larvae can crawl up steep surfaces including glass and plastic so it is important to keep them enclosed to prevent escape.

STAGES OF LIFE

At room temperature:

Day 1 - Stage 1: Female fly lays eggs

Day 4 - Stage 2-5: Eggs hatch into larvae
White larvae eat & grow through 6 instar stages getting darker

Day 21* - Stage 6: Mature prepupa larvae metamorphosis into pupa

Day 36* - Stage 7: Fly emerges, Fly mates, Female fly lays eggs

Day 44 - Stage 8: Fly dies

*At cooler temperatures, these stages can be extended significantly