

Direct Seeding of Rice (DSR) technique

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In news—The state government of Punjab has recently announced Rs 1,500 incentive per acre for farmers opting for Direct Seeding of Rice (DSR), which is known for saving water.

Need for DSR technique-

- Paddy is non-shelled rice that farmers grow and sell in mandis and then after milling paddy rice is prepared.
- In Punjab, 32% of the area is under the long duration (around 158 days) paddy varieties, and the rest comes under paddy varieties that take 120 to 140 days to grow.
- So, on an average 3,900 to 4,000 litres of water is required to grow one kg rice in the state.
- This technology helps in saving water.

About DSR technique-

- There are three methods of planting crops by direct seeding: broadcast, hill, and drill.
- Actual planting is done either manually or with a mechanical planter.
- Another technique, called dibbling, is a form of hill planting.
- In DSR cultivation, raising of nursery for transplantation is done away with.
- According to an analysis, **DSR technique can help save 15% to 20% water** and in some cases, water saving can reach 22% to 23%.
- With DSR, 15-18 irrigation rounds are required against 25 to 27 irrigation rounds in traditional methods.
- Apart from saving water, **DSR can solve labour shortage problems** because like the traditional method it does not

require a paddy nursery and transplantation of 30 days old paddy nursery into the main puddled field.

- **With DSR, paddy seeds are sown directly with a machine.**
- **DSR offers avenues for ground water recharge as it prevents the development of hard crust just beneath the plough layer** due to puddled transplanting and it matures 7-10 days earlier than puddle transplanted crop, therefore giving more time for management of paddy straw.
- This technique is suitable for medium to heavy textured soils including sandy loam, loam, clay loam, and silt loam.
- It should not be cultivated in sandy and loamy sand as these soils suffer from severe iron deficiency, and there is a higher weed problem in it.
- DSR in fields which are under crops other than rice (like cotton, maize, sugarcane) in previous years should be avoided as DSR in these soils is likely to suffer more from iron deficiency and weed problems.

Various methods of rice cultivation-

Following methods of rice cultivation are practiced in India.

1. Broadcasting method:

- Seeds are sown and broadcast by hand.
- This method is practised in those areas which are comparatively dry and less fertile and do not have much labour to work in the fields.
- It is the easiest method requiring minimum input but its yields are also minimum.

2. Drilling method:

- Ploughing of land and sowing of seeds is done by two persons.
- This method is mostly confined to peninsular India.

3. **Transplantation method:**

- This method is practised in areas of fertile soil, abundant rainfall and plentiful supply of labour.
- To begin with, seeds are sown in the nursery and seedlings are prepared.
- After 4-5 weeks the seedlings are uprooted and planted in the field which has already been prepared for the purpose.
- The entire process is done by hand.
- It is, therefore, a very difficult method and requires heavy inputs. But at the same time it gives some of the highest yields.

4. **Japanese method:**

- This method includes the use of high yielding varieties of seeds, sowing the seeds in a raised nursery-bed and transplanting the seedlings in rows so as to make weeding and fertilizing easy.
- It also involves the use of a heavy dose of fertilizers so that very high yields are obtained.
- The Japanese method of rice cultivation has been successfully adopted in the main rice producing regions of India.