

亚洲玉米螟体重和体型的地理变异

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Geographic variation in body weight and size of the Asian corn borer, *Ostrinia furnacalis* Guenée (Lepidoptera: Pyralidae)

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摘要

为探明亚洲玉米螟 *Ostrinia furnacalis* 体重和体型地理变异, 我们详细比较了来自4个不同地理种群(海南乐东 18.8°N, 109.2°E), 广西阳朔 24.8°N, 110.5°E), 江西南昌 28.8°N, 115.9°E) 和河北廊坊 39.5°N, 116.7°E) 亚洲玉米螟的体重、体型大小及其与采集地纬度的关系。结果表明: 不同地理种群的亚洲玉米螟卵重随纬度的升高而逐渐增大, 符合贝格曼法则(Bergmann's law), 而雌雄蛹重及成虫体长、后足腿节长和前翅长均随纬度的升高而逐渐减小, 符合反贝格曼法则(Converse Bergmann's law)。雌虫的前翅显著长于雄虫, 其性体型二型性符合任希法则(Rensch's rule), 即在雌虫体型较大的种群中, 雄虫前翅比雌虫前翅增长幅度相对较大。本文结果进一步揭示了即使在同一种类昆虫中, 其各个虫态体重和体型的地理变异也可能不同。

关键词:

Abstract: To understand geographic variation in body weight and body size in the Asian corn borer, *Ostrinia furnacalis* Guenée, we compared the body weight and body size of the Asian corn borer, *O. furnacalis* from four different latitudes: Ledong, Hainan (18.8°N, 109.2°E); Yangshuo, Guangxi (24.8°N, 110.5°E); Nanchang, Jiangxi (28.8°N, 115.9°E); Langfang, Hebei (39.5°N, 116.7°E). And then the relationship between body weight, body size and latitude was analyzed. The results indicated that egg weight of the Asian corn borer gradually increased with an increase in latitude that followed Bergmann's law, whereas the pupal weight, body length, hind femur length and fore wing length for both female and male gradually decreased with an increase in latitude that followed Converse Bergmann's law. Fore wing length of the female is significantly longer than that of the male in the four geographic populations and the sexual size dimorphism followed the Rensch's rule, with the increment of the fore wing length of males relatively larger compared to that of females in populations with large body size. These results further suggest that the geographic variation in body weight and size may be different in different stage in the same species of insects

Key words:

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