

## Development of transgenic chickpea plant harboring Proteinase inhibitor gene

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Chickpea is one of the ten economically important grain legumes which represents valuable source of protein. There are many factors responsible for low yield, among which insect pests appear to be the most vital. Chickpea is attacked by more than 36 species of insect pests in India. Among these pests, the pod borer *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) is the most serious one (Zahid et al., 2008). *H. armigera* is a cosmopolitan, multivoltine and agronomically important pest. Population survival and persistence on more than 300 plant species worldwide is a consequence of its polyphagy, high mobility, fecundity, fertility and facultative diapause (Rajapakse and Walter, 2007). *H. armigera* causes more than 50% yield losses (up to 90%) in various crop plants including cash crops like cotton and sunflower, pulses, ornamentals and cereals.

To control this highly polyphagous herbivore, expensive and hazardous synthetic pesticides are predominantly being used till date. However, large scale pesticide application has caused deleterious effects to the human health and environment. Also no resistant varieties are available for chickpea against this pest. There is need to develop a transgenic chickpea plant harbouring insecticidal gene against *H. armigera*. New approaches such as genetic engineering and molecular breeding have been encouraged (Ignacimuthu and Prakash, 2006 and references therein). Efficacy of insecticidal protein (Bt toxin), protein antimetabolites such as enzyme inhibitors [proteinase inhibitors (PI) have been known (Gatehouse 2008). We therefore, plan to develop a transgenic chickpea plant harbouring proteinase inhibitor gene against *H. armigera*.

### Biography

Priya Janardan Sarate has completed her M.Sc in Microbiology from Shivaji University Kolhapur. From last three and half year she is working in National Chemical Laboratory, as project assistant III under Dr Ashok P. Giri. She has published one paper in JIP in 2009, while one more is communicated (upto 100 words).