



The recycler of nature



The Black Soldier Fly (BSF)

The larvae of the black soldier fly (BSF) is a scavenger with powerful mouth parts that can recycle any organic material especially decaying material. It has been used in forensic pathology to establish time of death of a decaying body. The organic material includes food scraps, rotten food, mold, coffee grounds, kraal manure, pet waste, animal offal, waste plant material and many more. The insect do not eat material that are still alive. You can easily put your hands in the BSF bin.



Is it a normal fly?

The beneficial black soldier fly (*Hermetia illucens*) is probably the best-known member of the Stratiomyidae family in the Diptera order. The adult fly looks like a wasp buzz like a bee but does not sting like a bee or a wasp. Black soldier flies can be seen in bright, sunlit areas, resting on nearby structures or vegetation and frequenting flowers of the daisy and carrot families.

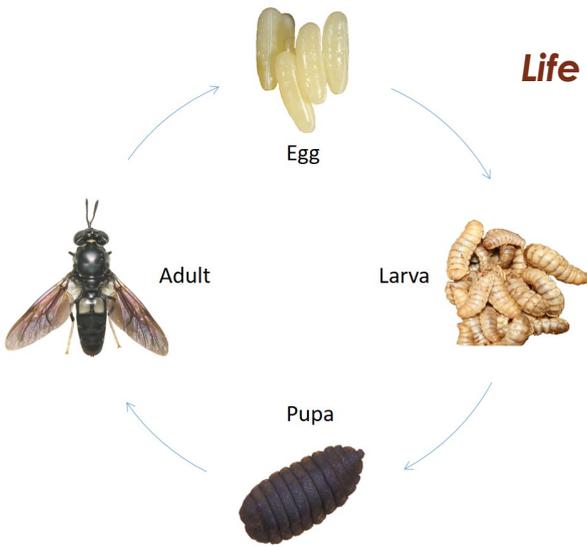


Why is this fly a beneficial insect?

They are one of the most beneficial flies in existence and are considered non-pests. The adult black soldier fly does not have mouthparts and does not feed upon waste. They do not bite, and as only the larva feed, are not associated with transmitting any diseases.

When this fly is established in a bin in an area it outcompetes house flies and can be used to control fly problems around the compost heap. This fly also feeds on hazardous waste like faecal material from pets, cattle and horses. It also feeds on the waste from abattoirs and can be used to feed on the wet organic waste from land fills.





Life cycle of BSF

The lifecycle of BSF consist of the egg, larva, pupa and the adult. Mating takes place in flight and the female lay about 500 eggs on the edge of decaying material. The eggs hatch between 4 days and 3 weeks. When the larva hatch it is 2mm long and is creamy white in color. The larva has 6 instars and the color becomes darker to reddish brown with each new instar. The head of the larva is brown or yellow. The older the larva the harder the exoskeleton until it is shield-like and leathery. The larva is between 16mm and 25mm in length and 6mm wide. In the final stage the larva stops eating and empty their guts. Their mouth parts change to an appendage that is used for climbing and in this changing phase it is called the prepupa.

The prepupa

The mouth parts of the larva becomes hook like so that the prepupa can climb and find a clean dry place to pupate. The pupa develops inside the exoskeleton of the prepupa and is two thirds the size of the prepuae.

If you farm with BSF the prepupae could be collected and used for animal feed like chickens and pigs. It is also used to feed exotic fish



Chickens

Why would I keep BSF

This fly can help you and the environment by:

- Clearing hazardous organic waste like animal waste
- Feeding on grass, leaves and organic waste from your garden and kitchen
- Controlling the house fly pest
- Decreasing the amount of organic waste you put in the dustbin

What do you need

- You need a BSF bin
- You need BSF larvae to start off the colony
- You need to collect all organic waste in your house and garden and put it in your BSF bin



Elize Lundall-Magnuson

Tel.: (+27 12) 808-8170
lundallme@arc.agric.za

Sam Mathibe

Tel.: (+27 12) 808-8172

ARC-PPRI

Private Bag X134
Pretoria, 0001
South Africa

