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RESEARCH ARTICLE

Testing of the pneumatic planter with okra seed under laboratory conditions

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SUMMARY

Seeding of costly vegetable, oil and pulse seeds are highly expensive and labour consuming. In order to get optimum plant stand and damage free precise seeding, the concept of pneumatic planting was developed at various places but could not well adopted by the farmers. It may be due to lack of knowledge about machine adjustment for different seeds and desired seed rates. Various pneumatic planting machines are procured for demonstration and on farm testing at various Agricultural /Government's farms and University farms but not being properly utilized. Therefore, a detailed study was planned for different machine parameters and speed of tractor on the performance of pneumatic planter. Planting of okra and other vegetables crops where row to row as well as plant to plant distance is essential for the seed saving and better crop production. The seeds are sown in line at desired depth with two seeds per hill maintaining the desired spacing between row and plants. In pneumatic planter seed sowing produced more consistent row to row distribution of seeds and a numerical reduction in plant stand variability. Pneumatic planting seed metering concept is based on the suction pressure developed in the seed metering system. The laboratory study on the suction pressure in the pneumatic disc for holding okra seed under positive pressure over the seed metering orifices were carried out. The performance of pneumatic precision planter for okra crop was evaluated on the basis of laboratory conditions. Average weight (50.62 g) of okra seed obtained in third gear of main shaft of first combination of gears was nearly equal to the weight obtained by calibration 50.20 g in 20 revolutions of ground wheel. So, the III gear of main shaft of first combination of gears is most suitable for sowing of okra crop. Precise planting of okra seed by pneumatic planter is feasible. In lab test pneumatic planter for okra seed were found suitable with 4 mm disc hole diameter at 750 rpm engine speed.

Key Words : Testing, Pneumatic planter, Laboratory condition

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