

Expression of Insect Resistance in *in vitro*-Derived Callus Tissue Infested with Lepidopteran Larvae

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Summary

Plant-insect relations were studied by rearing larvae of herbivorous lepidopteran insects on tissue culture-derived callus. The callus was generated from cotton (*Gossypium hirsutum*) and tomato (*Lycopersicon esculentum*, *L. chmielewskii* and *L. hirsutum*) genotypes previously identified as differing in their insect field resistance. Calli were infested with newly hatched neonate larvae of *Helicoverpa armigera*, *Spodoptera littoralis*, *Earias insulana* and *Phthorimaea operculella*. Growth retardation of larvae and larval mortality were observed among insects fed with calli of resistant hosts. The response of the insects was very much dependent on exposure of the callus to light during its formation, and on the plant growth regulator composition of the callus growth medium. Our results indicate that factors imparting resistance in tissue of intact plants were also likely to be present in callus.

Key words: *Gossypium hirsutum*, *Lycopersicon spp.*, *Earias insulana*, *Helicoverpa armigera*, *Phthorimaea operculella*, *Spodoptera littoralis*, plant tissue culture, plant-insect interaction.