

Field evaluation of tractor operated boom sprayer of cotton crop

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■ **ABSTRACT** : India is second largest producer of cotton in the world though the yield is only 440 kg/ha as against the world average of 667 kg/ha, due to poor control of insect pest and dry land farming conditions. During pesticide application most of the pesticide is lost through drift. A major reason for such a pesticide loss is insufficient nozzle pressure, nozzle discharge, nozzle height etc. Hence, it is necessary to determine the optimum discharge rate and pressure so as to reduce the pesticide losses from the sprayer. Therefore, the hydraulic boom sprayer was tested in the field for cotton crop to study effect of nozzle discharge rates (*viz.*, 0.45, 0.70, 0.90 and 1.35 l/min) and nozzle pressures (*viz.*, 275.8, 413.7, 551.6 and 689.5 KPa) for spray uniformity. From the study it was found that nozzle discharge rate of 0.90 l/min and nozzle pressure of 689.5 KPa produced more uniform spray with droplet size of 125.55 to 287.50 μm , droplet density of 18 to 30 drops/ cm^2 and uniformity coefficient of 0.96 to 1.20.

■ **KEY WORDS** : Boom sprayer, Nozzle discharge rate, Nozzle pressure, Spray deposition

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