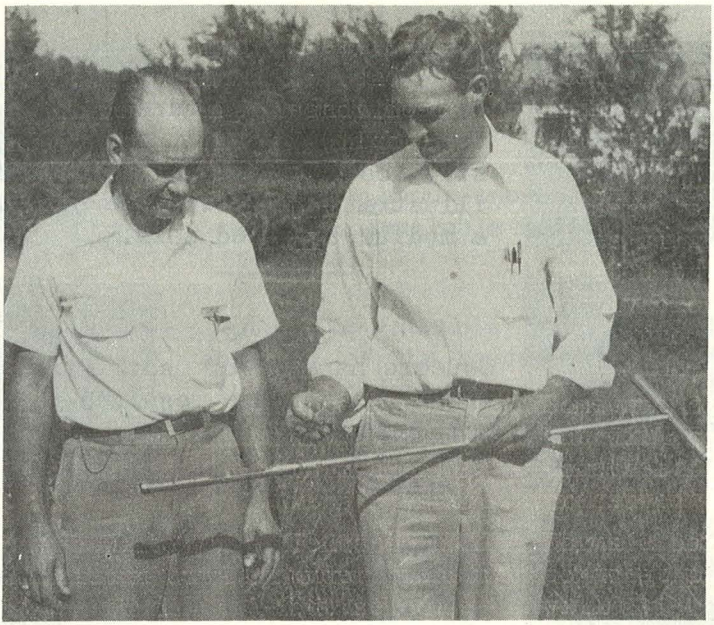
1955

EC55-700 Field Moisture Test for Determining when to Irrigate

Paul Fischbach

John C. Steele

E.C.55 700



FIELD MOISTURE TEST
For Determining When to Irrigate

Paul Fischbach - John C. Steele

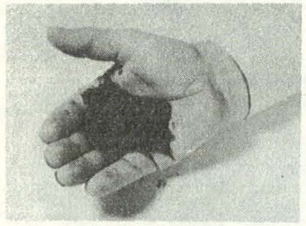
The following pages describe a practical field method of determining when to irrigate. Timely irrigation is a must if maximum production is to be secured.

The only sure indication of need is the soil moisture content. If the soil contains less than 50 per cent readily available moisture, in the upper 3 feet, it is time to irrigate.

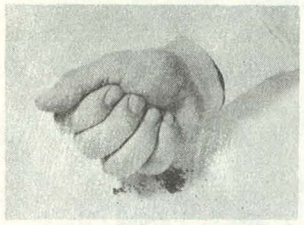
Soil texture serves as a guide as to how much water a soil will hold. This is usually given as inches of water per foot of soil. However, soil moisture content can be determined, within limits, by feel and appearance.

EXTENSION SERVICE
UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE
AND U.S. DEPARTMENT OF AGRICULTURE
COOPERATING
W. V. LAMBERT, DIRECTOR

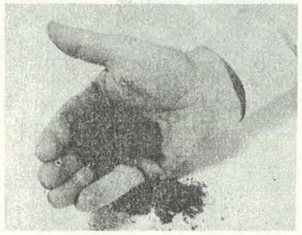
Take a sample* from each six-inch interval in the top three feet of soil.



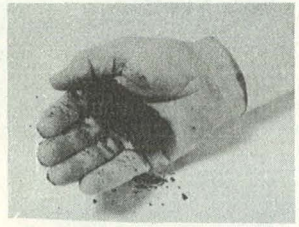
Determine soil texture of each sample. that is, whether it is a sandy loam, silt loam, or a clay loam soil. The illustrations shown are of silt loam, a medium-textured soil.



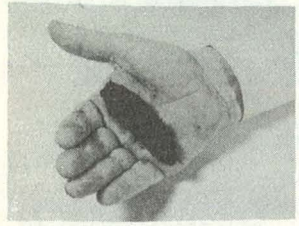
Squeeze handful of soil firmly. Use about the squeeze required for a hard-milking cow.



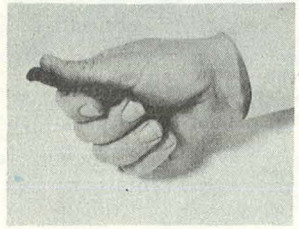
If the soil is too dry to form a ball, it contains less than $\frac{1}{4}$ as much readily available moisture ** as it can hold. Crop may be damaged before irrigation can be completed.



If the soil is moist enough to form a ball but is somewhat crumbly when squeezed between thumb and palm, it contains about one-half the amount of readily available moisture. Time to irrigate.



Note the durable ball when the soil has 3/4 of the readily available moisture. It is somewhat plastic and will stick with pressure when squeezed between forefinger and thumb. Check again in 3 days.

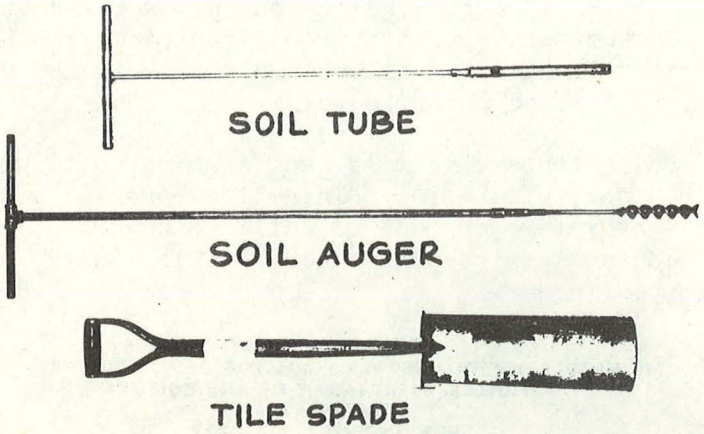


If the soil will ribbon out or if it sticks to the thumb when rolled between the forefinger and thumb, it has between 75 and 100 per cent RAM. Test moisture supply in 6 days.

For moisture content test of light and heavy soils see back page.

---

* SAMPLING TOOLS



** Readily Available Moisture (RAM) is the amount of moisture the soil will hold for plant use in inches of water per foot of soil depth. Under average conditions the amounts for the various soils are approximately as follows:

	inches per foot of soil
Loamy sands and sandy loams	.75 to 1.25
Very fine sand loams & silt loams	1.50 to 2.00
Silty clay loams and clay loams	2.00 to 2.20

TEXTURE GUIDE FOR R.A.M.

Feel or appearance of soils

Percent of R.A.M. remaining in soil	Loamy sands and sandy loams (light)	Very fine sandy loam and silt loams (medium)	Silty clay loams and clay loams (heavy)
0	Dry, loose, flows through fingers.	Powdery, sometimes slightly crusted but easily broken down into powdery condition.	Hard, baked, cracked; difficult to break down into powdery condition.
50 or less	Appears to be dry, will not form a ball with pressure.	Somewhat crumbly but will hold together from pressure.	Somewhat pliable, will ball under pressure.
50 to 75	Tends to ball under pressure but seldom will hold together when bounced in the hand.	Forms a ball, somewhat plastic, will slick slightly with pressure.	Forms a ball, will ribbon out between thumb and forefinger, has a slick feeling.
75 to 100	Forms a weak ball, breaks easily when bounced in the hand, will not slick.	Forms a ball, very pliable, slicks readily.	Easily ribbons out between thumb and forefinger, has a slick feeling.
100 percent (field capacity)	Upon squeezing no free water appears on soil, but wet outline of ball is left on hand, soil will stick to thumb when rolled between thumb & forefinger.	Same as sandy loam.	Same as sandy loam.