

A Review

THE ASIAN JOURNAL OF HORTICULTURE

Vol. 6 | Issue 2 | December, 2011 | 510-517



Article history:

Received : 29.08.2011

Revised : 05.10.2011

Accepted : 26.11.2011

Genetic studies in brinjal (*Solanum melongena* L.) for resistance to shoot and fruit borer

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Key words : Brinjal, Shoot and Fruit borer, Resistant

How to cite this article : Shinde, K.G., Warade, S.D., Kadam, J.H. and Shisode, N.T. (2011). Genetic studies in brinjal (*Solanum melongena* L.) for resistance to shoot and fruit borer, *Asian J. Hort.*, 6 (2) : 510-517.

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Brinjal or eggplant (*Solanum melongena* L.) is native of India and extensively grown in all South East Asian countries. It is highly productive and usually finds like place as poor man's vegetable. It is popular vegetable crop cultivated throughout the warmer regions of the world. Several biotic and abiotic factors contribute to losses in production of brinjal. Among the biotic stress factors that hamper the production of brinjal, the shoot and fruit borer (*Leucinodes orbonalis* Guen) is the most serious one which occurs throughout the year at all the stages of the crop growth. The loss caused by this deleterious pest was reported to be around 30-70 per cent by various workers. Management of this pest by use of chemicals may reduce the pest attack to a greater extent, but it causes adverse effects on environment and human health. The productivity of brinjal in India is low 16.9 t/ha as compared to other countries. The main reason for high yield in other countries is utilization of F₁ hybrids. The hybrid vigour will be the highest in F₁ hybrids which serve as a means to increase yield. Combining high yield and resistance/tolerance to shoot and fruit borer would be a welcome feature. Before initiating any breeding programme, one must have

enough information about the ways and means by which the resistance can be exploited. Although many scientists have reported screening of various germplasm of brinjal for resistance to shoot and fruit borer along with the physical and chemical characters responsible to borer attack; meagre work has been done to understand the inheritance of the same. Review of published research work is confined only to specific aspects and they are discussed under following sub-headings.

- Nature of damage
- Sources of resistance
- Physical and chemical characters for resistance
- Genetics of various characters

Nature of damage :

The damage caused by shoot and fruit borer (*Leucinodes orbonalis* L.) in brinjal starts soon after the transplanting and continues till harvest of the immature but edible fruits. The life cycle of this pest is 19-28 days. The eggs are laid singly on ventral surface of leaves, on flower buds and occasionally on young fruits. In young plants, the caterpillars bore into petioles, midrib of leaves, young shoots and feed within, as a result, the affected leaves dry