

## **Development of proximity distance sensor based electronic metering mechanism for three rows planter**

V.V. AWARE, S.V. AWARE, S.M. NALAWADE, D.M. MANE AND R.P. PATIL

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See end of the article for authors' affiliations

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Correspondence to:

**V.V. AWARE**

Department of Farm Machinery and Power, College of Agricultural Engineering and Technology, Dr. B.S. Konkan Krishi Vidyapeeth Dapoli, RATNAGIRI (M.S.) INDIA

### **ABSTRACT**

A newly developed electronic metering mechanism was introduced in 3 rows planter. 18 hp garden tractor was used as a power source. Three rows inclined plate planter consisted of hoppers, frame, ground wheel and power transmission system as main components. Electronic metering mechanism consisted of proximity distance sensor, ground wheel plate, 12 V DC battery, 12 V, 42 rpm DC motor, cell plate etc. as major components. Groove size on the cell plate was designed using spatial dimensions of cowpea seed. Metering mechanism was designed considering cowpea plant to plant spacing as 12 to 13 cm. As per design the theoretical plant to plant spacing for cowpea seed was 12.58 cm, number of cells on the cell plate were 10 and the number of fingers on the ground wheel plate were 7 having width as 1.3 cm. The newly developed electronic planter was tested in the laboratory. The average spacing plant to plant spacing for the three rows was 12.35 cm. It was necessary to maintain tractor speed constant for getting the plant-to-plant spacing as per design.

Accepted : April, 2008

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