

PERFORMANCE EVALUATION OF VACUUM TYPE METERING MECHANISM UNDER LABORATORY AND FIELD CONDITION FOR BOLD SEEDS**Priya Sinha, Ajay Verma, V.M. Victor, Jitendra Sinha and Amit Sinha****IGKV, Raipur (C.G.)**Received-11.05.2017, Revised-22.05.2017*

Abstract: Groundnut, pigeonpea and maize are major bold seeds crop in India. Planting of these bold seeds is a very drudgery and time consuming operation. To address this issue, vacuum type metering mechanism is done. Vacuum is created in this rod and goes down the vacuum cylinder. The metering cylinder rotates over rod and pick up the seeds through the seed hopper while passing through it. To evaluate the working of vacuum cylinder pickling % & metering efficiency of metering mechanism were considered under different suction pressure i.e. for groundnut seed 4500 Pa, 5000 Pa and 5500 Pa, for maize seeds 3500 Pa, 4000 Pa and 4500 Pa while for pigeonpea seeds 1500Pa, 2000 Pa and 2500 Pa. On the basis of superior performance the optimum suction pressure inside the vacuum cylinder for groundnut seed was found to be 5000 Pa with a metering efficiency of 106.67 % and maximum picking percentage of 96%. Similarly the optimum suction pressure for maize seed was found to be 4000 Pa with a metering efficiency of 108.88 % and maximum picking percentage of 97% while for pigeonpea seed these values were found to be 2000 Pa, 110 % and 92 %.

Keywords : Vacuum type metering mechanism, Vacuum cylinder

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*Corresponding Author