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Estimating Potential Soil Water Repellency Using Water Drop Penetration Time

Water Droplet Penetration Test (WDPT) measures the time in seconds for drops of water of a designated volume to infiltrate into the soil. The more water repellent the soil, the higher the amount of time needed for the drop to penetrate the soil.

This easy testing method provides an accurate assessment of the degree of water repellency in a soil and the potential for problems such as LDS to develop.

Tools Needed:

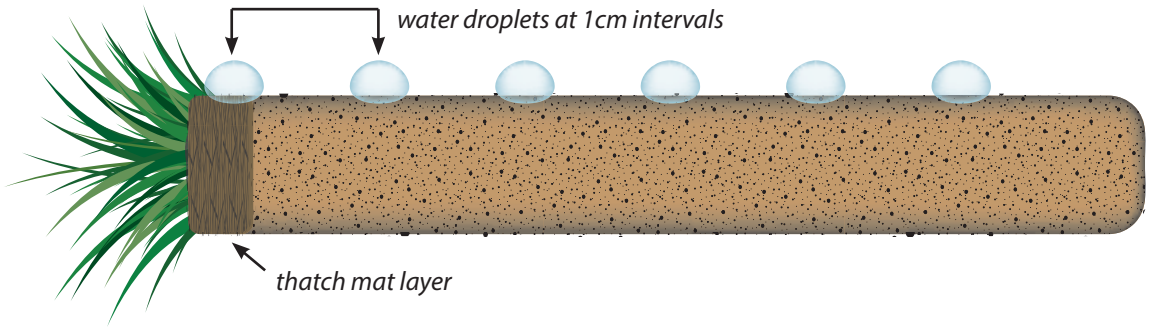
- soil probe
- eye dropper
- ruler
- stop watch

Soil Water Repellency Classification:

< 5 seconds	=	wettable
5 - 60 seconds	=	slightly water repellent
60 - 600 seconds	=	strongly water repellent
> 600 seconds	=	severely water repellent

Procedure:

1. With a soil probe, collect soil cores to a depth of about 6 in.
2. Dry cores for 2 weeks at room temperature. Soils MUST be completely dry. (For faster drying, cores may be dried overnight in a 200-degree oven. Please note that this drying technique may reduce the accuracy of test results.)
3. Place core horizontally on workbench. With the eyedropper, place a drop of water at 1 cm intervals (about ½ inch) along the core, starting at the top of the thatch mat layer and ending at 2-3 inches.
4. Using a stopwatch, determine the length of time (in seconds) it takes for the water droplet to completely penetrate the soil core.
5. Droplets that do not penetrate the core for 10 minutes (600 seconds) will be recorded as >600 seconds.



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Today we offer a portfolio of conservation based solutions focused on three pillars of healthy plant growth and environmental stewardship: water management, nutrition conservation, and A.I. distribution and retention.