

研究论文

饲料种类和饲养密度对黄粉虫幼虫生长发育的影响

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摘要 室内研究了饲料种类、饲养密度对黄粉虫幼虫生长速度、死亡率、化蛹率和虫体营养成分的影响。结果表明: (1) 黄粉虫幼虫平均每头增重大小顺序为: C组(麦麸+菜叶)>B组(麦麸)>A组(白菜叶)>D组(饥饿), 密度1~4头/cm²的黄粉虫幼虫平均每头增重幅度大于6~8头/cm²的处理组。(2) 黄粉虫幼虫总死亡率的大小顺序分别为: A组、C组>D组>B组, 8头/cm²>2~6头/cm²>1头/cm²; 自然死亡率的大小顺序分别为: B组、C组>A组>D组, 8头/cm²>1~6头/cm²; 自相残杀死亡率的大小顺序分别为: A组、C组、D组>B组, 8头/cm²>4~6头/cm²>1~2头/cm²; 自相残杀死亡率占总死亡率比例的大小顺序分别为: D组>A组、C组>B组, 4~8头/cm²>2头/cm²>1头/cm²。(3) 黄粉虫幼虫化蛹率的大小顺序分别为: C组>A、B、D组, 1~2头/cm²>4头/cm²>6~8头/cm²。(4) 黄粉虫幼虫干物质含量的大小顺序分别为: B组>C组>D组>A组, 8头/cm²>6头/cm²>1头/cm²、4头/cm²>2头/cm²; 不同饲料条件下虫体中氮、磷含量的大小顺序为: D组、A组>B组、C组; 饲养密度对黄粉虫幼虫氮、磷含量均没有明显的影响。(5) 在生产中, 饲料以精饲料和青饲料合理搭配为宜, 如果考虑化蛹繁殖, 密度以2头/cm²为宜; 如果不考虑化蛹繁殖, 则黄粉虫幼虫密度可以提高到4头/cm²。

关键词 [黄粉虫幼虫](#); [生长速度](#); [自相残杀死亡率](#); [化蛹率](#); [营养成分](#)

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Effect of different fodders and breeding densities on the larva growth and development of *Tenebrio molitor* L.

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Abstract

This paper focused on the larva growth rate, mortality, pupation rate, nutritional component of *Tenebrio molitor* L. at different fodders and breeding densities. They were evaluated in laboratory by the test of two factors (fodder and density) and multi-levels. The results showed that: (1)The order of average body weight increase in mg/per larva of *Tenebrio molitor* respectively was: Group C(wheat bran+Cabbage)> Group B(wheat bran)> Group A(Chinese cabbage)> Group D(Starvation), 1~4 larva/cm²>6~8 larva/cm². (2)The order of total larval mortality respectively was: Group A, Group C> Group D> Group B, 8 larva/cm²> 2~6 larva/cm²> 1 larva/cm²;The order of natural mortality respectively was: Group B, Group C>Group A> Group D, 8 larva/cm²>1~6 larva/cm²; The order of cannibalism mortality respectively was: Group A, Group C, Group D>Group B, 8 larva/cm²>4~6 larva/cm²>1~2 larva/cm²; The order of the proportion of cannibalism mortality to total mortality respectively was: Group D>Group A, Group C>Group B, 4~8 larva/cm²>2 larva/cm²>1 larva/cm². (3)The order of larva pupation rate of *Tenebrio molitor* respectively was: Group C>Group A, Group B, Group D, 1~2 larva/cm²>4 larva/cm²>6~8 larva/cm². (4) The order of larva dry matter content of *Tenebrio molitor* respectively was: Group B>Group C>Group D>Group A, 8 larva/cm²>6 larva/cm²>1,4 larva/cm²>21

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larva/cm²; Larva nitrogen (crude protein) content and phosphorus content of *Tenebrio molitor* were not affected by breeding densities while affected by fodders from high to low: Group A, Group D>Group B, Group C. (5)It was appropriate to feed larva under the reasonable proportion of concentrated feed to succulence, and to culture larva at 2 larva/cm² if pupation and propagation were considered while at 4 larva/cm² if pupation and propagation were not considered in practice.

Key words *Tenebrio molitor* L. _ growth rate _ cannibalism _ mortality _ pupation rate _ nutritional component

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