



**DSR in flat and Raised Bed in no-till and reduced till land**



**Sesbania brown manuring**

## **Reducing unproductive evaporation losses of water by**

- ❖ **Residue management**
- ❖ **seedling age at transplanting**
- ❖ **Seeding time**
- ❖ **Cultivar choice**
- ❖ **Laser land leveling**

# Raised bed planting



| Particular                | Planting on fresh preparatory tillage | Planting on permanent beds | Flat sowing zero tillage | Conv. Flat sowing |
|---------------------------|---------------------------------------|----------------------------|--------------------------|-------------------|
| Time required, h/ha       | 13.04                                 | 4.80 (55.6)<br>[63.2]      | 3.23                     | 10.82             |
| Operational energy, MJ/ha | 2605.36                               | 1154.03 (41.6)<br>[55.7]   | 648.96                   | 1976.11           |
| Cost of operation, Rs/ha  | 2479.84                               | 1060.80 (44.3)<br>[57.2]   | 639.54                   | 1903.04           |

( ) % savings over conventional practice

[ ] %savings over fresh bed planting

# Production economics of rice after wheat : straw covered and straw incorporated

| Particular                    | Straw incorporated roto tillage rice | Non-straw roto tillage rice | Straw covered zero tillage rice | Non-straw zero tillage rice | Conv. Tillage rice |
|-------------------------------|--------------------------------------|-----------------------------|---------------------------------|-----------------------------|--------------------|
| Grain yield, t/ha             | 3.31                                 | 3.24                        | 3.36                            | 3.30                        | 2.94               |
| Cost of production, Rs/ha     | 8801                                 | 9740                        | 8640                            | 9115                        | 10610              |
| Benefit cost ratio            | 1.88                                 | 1.66                        | 1.94                            | 1.81                        | 1.39               |
| Operational energy, MJ/ ha    | 5579                                 | 6605                        | 5512                            | 5594                        | 9642               |
| Sp. Cost of production, Rs/kg | 2.66                                 | 3.00                        | 2.57                            | 2.76                        | 3.61               |

# Production economics

| Particular                        | Raised bed wheat |               | Zero tillage wheat sown | Conventional Flat sown wheat |
|-----------------------------------|------------------|---------------|-------------------------|------------------------------|
|                                   | Fresh bed        | Permanent bed |                         |                              |
| Grain yield, t/ha                 | 5.03             | 5.08          | 4.84                    | 4.60                         |
| Cost of production, Rs/ha         | 10030            | 8540          | 8635                    | 10710                        |
| Benefit-cost ratio                | 3.26             | 3.87          | 3.64                    | 2.79                         |
| Operational energy, MJ/ha         | 8750             | 7684          | 8444                    | 9516                         |
| Special operational energy, MJ/kg | 1.74             | 1.51          | 1.74                    | 2.07                         |
| Special cost of production, Rs/kg | 1.99             | 1.68          | 1.78                    | 2.33                         |

## Saving in water

Fresh bed = 30%

Permanent beds = 40%





*DSR*

*Puddled TPR*

**Cracking pattern in DSR and puddled rice fields**