

DipTerra Overview: The life cycle of the Black Soldier Fly **(posted 01/04/2012)**

The Black Soldier Fly (*Hermetia illucens*) from the family *Stratiomyidae* is found throughout the Northern and Southern hemispheres, mostly in warm climates or during summer, between approximately the equator and the 49th parallel.

Adult flies have a wasp-like appearance, are short lived (3-4 days), do not feed in the adult state and therefore do not spread diseases. Their sole purpose on emerging from their chrysalis is propagation of new generations of flies.

Eggs are very small (1-2 micrograms) and are deposited by female flies in clusters called clutches containing 300 to 500 eggs. After a couple of days to one week in warm and moist conditions small larvae hatch and start feeding.

BSF larvae (BSFL) are very small and white (less than one mm long), grow fast, and in ~3-8 weeks (depending on food quality and temperature) grow to be about 100-300 mg in weight. During this interval the larvae appear white-yellow-cream in color. The larvae feed on organic-rich biodegradable materials including compost, garbage, manure, animal carcasses, sewage debris, leachates produced during the fermentation of fruit and vegetables, etc. The voracious appetite and the rapid growth of the larvae make them ideal for fast processing of organic debris. During the last stage (instar) the larvae become brown-black and then ashen as they enter a pre-pupa stage at which point they stop feeding and begin exiting from the decaying matter.

Pupae are in an immobile stage. To pupate the larvae crawl completely away from food and hide in a dark place where they metamorphose into adults. Metamorphosis takes a couple of weeks to months (depending on temperature). Adults emerge and start the cycle again.