



## CONSOLATION

Tractor operated blowing orchard sprayer

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**R**ajendra Jadhav (56), a fabricator, realised while discussing with farmers that the sprayers used by them do not perform efficiently and most of the liquid pesticide gets dispersed into the air and thus wasted. This triggered him to develop a device, which can overcome this problem and work efficiently with proper spraying of pesticide on the plants.

His father was also a fabricator and had a workshop at a rented place where he worked with both his sons, Rajendra and his brother. Due to the poor financial conditions both brothers had to join their father early in the fabrication workshop after discontinuing their studies, where they did repairing and fabrication work of steel. With time the number of orders

increased, they expanded their workshop and also started the repairing work of agricultural water pumps along with domestic fabrication work like grills, iron roof, shade etc. In 1985, he started his own shop, Raju Engineering Works, where he started repairing of agricultural machineries and tractor. He now lives with his wife and two sons and their families. Both his sons joined him in his workshop after their graduation. Later, with increasing demand in the market for agricultural machineries, he started manufacturing agricultural equipment like mould board plough, cultivator, disc plough, etc. In 2001, he started another workshop named C. K. Enterprises where they started undertaking manufacturing of agricultural equipment.



### Genesis

In 2000, while interacting with farmers in Satana and nearby areas, Rajendra came to know that the sprayers used by them do not perform efficiently and most of the liquid pesticide gets dispersed into the air and thus wasted. This triggered him to develop a tractor mounted sprayer, which can overcome this problem and work efficiently with proper spraying of pesticide on the plants. He modified an earlier version of sprayer by making it tractor pulled type sprayer with 600 l storage capacity and eight nozzles. About seven units of the same were sold to farmers at a cost of Rs. 40,000 to 50,000. Later, while sprayer was used, issues related to efficiency and rusting came up, which led him to further work on the sprayer. They then modified the sprayer by using steel body of blower (instead of aluminium earlier) and by increasing the size of the air duct.

### The orchard sprayer

This is a blowing sprayer, which can be used in orchard crops with a tractor of 18hp and higher. There are two radial fans mounted on both the sides to ensure effective spraying of pesticides on the orchard crops. It also has

provision of rotating blower (fan) along with nozzles to spray pesticides in all directions.

The sprayer has been modified so as to spray pesticides effectively in orchards with less consumption of fuel and also less wastage of liquid containing pesticides. The pesticides are mixed inside the tank as per the requirement of crop and its age. A mixing chamber has been provided so that fine particles of pesticide get suspended in the carrying fluid due to the creation of high pressure inside the tank. The radial fans rotate in opposite directions to generate high air pressure. The pesticide gets blown out up to 10-12 feet. The sprayer takes power from tractor through PTO shaft by a V-belt which is directly connected to the gear box.

The sprayer can be used for spraying pesticides in crops like grapes, mango, sapota, pomegranate, etc. The sprayer requires 100-125 ltr of liquid containing pesticides for one acre land. Rajendra has sold twenty two units of this sprayer to farmers at a cost of Rs. 1,35,000 to 2,00,000 depending on the customers requirement.