BED PLANTER CUM ZERO-TILL MACHINE

In the year 1994 ASS foundry made the first pea planter for sowing green peas on raised beds. Around the same time, Dr. S.S. Dhillon and Dr. D.S. Chauhan were trained with Dr. Ken Sayre on different issues related to planting system, at Mexico. At Mexico, lot of area of wheat was planted on raised beds. Convinced of the benefits of growing crops on raised bed and furrow system, the Indian scientists have started working on developing suitable machine for making ridges and furrows. The pea planter developed by ASS foundry provided the starting point. Dr. Dhillon, Professor, PAU, Ludhiana began working with ASS foundry and came with the second version of pea planter suitable for wheat. The DWR group (Dr. Chauhan etc.) also worked with ASS foundry and modified the PAU version, subsequently. One of these planters was put to rigorous testing on the farmers' fields for two years. Some of the bottlenecks identified include:

1. Seeding depth was not controlled.
2. It was difficult to seed multi-crops
3. Metering device and seed rate mechanisms were not up to mark
4. The size of the beds was fixed and the farmers wanted a planter with could make variable size beds.
5. It was difficult to place full dose of fertilizer in the center of the bed at 10 cm depth with the existing gear system.
6. The planter used fluted rollers for seeding as a metering device and it was difficult to seed rice by direct seeding because of long awns and hair on palia and lemma of the fruit, which do not allow free flow of the seeds.

In order to address the above issues, a new planter, which can both work as a zero-till machine, and bed-planting machine has been developed in close collaboration with the private manufacturer, ASS Foundry.

The new planter has following advantages overcoming the above mentioned drawbacks and it is a zero-till cum bed-planting machine. The new bed planter makes 15cm-raised beds, 37cm at top and a V shaped furrow 30 cm wide at top. It is able to vary the width of the beds and furrows at the top. The other special feature of the machine include:

1. Improved seed metering device with help in seed placement of different crops varying in size.
2. Seed rate can be varied by the brush used for varying the speed of the metering roller and adjustment of a brush mounted to wipe off extra seed.
3. Can handle fine particle fertilizer and the large sized (USG) fertilizer granules.
4. The power transmission wheel is better fitted with a tensile spring, which helps avoiding slippage, and hence the missing rows in unleveled fields.
5. Depth-controlling wheel helps seed placement at desired depth.
6. When shaper is removed and tines are spaced on the three bars, it acts as a zero-till machine. Added spacing provided by the 3-bars eases loose residue-raking problem of the machine.