

located by foraging IJs. Thus, at a given inoculation dose, more IJs get established in the larger III instar grub. The lethal infection by *S. glaseri* occurred earlier in young grubs. The LT_{50} values for III instar grub were almost double then those recorded for I instar grubs.

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ANTIBIOSIS EFFECT OF PHENOLIC ACIDS (FERULIC ACID AND P-COUMARIC ACID) ON MAIZE SPOTTED STEM BORER, *CHILO PARTELLUS* (SWINHAE) (LEPIDOPTERA: PYRALIDAE)

Phenolics are an extensive group of plant substances and possess wide range of functions, like structural support, pigmentation, signalling and defence against environmental and biotic stresses (Dixon and Paiva, 1995; Douglas, 1996). These have been regarded as one of the important defences against insects in various studies (Berbehenn and Martin, 1994; Berbehenn *et al.*, 1996; Henn, 1997). In grasses, hydroxycinnamic acids, *p*-coumaric and ferulic acid, are ester and/or ether linked to cell-wall polymers (Ralph *et al.*, 1992, 1994). These cell wall hydroxycinnamic acids in assorted tissues (kernel, leaf, pith, rind, and nodes) are related to resistance to borers including the European corn borer, the Mediterranean corn borer (Santiago *et al.*, 2006, 2008), Southwestern corn borer and sugarcane borer (Ramputh, 2002). Effect of phenolics on lepidopteran insects were elucidated by diet incorporated bioassays in various

studies on *Sesamia nonagrioides* (Santiago *et al.*, 2006) and *Ostrinia nubilalis* (Warnock *et al.*, 2001; Binder *et al.*, 1999). The current study was conducted to elucidate the effect of the phenolic acids, *p*-coumaric acid and ferulic acid on growth and development of maize spotted stem borer, *C. partellus* (Lepidopteran Pyralidae) through diet incorporation bioassay.

The two phenolic acids, i.e. ferulic acid and *p*-coumaric acid, used in the study are from the pure compounds (> 98% purity) as purchased from Merck Frankfurter Str. Darmstadt, Germany. The nucleus culture of *C. partellus* collected from the field of Directorate of Maize Research (DMR), IARI, New Delhi, was maintained in the Entomology Laboratory, DMR under the controlled rearing environment at a temperature of 26 ± 1 °C and relative humidity of $65 \pm 5\%$ and used. The field collected larvae were reared on fresh maize stalk till pupation. Further