

# Effect of Type of Leaf Waste in Rearing Media on Survival Rate and Long Period of BSF (*Hermetia illucens*) Larvae, and C/N Ratio of Decomposed Media

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## ABSTRACT

The premetamorphic phase of the Black Soldiers Fly (BSF = *Hermetia illucens*) larvae was relatively clean, does not like smelly media and tends to be in moist to moderately dry conditions. The BSF life cycle could bring more advantages than disadvantages. Various problems related to the ability of BSF larvae to decompose organic waste, it seems necessary to conduct research to determine their activity in decomposing leaf waste, which could further describe their survival rate in media added to several types of leaves, the length of the larval period and the C/N ratio of the decomposed media.

Four (4) types of leaf waste that were be tried, namely categories A, B, C, D. Meanwhile E as a control in the form of basic feed. A (*Ficus* sp. leaf waste - FF), B (*Passiflora edulis* leaf waste - FM), C (*Dimocarpus longan* leaf waste - FK), D (*Polyalthia longifolia* leaf waste - FG). Treatment with a certain ratio of media and basic feed. Basic feed in the form of good quality fermented rice bran. All maintenance was carried out protected in BSF cages with a size of 2 X 0.6 X 2 meters. Parameters observed were: 1). The survival ability of BSF larvae; 2). Long larval period in each treatment, and 3). The C/N ratio of the media at the end of the decomposed maintenance. Data analysis used a Completely Randomized Design with a Nested Design on 2 independent variables. If the results were significant at the level of  $\leq 5\%$ , a further test was carried out with the Duncan Multiple Range Test (DMRT). Data that were not normally distributed were analyzed using the Kruskal Wallis Test.

The results showed that the survival of BSF larvae in the type of leaf waste obtained the highest rate in the type of Ketapang leaf (FF) of 35.47%, while the highest rate was obtained 40.16% in the treatment of the type of leaf / basic feed ratio of 50:50%. The treatment of adding basic feed with Longan (*Dimocarpus longan*) - (FK) leaf waste with a composition of 80:20% had a shorter larval period compared to other treatments. In general, the results showed that the type of leaf waste treatment and the ratio of the type of leaf waste / basic feed given, showed a tendency to differ in the length of the larval period. The C/N ratio at the end of the study for the *Polyalthia longifolia* - FG leaf type was 19.34%, the highest among other leaf types. The lowest number was for the type of *Ficus* sp. – FF leaf of 12.40%. The composition of leaf species / basic feed ratio did not have a significant effect, and ranged from 17.03 – 17.38%. This figure was higher than the total average (16.01%).

Kata Kunci: *Leaf types, larvae, BSF, survival rate, C/N ratio*