Seed cum fertilizer drill machine

CONSOLATION

Ramesh Chandra Gurjar, (45) a farmer who has studied up to the fifth standard, hails from Harda, Madhya Pradesh. He is married and has two sons studying in the fourth and fifth standard. He owns two acres of land on which he grows wheat and yellow gram. As he is physically challenged and cannot walk around, his wife does most of the farm work while he thinks of ways to improve farming methods. Fifteen years ago Ramesh had left his parents house and for the past 8-10 years he has been looking after his family on his own.

Genesis

Initially he used to do some amount of farming himself, but then he fell ill with TB and due to severe financial constraints was unable to get proper treatment. His condition worsened to such an extent that a friend Harnath Singh had to take him to Bhopal for medical attention where he was given free medicines and he finally completed the course in eleven months. Though cured of the illness, he remained very weak and as he was not able to farm, his financial condition also worsened. Neither could he afford a tractor or manual labour. He also had the bullocks, but as he was physically challenged he could not plough the land himself. In this exigency he had no option but to think of a solution to his problems and thus he came up with the idea for the seed-cum-fertilizer drill.

In 2001, he made an angle from discarded iron pieces and attached three ploughs to it. He also designed a contraption for him to sit on the angle. After a year, he attached a hollow pipe to sow the wheat. He also attached wheels and a gear system to make sure that the plough and *vavaniu* (sowing pipe) can run through the uneven land of the farm. His wife sowed the seeds while he controlled the bullocks and the plough. In 2003, he made more improvements and fitted three wheels. Now he could sit on the equipment, plough through the land, sow seeds, and control the speed with a breaking mechanism.

The innovation

This is a multi-utility bullock driven flexible agricultural equipment which can be used as a seed-drill-cum fertilizer dispersant as well as for ploughing, inter-cropping, weeding and leveling the land. This device comprises of a plough, seeding pipe, hopper, wheels, gears, hydraulic lifter and metallic chassis. The plough and sow teeth which are attached behind the chassis are adjustable widthwise for facilitating inter cropping. Three wheels support the total chassis. The hydraulic system acts as a mechanical lifter which detaches the attachments from the soil for easy movement enabling transportation without ploughing. This lifter allows height adjustment of the plough and sow pipe as per individual requirement. It also provides for easy turning of the machine. Mechanical braking has been attached for controlling the device. The system with its sow pipe and flexible height can be customized for all seed types and fertilizer needs. Sowing can be done in three rows

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in case of soya bean and in five rows in case of wheat crop. It can be used for rough or uneven surface and for hard and soft soil. There is also a provision for sitting on the device, so that a physically challenged person can use it. Seating can be adjusted for the physically challenged or others as per individual requirement.

Advantages

This innovation saves labor and time as well as dependence of the physically challenged on others and offers an alternative to many who cannot afford farm-labor or tractors. It is lightweight and made of angle channels, and thus completes tilling and weeding in just two-three days. It can also seed four-five acres of land per day and needs just one operator to run it, thus saving labor. In addition the equipment is so simple that one can customize it according to personal requirement or detach the parts that are not required for a particular task. With this equipment it is also possible to do multi-cropping and sow in between the fully grown crops. The plough can be replaced and the teeth of the equipment can be adjusted as per the tilling requirement. Because of these multifunctional features, Ramesh calls his equipment *Bahuhetuk Krishi Yantra.*

A boon for the physically challenged

The provision of lifter, seating arrangement and pressing lever (locking mechanism) to create sustained pressure for the engagement of the ploughing device with the soil are all special features incorporated for a physically challenged person, who cannot walk along /stand on the plough to create pressure. Knowing the needs of the physically challenged first hand, Ramesh painstakingly built this unit so that he could farm as an ordinary person without depending on any one. But this design not only meets all his needs but is also a versatile product useful for society at large.

This device was exhibited in a Krishi Mela in the district and it was appreciated by a lot of people. Some companies have approached him to buy the rights of this machine so that they could manufacture it under their brand. The equipment costs about Rs. 7000 now but if manufactured on a large scale the cost can be reduced to Rs. 5000. Thinking about further improvements, Ramesh plans to fit gears in the equipment so that the load on the bullocks can be reduced. He also wants to fit a sprayer to spray insecticides in the farm. Motorization of the device is also a future option to eliminate the need for using bullocks. His plan is to take a loan from the bank and manufacture this machine and thus earn his living. He looks forward to active support from the Government or other agencies to improve his innovation. He wants his equipment to reach the needy farmers and expects just reward for this vision and achievement. He looks forward to active support from the Government or other agencies to improve his innovation.