IRRIGATION FACTS

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How to Estimate Soil Moisture by Feel

IRRIGATION IS A MEANS of maintaining a continuous supply of available moisture in the plant root zone of the soil throughout the growing season. When the soil moisture is allowed to reach the permanent wilting percentage, plants wilt and growth is restricted. If this condition is reached, the irrigator has waited too late. Where large acreages are irrigated, several days may be required to cover the entire acreage; consequently, irrigation must be started soon enough to arrive at the last portion of the field before its available water has been exhausted.

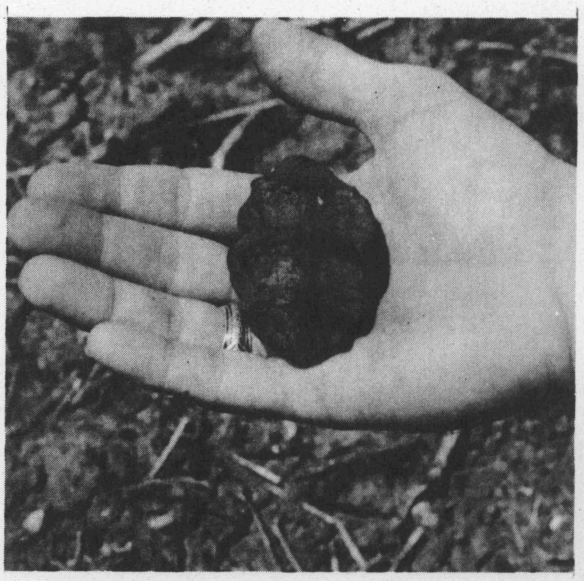
By inspecting soil moisture conditions at regular intervals and at several depths, the irrigator obtains information as to the rate at which moisture is being used by crops from different soil depths. This provides a basis for determining when and how much water to apply. For most crops, irrigation should be started when about 50 percent of the available moisture in the soil root zone is depleted.

A practical method of estimating the available soil moisture is to take a small amount of soil, squeeze it in the hand so as to form a ball; then refer to the chart on the reverse side for a description of the feel and appearance of different textured soils for various moisture percentages.

WATER HOLDING CAPACITY OF DIFFERENT TEXTURED SOILS

Soil texture	Available water - inches per foot of depth
Sandy (coarse)	1/2 - 1
Sandy loams (light)	1 - 1 1/2
Silt and clay loams (medium)	1 1/2 - 2
Clays (heavy)	2 - 2 1/2

TOO DRY



IDEAL

FEEL CHART FOR ESTIMATING SOIL MOISTURE

DEGREE OF MOISTURE	PERCENT USEFUL SOIL MOISTURE REMAINING	FEEL OR APPEARANCE OF SOILS			
		COARSE	LIGHT	MEDIUM	HEAVY - VERY HEAVY
Dry	0	Dry, loose, single-grained, flows through fingers.	Dry, loose, flows through fingers.	Powdery, dry, sometimes slightly crusted but easily breaks down into powdery condition.	Hard, baked, cracked; sometimes has loose crumbs on surface.
Low	50 or less	Still appears to be dry; will not form a ball with pressure.*	Still appears to be dry; will not form a ball.*	Somewhat crumbly, but will hold together from pressure.*	Somewhat pliable; will ball under pressure.*
Fair	50 to 75	Same as coarse texture under 50 or less.	Tends to ball under pressure but seldom will hold together.	Forms a ball, somewhat plastic; will sometimes slick slightly with pressure.	Forms a ball; will ribbon out between thumb and forefinger.
Excellent	75 to field capacity	Tends to stick together slightly; sometimes forms a very weak ball under pressure.	Forms weak ball, breaks easily, will not slick.	Forms a ball and is very pliable; slicks readily if relatively high in clay.	Easily ribbons out between fingers, has a slick feeling.
Ideal	At field capacity	Upon squeezing, no free water appears on soil but wet outline of ball is left on hand.	Same as coarse.	Same as coarse.	Same as coarse.
Too wet	Above field capacity	Free water appears when soil is bounced in hand.	Free water will be released with kneading.	Can squeeze out free water.	Puddles and free water forms on surface.

*Ball is formed by squeezing a handful of soil very firmly with fingers.

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