

## 二疣犀甲室内生物学特性及形态观察

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### Biological and morphological observations on *Oryctes rhinoceros* (Coleoptera: Dynastidae) in the laboratory

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**摘要** 【目的】对二疣犀甲 *Oryctes rhinoceros* 室内生物学特性及形态进行系统观察。【方法】在室内一定条件下(温度26±1℃, RH 75%~95%, 光周期10L:14D)以牛粪和锯末混合物(4:1, m/m)饲养二疣犀甲各虫态, 每6 h观察记录各虫态的形态学特征及其发育情况, 并测量各虫态的重要发育指标, 如体长、体宽、体重等。【结果】二疣犀甲属于全变态昆虫, 一生经历4个虫态, 分别为卵、幼虫、蛹和成虫。二疣犀甲卵的发育历期平均为8.88 d, 整个幼虫期平均需156.82 d, 预蛹和蛹的平均发育历期分别为9.45 d和33.75 d, 二疣犀甲完成一个世代需要326~455 d。1龄幼虫体长为4.16 mm, 体重0.64 g, 之后随龄期迅速增加, 至3龄时, 体长为65.66 mm, 体重增加到12.14 g。蛹期平均体长为51.62 mm, 体重为9.72 g。早期羽化的成虫个体较晚期羽化的大, 表现为体长、体宽、角长及体重存在显著差异( $P \leq 0.05$ )。二疣犀甲成虫具有雌雄二型现象, 子代性比(雌:雄)为1.23:1。【结论】二疣犀甲 *O. rhinoceros* 是椰子等棕榈科植物的重要害虫, 基础生物学和形态学研究是防控技术研究的基础, 本研究结果可为生产上防治该虫提供理论依据。

**关键词:** 二疣犀甲 形态学 生物学特性 发育历期 雌雄二型 性比

**Abstract:** 【Aim】To observe systematically the biological and morphological characteristics of *Oryctes rhinoceros* in the laboratory. 【Methods】The morphological characteristics and development process of *O. rhinoceros* fed by the mixture of cow dung and dust (4:1, m/m) under the laboratory conditions of 26±1℃, RH 75%-95%, and photoperiod 10L:14D were recorded every 6 hours. and the body length, body width and body weight at different developmental stages were measured. 【Results】*O. rhinoceros* is an insect that undergoes complete metamorphosis, and has four developmental stages in the whole life, i.e., egg, larva, pupa and adult. The average egg period, the whole larval period, the pre-pupal and pupal periods of *O. rhinoceros* were 8.88, 156.82, 9.45, and 33.75 d, respectively, and the generation period was 326 to 455 d. The body length and weight of the 1st instar larvae were 4.16 mm and 0.64 g, those of the 3rd instar larvae were 65.66 mm and 12.14 g, and those of pupae were 51.62 mm and 9.72 g, respectively. Adults emerged at the early stage were larger in body size than those emerged at the late stage. The significant difference was manifested ( $P \leq 0.05$ ) in morphological characteristics, such as body length, body width, horn length and weight of adults at different emergence time. *O. rhinoceros* adults showed sexual dimorphism, and the sex ratio (female to male) of the offsprings was 1.23:1. 【Conclusion】*O. rhinoceros* is an important pest of coconut palm plants, and its biological and morphological studies are the basis of selecting pest prevention and control technologies. The results of this study may provide a theoretical foundation for *O. rhinoceros* control.

**Key words:** *Oryctes rhinoceros* morphology biological characteristics developmental duration sexual dimorphism sex ratio

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#### 引用本文:

钟宝珠, 吕朝军, 王东明等. 二疣犀甲室内生物学特性及形态观察[J]. 昆虫学报, 2013, 56(2): 167-172.

ZHONG Bao-Zhu, Lü Chao-Jun, Wang-Dong-Ming et al. Biological and morphological observations on *Oryctes rhinoceros* (Coleoptera: Dynastidae) in the laboratory[J]. ACTA ENTOMOLOGICA SINICA, 2013, 56(2): 167-172.

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