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How to save water with controlled irrigation

The total water requirement for the whole cropping season varies depending on soil type, topography, proximity to drainage, depth of water table, sub-soil profile characteristics, crop duration, area of contiguous fields, and cultural management practices.

1. Use shallow dry tillage. After harvesting, rotavate or plow under the field to minimize the formation of deep cracks and occurrence of bypass flow. Tilled layer acts as mulch that reduces soil drying and cracking while small soil aggregates block big cracks.
2. Plow the field immediately after initial irrigation. This reduces percolation during land preparation by sealing big cracks as soon as possible.
3. Shorten land preparation to not more than 4 weeks.
4. Puddle the soil very well. This is done by harrowing or rotavating the field 2 to 3 times followed by leveling. This practice increases the water holding capacity.
5. Practice synchronous farm operations. From land preparation, all farm operations should not vary by 4 weeks within at least 20 hectare contiguous area.
6. Apply uniform but low water depth of 2-5 cm during the first 3-4 weeks after planting.



Water must be used efficiently as it is becoming a scarce resource

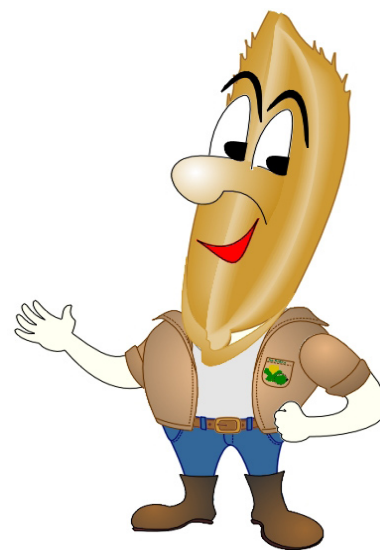


Land preparation should not be longer than 4 weeks to save on water

7. Practice safe alternate wetting and drying during the crop growing period. This does not reduce yield because only the excess water is being reduced. This is done by decreasing the frequency of irrigation schedules or by reducing the water volume for irrigation being applied. This practice also provides some degree of aeration for better root and tiller development. AWD can be generally started at 21-30 days after transplanting or seeding. During this time, seedlings have recovered from transplanting stress and crop canopy is almost closed.

Additional water-saving options based on certain conditions

1. Apply 5-7 cm pond water every time pond water subsides. This technique minimizes percolation rate owing to hydrostatic pressure and prevents runoffs. It is recommended for medium to heavy textured soils and all types of irrigation.
2. Use minimal irrigation to maintain soil saturation. This can be practiced in areas with less weed pressure and heavy to lighter soils. This technique also minimizes percolation rate. It is recommended in gravity irrigated areas with assurance of water schedule and pump systems.
3. Apply 5-7 cm pond water during irrigation after 5-7 days of no water on the paddy. This is applicable to heavy clay soils and in areas with occasional rainfall, in gravity irrigated areas with assurance of water schedule and shallow tube well pumps.
4. Reduce pond water depth to around 20-40% less than the usual practice every irrigation time. This is applicable to all types of soils and pump irrigated areas.



Reviewed by:
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