

- At transplanting of seedlings: Apply in the holes very close to the roots.
- For perennial crops (e.g., Napier grass, sweet potato vines): Apply at planting and twice (during long rains and short rains) after every cutting.
- The recommended rate of application is 10-20 tons/ha.

NB: Application should be done on moist soils.



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PROCESSING AND UTILIZATION OF BLACK SOLDIER FLY FRASS MANURE





Adult Black Soldier Fly

BSF larvae

Frass - organic manure

Introduction

Black Soldier Fly (BSF) Frass casting is exoskeletons left behind after the larvae are sieved out from consumed Substrate. It resembles crumbly soil after sun drying and is used to improve soil fertility. The frass stimulates plant growth and sustainable fertility and health. It is an organic fertilizer that has higher organic matter content and nutrients

Benefits of using black soldier fly in agriculture

Using Black Soldier Fly in agriculture provides various benefits including the following:

- Black Soldier Fly serves as an efficient organic bio-degrader, showcasing abundant breeding capabilities in natural settings.
- The Black Soldier Fly larvae efficiently break down organic wastes into fertilizer, reducing bulkiness and supporting effective waste management.

- The BSF larvae contribute to the overall nutrient content of the fertilizer by releasing nitrogen, phosphorus, and calcium embedded within decaying matter.
- The BSF larvae produce a nutrient-rich fertilizer beneficial for plant growth by utilizing some of these nutrients for their own survival and excreting a significant portion into the frass.
- The BSF larvae assist plants in resisting pathogens, promoting improved plant health. This benefit arises from the presence of chitin, a protein found in the insect exoskeleton.

Nutrient profile of Black Soldier Fly frass (%)

Nitrogen	Phosphorous	Potassium
5	3	2

Adopted from Mason, B. (2016)

Processing of BSF frass

- The BSF frass is sieved to separate frass from larvae.
- Frass is sun-dried to achieve a moisture content of about 14% or less.
- Store the frass in a dry place away from direct sunlight and rain



Sieving the larvae from the substrate.

Examples of how BSFL frass is applied to soil

- At planting: Horticultural crops are heavy feeders than other field crops.
- For annual crops (e.g., maize): Apply once a year in the holes during planting.
- In the nursery (e.g., with vegetables): Apply during planting.