

Extension Brochure : FPARP No. 3

Skip-furrow Method of Irrigation for Saving Water in Sugarcane



Prepared by

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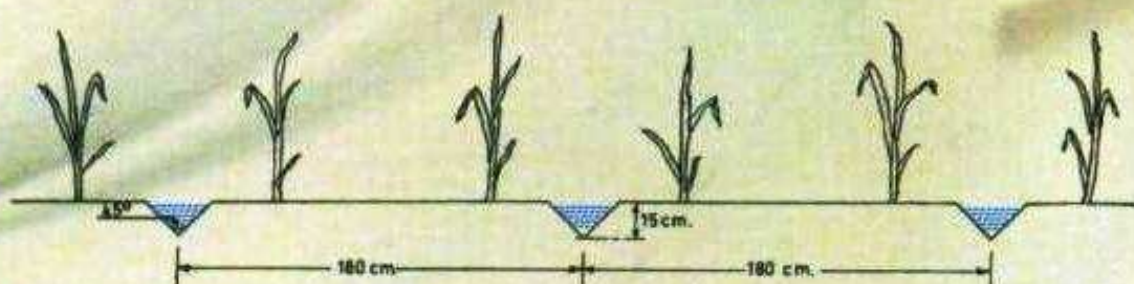
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Normally farmers irrigate sugarcane by flooding entire field with water. In this way, the entire soil surface of the field gets wet. Considerable amount of irrigation water thus, goes waste through evaporation from wet soil surface. In skip furrow method, efforts have been made to reduce the wet surface area in the field. In this technique, furrows are made in alternate inter-row space and the crop is irrigated through these furrows. Thus, the soil surface of alternate inter-row space in which furrows are not made, remains almost dry, thereby the evaporation losses are reduced to the extent of 30-40 per cent. This, in turn, results in saving of irrigation water. Irrigation water saved by this technique may be used to irrigate additional area. In this method, sugarcane is planted on flat bed as usual and after germination, 45 cm wide and 15 cm deep furrows are made in alternate inter-row spaces. At the time of irrigation, the furrows thus made are only provided water.

Skip furrow method of irrigation is based on the principle of reducing the evaporation from soil surface due to decreased irrigated wet area available for evaporation. Further the transpiration from plant canopy is also restricted as some of the plant roots are always exposed to dry soil. Both of these result in less evapo-transpiration and increased water use efficiency.

Operational Steps

- Prepare the field well for planting sugarcane.
- Cut the healthy seed cane stalks of a recommended variety in 3 or 2 budded sets.
- Prepare a solution by dissolving 200 gram bavistin in 100 liters water.
- Dip the cut sets in bavistin solution for 10-15 minutes to control the sett borne diseases.
- Open 12-15 cm deep furrows at 60 or 75 cm distance for spring planting and at 90 cm distance for autumn planting.
- Apply 75 kg urea, 130 kg DAP and 100 kg Muriate of potash per hectare at the time of planting in the furrows.
- Place the treated setts in the furrows in bud-to-bud or end to end sett placement systems.
- Prepare a solution by dissolving 5 liters Chlorpyrifos 20 EC in 1500-1600 liters water for one ha area.



SKIP FURROW IRRIGATION

- Spray the Chlorpyrifos solution over the setts placed in the furrows to control termite and army worm.
- Plank the field to cover the furrows.
- After germination, make 45 cm wide and 15 cm deep furrows in alternate inter-row spaces.
- Irrigate the field through furrows made in alternate inter-row spaces as and when required.
- Adjust the flow of water in such a way that water does not overflow the furrows.
- Carry out the weeding and hoeing operations as and when required.
- Apply 100 kg urea per ha along the rows after the first irrigation and do hoeing.
- Irrigate the field 4-5 times through furrows at an interval of 25 days up to the onset of monsoon.
- By the third week of June, apply 100 kg urea per ha along the cane rows and do hoeing.
- In the last week of June, apply 33 kg Furadan 3 G per hectare along the cane rows to control top borer.

- Follow plant protection measures as per the need.
- Do earthing -up before the onset of monsoon.
- Tie cane of each clump during the 1st or 2nd week of August with lower dry leaves.
- Tie the clumps of opposite rows together during September.
- Remove lower dry leaves.
- Harvest the cane close to the ground level to raise a good succeeding ratoon crop and to avoid yield loss.

Advantages

- Irrigation water is saved to the extent of 35-40 per cent.
- Water use efficiency is increased by 60-65 per cent.
- Weed infestation is reduced considerably.
- Normal yield and quality of sugarcane is obtained with less irrigation water.
- The cost of cultivation is reduced due to saving in irrigation water and less expenses incurred in weed control.
- The profit margin of the farmers is increased.



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