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## How to make Observation Well for Controlled Irrigation

### Making the observation well

1. Make an observation well out of a plastic tube or bamboo that is 25 cm long with at least 10 cm diameter. When using a bamboo, make sure there is no node within the cut material.
2. Designate one end of the tube as “top.” From the topmost part of the tube, make a circumferential mark at 5 cm and 10 cm and label them with ‘wet season’ and ‘dry season’, respectively.



3. Using a manual or electric drill with 3-5 mm diameter, make holes every 3 cm horizontally or length wise.
4. Keep a 5 cm distance between holes vertically or cross wise.



### Installing the observation well

1. After planting, select a representative site in your field where the observation well can be installed. An ideal site is located at 1-2 m from paddy dike to facilitate regular observation of the paddy water.  
*For farms with uniform conditions among paddies, only one observation well per hectare is needed. Farms with heterogeneous condition or paddies with different soil texture or elevation need one observation well per category (soil texture or elevation).*

2. In the selected site, press the tube vertically against the ground as much as you can then pull it back completely.



3. Remove the soil inside the tube after lifting it above the ground by down pouring the soil inside.
4. Repeat steps 2 and 3 until the marker “wet season” or “dry season” in the tube is exactly leveled against the ground surface.
5. Fix the observation well vertically and check if the label for a given season (wet season or dry season) is leveled against the ground.



## Using the observation well

1. During the wet season, flood the field until the water reach the topmost portion of the tube. During the dry season, flood the field until the water reach 5 cm above the ground or the circumferential line marked with "wet season."
2. Irrigate the field when there is no more visible water in the observation well.



## Important Reminders

- Start irrigating the field based on the observation well 21-30 days or four weeks after planting. At this time, seedlings are well established and the primary weed control measures were executed already.
- Start irrigating in the afternoon, around 3-4 PM, to minimize evaporation losses and to take advantage of cooler irrigation water.
- During the tillering period, the rice plant and soil are healthy if there is enough oxygen to balance the various physicochemical and biological activities in the rhizosphere, hence do not flood the field continuously.
- During flowering, maintain 5 cm depth of standing water in the paddy to avoid the development of unfilled grains owing to lack of water.
- Last irrigation should be one week before harvest for light textured soil and two weeks before harvest for heavy-textured soil.
- Practice shallow rotavation after harvesting. This helps conserve residual moisture and minimizes the development of wide and deep cracks during dry season fallow.



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