



Bug of the week

The **black soldier fly** (*Hermetia illucens*) originated in Central America, the Caribbean, and South America, but has since dispersed and is now a common and widespread fly.

The adults of the soldier fly are 16 mm long and have a largely black body, with metallic reflections ranging from blue to green on the thorax. Its head is wide, with very large patterned eyes and flattened, black antennae that are about twice the length of the head. The legs are black with whitish tips.



Black soldier fly adult



Black soldier fly larvae

The black soldier fly exhibits mimicry. Mimicry is where one living thing resembles another giving it an advantage, such as camouflage or protection from predators. The black soldier fly mimics mud dauber wasps, due to its similar size, color, and appearance. The soldier fly has two small, transparent "windows" in the basal abdominal segments that make the fly appear to have a narrow wasp-like waist.

Adult female lay approximately 200-600 eggs at a time. The eggs are usually deposited in crevices or on surfaces above or adjacent to decaying matter such as manure or compost, and hatch in about 4 days. Hatched larvae grow from 1mm to 25mm long. Larvae feed on a wide variety of organic matter for 18 to 36 days. The pupae stage lasts from 1 to 2 weeks, while adults survive for about 8 to 10 days in the wild, however this can be increased up to 73 days in captivity if provided with water and sugar or nectar as food.

Since the late 20th century the black soldier fly has been increasingly gaining attention because of its usefulness in recycling organic waste and generating animal feed.

The larvae and adults are not pests but play an important beneficial role (similar to that of earthworms) as essential decomposers in breaking down organic substrates and returning nutrients to the soil. The larvae have voracious appetites and can be used for composting household food scraps and agricultural waste products.

Additionally, black soldier fly larvae are an alternative source of protein for aquaculture, animal feed, and pet food. Black soldier fly larvae and pupae are harvested and used as feed for poultry, fish, pigs, lizards, turtles, and even dogs. The black soldier fly larvae is one of the few insect species approved to be used as feed in aquaculture in the EU and are among the most efficient animals at converting biomass into feed.

Given the usefulness of this soldier fly species to us, we should be seriously considering it as an environmentally sustainable method of organic waste disposal and as potential food source for poultry and pigs in the Cook Islands.

