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A study on line sowing of black gram seeds by a low cost manually operated cup feed metering seed drill

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ABSTRACT : A low cost and manually operated multi crop seed drill with suitable dimensions of cup in cup feed metering mechanism for a particular crop has been developed and evaluated in the field condition to study its seed pattern characteristics and economic viability for small and marginal farmers in the state of Odisha. The seed drill developed was evaluated with the prevailing black gram variety 'PU-30' in the Central farm OUAT, Bhubaneswar in the year 2008 with the objectives of optimizing the dimensions of cup for black gram sowing, studying the seed pattern characteristics like seed rate deviation, seed distribution and seed damage, performance evaluation and finally its economics of use. From the experiments it was found that the dimensions of the cup *i.e.* 6 mm x 2.89 mm was found to be best and was used successfully up to a peripheral speed of 18.84 m/min. considering seed rate deviation, seed distribution and seed damage for sowing of black gram. The actual field capacity of the seed drill was 0.063 ha/h with a field efficiency of 78.75 per cent and there was a net savings of Rs. 1780.00 per hectare for black gram in comparison to the local traditional practice. This seed drill costing of Rs. 1850 and total operating cost of Rs. 13.85 per hour may solve the problem of line sowing of seeds particularly for the small and marginal farmers of Odisha to enhance production and productivity as a whole.

KEY WORDS : Farm mechanization, Seed drill, Cup feed metering mechanism, Blackgram sowing

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