**In vitro** rearing of brinjal shoot and fruit borer, *Leucinodes orbonalis* (Guenée) (Lepidoptera: Crambidae) on artificial diet

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**ABSTRACT:** The brinjal shoot and fruit borer (BSFB), *Leucinodes orbonalis* (Guenée) (Lepidoptera: Crambidae) is a key pest of brinjal. Studies were carried out on the development of its **in vitro** rearing on artificial diet on a large scale. An artificial diet without natural ingredients of brinjal is found to support the growth and development as good as or better than natural brinjal fruits. The BSFB takes 26.25 days to complete life cycle on artificial diet as compared to 25.42 days on natural brinjal fruits (var. Pusa Kranti). On the contrary, other traits viz., 13 day old larval weight, 2 day old pupal weight, % pupation, % adult emergence, adult longevity and fecundity of the BSFB on artificial diet are either better or is at par with those on the natural brinjal fruits. The artificial diet has a shelf life of 75 days at 4°C. Thus, the artificial diet is useful for quality and economic production of insects under aseptic conditions on the basis of rearing at 27°C, 60-75% rh and 13 hr photophase for more than 56 generations without fortification with field populations. The prospects of this method being useful for studies on various aspects of BSFB management including insect resistance management in insect protective transgenic brinjal are discussed. © 2016 Association for Advancement of Entomology

**KEYWORDS:** Brinjal, *Leucinodes orbonalis*, artificial diet, rearing.

**INTRODUCTION**

Brinjal (*Solanum melongena* L.), also called aubergine or egg plant, is an important vegetable crop grown in India and many other parts of the world. It is tasty and nutritious vegetable rich in minerals (Choudhary and Gaur, 2009). India is the second leading producer of brinjal crop in the world after China with an annual production of 12.2 million tons from about 7,00,000 ha (FAO, 2012, 2013). Brinjal has a wide spectrum of insect pests (Srinivasan, 2009). The brinjal shoot and fruit borer (BSFB), *Leucinodes orbonalis* (Guenée) (Lepidoptera: Crambidae) is the key pest that causes heavy damage throughout the crop life (Atwal, 1976). The pest is primarily monophagous in nature, but sometimes has been reported on some other crops (Dhankar, 1988; Srinivasan, 2009; Onekutu et al., 2013). The infestation starts from the seedling stage till the final harvest. Within few hour of the egg hatching, BSFB larvae bore into and feed on the tender shoots and the fruits of the brinjal plant. It damages the young shoots, reducing plant growth thereby adversely affecting productivity. The boring nature of BSFB, with a barely visible sign during early infestation is the