

Optimization of Hydrolytic Enzyme Production from Tempeh Starter to Increase In Vitro Pepsin Digestibility of Black Soldier Fly Maggot

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| Title | Optimization of Hydrolytic Enzyme Production from Tempeh Starter to Increase In Vitro Pepsin Digestibility of Black Soldier Fly Maggot |
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| Abstract | <p>This research aims to evaluate the optimal level and incubation time for the production of hydrolytic enzymes from tempeh starter (TS), in order to increase the in vitro pepsin digestibility of Black Soldier Fly (BSF), <i>Hermetia illucens</i>, maggot flour. The materials used were commercial tempeh starter, pepsin, and 15 days of age dried BSF maggot. In this study, two experiments were conducted. In a factorial completely randomized design, the analysis of variance (ANOVA) was performed to assess the significance of treatment effects, and orthogonal polynomial contrasts were employed to identify specific linear and quadratic trends among the group means. In experiment 1, research was carried out to determine the optimal starter level and incubation time to produce hydrolytic enzymes from tempeh starter. In experiment 2, crude enzyme from the best treatment in the first stage was used to increase the pepsin digestibility of BSF maggot flour. The optimal protein content and enzyme activities of tempeh starter was 0.10-0.13% starter with an incubation time of 2.00-3.47 days. Meanwhile, the optimal pepsin digestibility of BSF maggot flour was 1.51% enzymes with a hydrolysis time of 23.87 hours. This analysis measurement of protein content and enzymatic activity of tempeh starter and in vitro digestibility of BSF flour represent the preliminary methodology used to initially select hydrolyzed BSF flour to be a source of protein in animal feed.</p> |
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