

ICAR-CIAE Induction based air assisted electrostatic sprayer

Utility

Air assisted electrostatic sprayer is used to spray pesticides on crops and orchards. It reduces pesticide use and pollution while increasing efficiency and bio-efficacy. The developed air-assisted nozzle has a flow rate of 120 ml/min and high voltage DC to DC charging system to charge the electrode up to 10kV. The electrostatic system consists of base frame, petrol engine (1HP), air compressor, spray tank, air filter, air moisture separator and spray gun with electrostatic nozzle. The spray lance can operate up to a distance of 10 m. The performance of electrostatic sprayer has been optimized at 1.0 km/h forward speed and 0.55 m height of application. The electrostatic sprayer has 85% bio-efficacy on cotton aphids and 92% bio-efficacy on jassids for LN90 dosages of 0.15 ml/l. The developed system can save 75% fuel, 30% pesticide per acre and costs 20% less per acre.



Specification and working features

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|-------------------|---|------------|
| Field capacity | : | 0.084 ha/h |
| Field efficiency | : | 0.084 ha/h |
| cost of operation | : | 1455 ₹ /ha |
| BEP | : | 57 h |

Design: ICAR-CIAE, Bhopal

Commercialization Status: Ready for Commercialization

Proposed stakeholders: Orchards and Cotton growers, Custom hiring operators and manufacturers

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