Save Water, Boost Your Harvest: A Farmer's Guide to Alternate Wetting and Drying (AWD)

A simple and effective technique for smarter rice farming

What is Alternate Wetting and Drying (AWD)?

Alternate Wetting and Drying (AWD) is a water-saving irrigation method for growing rice. Instead of keeping your fields continuously flooded, AWD involves allowing the soil to dry for a few days before re-irrigating. This simple change in water management can lead to significant benefits for you and your farm.

Why Should We Follow AWD?

Save Water: Use up to 30% less water for irrigation. This means lower pumping costs and more water available for other uses, especially important in areas with water scarcity.

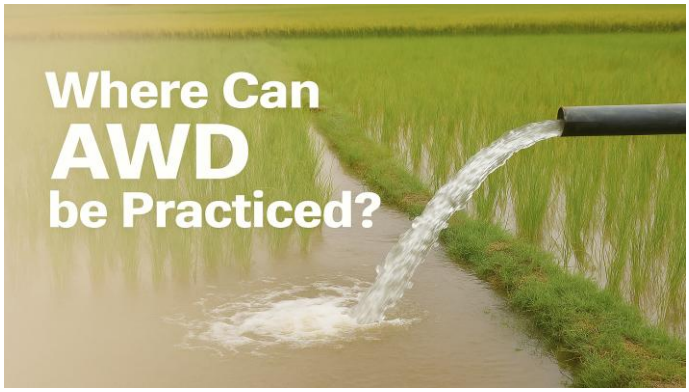
Increase Your Profits: With lower expenses on fuel or electricity for water pumps, you can increase your farm's profitability.

Healthier Soil and Stronger Plants: AWD can improve your soil's structure and increase the availability of essential nutrients like Zinc. This leads to stronger roots and healthier plants that are less likely to fall over (lodging).

Reduce Pests: AWD can disrupt the life cycle of some common rice pests that thrive in continuously flooded conditions.

CH_4 Mitigation Potential: AWD method is proven to slash methane production by 30-50%, tackling a major source of agricultural greenhouse gas emissions

No Loss in Yield: When practiced correctly, AWD does not reduce your rice yield and can sometimes even lead to an increase.



AWD suits groundwater-irrigated areas with reliable re-flooding. It is unsuitable in high rainfall, rainfed, and tail-end canal areas due to poor drainage or uncertain water availability.

How to Practice AWD: A Step-by-Step Guide

Practicing AWD is easy. The key is to monitor the water level in your field using a simple tool called a **Field Water Tube**.

What you need:

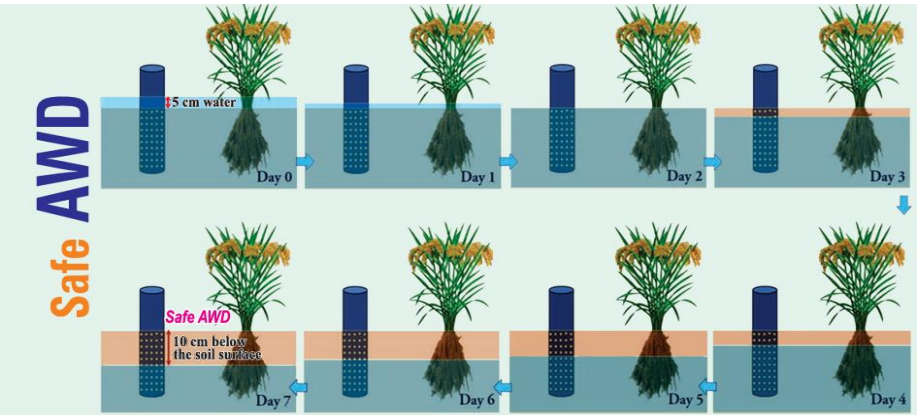
- A PVC pipe, about 30 cm (1 foot) long and 10-15 cm (4-6 inches) in diameter.
- A drill to make holes in the pipe.

Steps:

1. **Prepare the Tube:** Drill holes (about 5 mm in diameter) in the bottom 20 cm (8 inches) of the pipe, spaced 2 cm apart.
2. **Install the Tube:** A week or two after transplanting your rice, install the tube in a representative part of your field. Push it into the soil so that about 10 cm (4 inches) remains above the ground. Make sure the soil inside the tube is at the same level as the field.
3. **Irrigate:** Flood your field with about 5 cm (2 inches) of water.
4. **Wait and Watch:** Allow the water level in the field to drop. The water level inside the tube will show you the water table below the soil surface.
5. **Time to Re-irrigate:** When the water level inside the tube has dropped to 15 cm (6 inches) below the soil surface, it's time to irrigate again. Flood the field with 5 cm of water.
6. **Repeat the Cycle:** Continue this cycle of wetting and drying throughout the growing season.

"Safe AWD": A Critical Period to Keep Your Fields Flooded

To ensure you do not lose any yield, there is a crucial time to suspend AWD.



From one week before to one week after flowering, keep your field continuously flooded with about 5 cm of water.

This is a critical stage for the rice plant, and ensuring it has enough water will guarantee good grain formation. After this period, you can resume the wetting and drying cycles.

Things to Keep in Mind

- ➔ **Weed Management:** The drying periods can sometimes encourage weed growth. Be prepared to manage weeds effectively.
- ➔ **Nutrient Management:** Apply nitrogen fertilizer on dry soil just before you irrigate for better efficiency.
- ➔ **Not for all soils:** AWD works best in clay and loamy soils that can hold water well. It may not be suitable for very sandy soils that drain too quickly.
- ➔ **Land Levelling:** A well-levelled field ensures even water distribution and prevents some parts from getting too dry.