



National Award – Second

Tractor Powered Sprayer

**Gurmeet Singh Bhupal
Hanumangarh, Rajasthan**

Gurmeet (45) is a fanner and a fabricator. He dropped out of school after class 3rd to help his family in farming. His interest in machine fabrication led him to mechanize various processes for crop cultivation in his farm.

The general practice in cotton farms is that the labours have to hold the spray boom of the tractor mounted sprayers for spraying pesticides. This makes spraying slow and tiring for the labourers. Gurmeet conceptualized a drawing of sprayer using a four bar mechanism so that more area could be covered and successfully developed a prototype in 2016.

He developed a tractor mounted PTO powered machine to spray over crops of small height (mainly cotton). The sprayer has two semi-revolving guns, which continuously spray liquid with an automatic semi-circular movement using four bar mechanism and two independent hydraulic controllable arms. Its working width is 23m, spraying height is 2.1m, coverage area is 5 ha/h and fuel consumption is 2 lit/h at a working speed of 2-3 km/h. The manufacturing of the present model costs about Rs. 60,000/-.

