

Design, Development Of Vibrating Seeder For Small Scale Nursery

Vinayak Fasake, Kavya Dashora*



Abstract

India stands first in the production of fruits and vegetables and the production is scaled up by application of modern techniques like nursery, greenhouses. Cultivation of vegetables in nursery bed and plug trays has a tedious and time-consuming operation. The current research has efforts towards to develop the low-cost seeder for small size seeds (brinjal, cabbage, chilly, tomato, cauliflower).

Traditional Sowing

1. First of all empty PVC plug tray is taken.
2. The pouring of growing media (Coco-pit, vermicompost) is done by manually
3. After this the labour manually takes the seeds and drop one by one in PVC plug tray, till the tray full fill.



Conclusions

Compared to the traditional method, the performance of the aforesaid is precise and it helps to save time and labor. The cost of this seeder will be very cheap and it will be affordable for all nursery growers. Low cost technology with high seeding efficiency; Precision sowing; Ergonomically design; Eco friendly; Timeliness in operation.

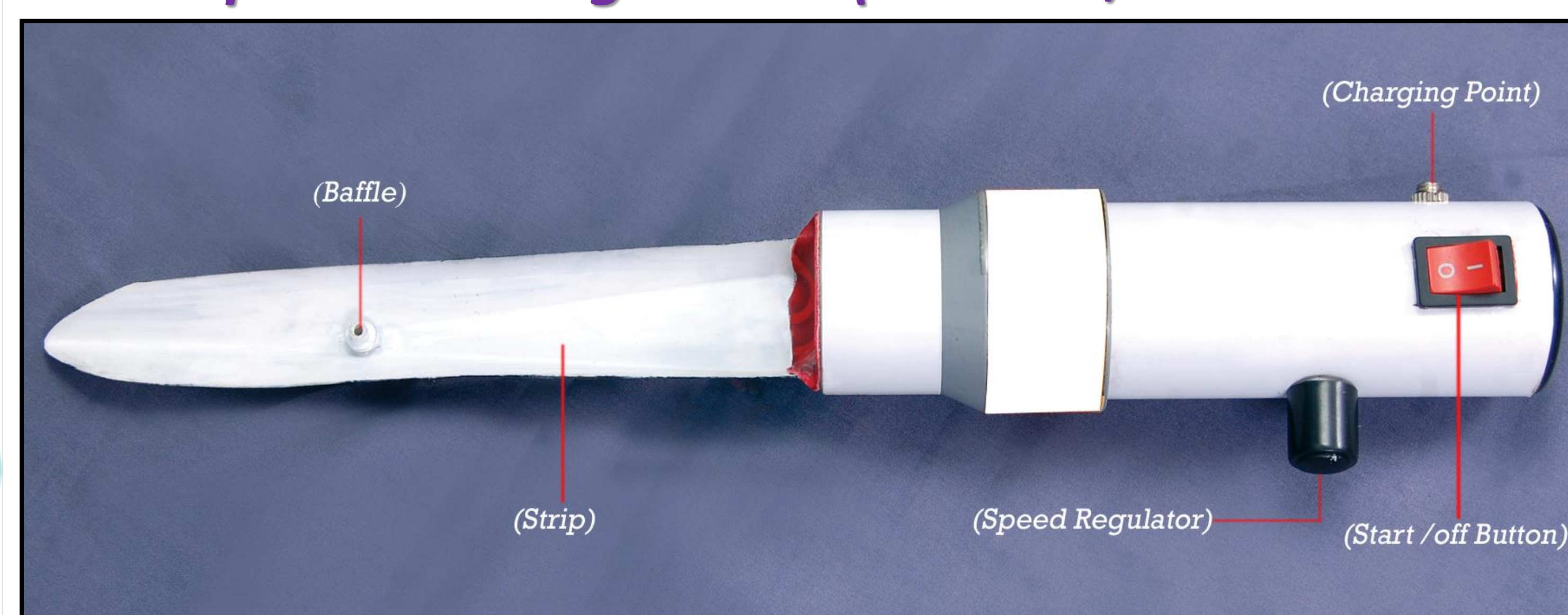
Industrial Significance

The developed product will help the nursery growers to improve their crop productivity

Technology Readiness Level

Product is ready and ready for marketing and distribution

Developed Vibrating seeder (VINSUN)



Mechanical Operation of Seeder



Results

Sr. No	Method	Labour	Time reqd./ tray (min)	Avg. Time Reqd. (min)	Seed Miss Index (%) (S_m)	Seed Multipl e Index (%) (S_{mu})	Work rate (No. of tray/h)
1	Mechanical	A	1.31	1.35	1-2	2-4	60-65
		B	1.37				
		C	1.36				
2	Manual	A	2.65	2.28	1 -3 (fluctuated with labour)	8-14 (fluctuated with labour)	30-35
		B	2.11				
		C	2.08				

(Values shown in table are average of 10 observations)

Advantages

- ✓ Saving in valuables seed and time
- ✓ Easy to operation
- ✓ Accuracy in seeding
- ✓ Easy to manufacture
- ✓ Light weight and portable
- ✓ High efficiency with low cost

Applications

- ✓ Vegetable nursery
- ✓ Field nursery
- ✓ Floricultural nursery
- ✓ Seed test laboratory

Ack