核农学报 2011, 25(2) 298-301 DOI: ISSN: 1000-8551 CN: 11-2265/S

论文

辐照对青杨虎天牛幼虫和蛹发育的研究初报

中国检验检疫科学研究院，北京100029； 清华同方威视技术股份有限公司，北京100084

摘要：

用9MeV高能X射线辐照处理青杨虎天牛的老熟幼虫和蛹，测定其化蛹率、羽化率并观察蛹、成虫及卵的发育。结果表明：100%阻止老熟幼虫化蛹和羽化的最低吸收剂量分别为60Gy和50Gy；应用机率值分析，推算出辐照导致幼虫死亡率达到99.9968%的最低吸收剂量为72.3Gy，95%置信区间为64.4~89.1Gy；2~3日龄的蛹经100Gy辐照后未能完全死亡，但80Gy辐照后羽化的成虫不育。

关键词： 青杨虎天牛 X射线辐照

EFFECT OF 9MeV XRAYS IRRADIATION ON DEVELOPMENT OF Xylotrechus rusticus (Coleoptera: Cerambycidae)

Chinese Academy of Inspection and Quarantine, Beijing100029;NUCTECH Company Limited, Beijing100084

Abstract:

Mature larvae and pupae of grey tiger longihorn beetle (Xylotrechus rusticus Pinnaens) were irradiated by 9MeV X-rays. Pupation rate, emergence rate were measured and the development of pupae, adults and eggs were also observed. The results showed that there were no adults and pupae developed while the mature larvae were irradiated at the dose of 50Gy and 60Gy, respectively. The result of probit analysis indicated that the estimated dose for 99.9968% mortality of mature larvae was 72.3Gy and its 95% confidence interval was 64.4~89.1Gy. 2~3 day pupae did not totally dead after irradiated at the dose of 100Gy, while its sterile dose was less than 80Gy.

Keywords: Xylotrechus rusticus X-rays irradiation

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

整车进境原木检疫辐照处理技术研究（2002IK 017），入侵物种口岸除害处理新技术（2006BAD08A16）

通讯作者: 詹国平（1965-），男，四川中江人，研究员，研究方向为检疫除害处理技术。Tel：010-64931034

作者简介: 王跃进（1960-），男，重庆云阳人，研究员，研究方向为检疫除害处理技术与装备。Tel：010-64934647;E-mail：wangyuejin@263.net.cn
作者Email: zhanguoping@gmail.com

参考文献：

本刊中的类似文章