



# When to irrigate: “Look and Feel” Method

Knowing when to irrigate will reduce the problems of over- or under-irrigation and help improve crop yields. There are many ways to determine when to irrigate, however, the “Look and Feel” method is a practical and inexpensive way to assess soil moisture and irrigation needs.

## How to use the “Look and Feel” method?

This method takes some practice. The following steps will help:

- 1) **Sample:** Get some soil from the root zone with a shovel
- 2) **Squeeze:** Squeeze the soil firmly in your hand and try to form a “ball” (Fig 1.)
- 3) **Bounce:** Test the strength of the “ball”:

- **Very weak ball** = breaks apart with one bounce
- **Weak ball** = breaks apart with 2 to 3 bounces
- **Good ball** = does not break apart when bounced

- 4) **Ribbon:** For medium- and fine-textured soils, squeeze the soil between thumb and forefinger and try to form a “ribbon” (Fig. 2)
- 5) **Stains/marks:** Observe any soil/water staining or marks on fingers (Fig.1)
- 6) Compare observations with Table 1 and Fig. 3 below



Figure 1. The “ball” that forms after a moist soil is squeezed. Also see soil staining on fingers.



Figure 2. A soil “ribbon”

Table 1. What to look for in the “Look and Feel” method

Soil texture	Irrigate if...		
	“Ball” Strength	Ribbon	Stains/Marks
Course (Sand, Loamy Sand)	Forms no ball or a <b>very weak</b> ball	(Not applicable)	No staining or marks on fingers
Moderately Course, Medium, Fine (Sandy Loam to Clays)	Forms no ball or a <b>weak</b> ball	Does not form a ribbon	

**Note:** Method obviously not relevant for cloddy, bone-dry soil

For more information visit: <http://ip.ucdavis.edu>




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Reference: Estimating soil moisture by feel and appearance, USDA




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Fig 3. Appearance of different soils with various amounts of water (Pictures from USDA)


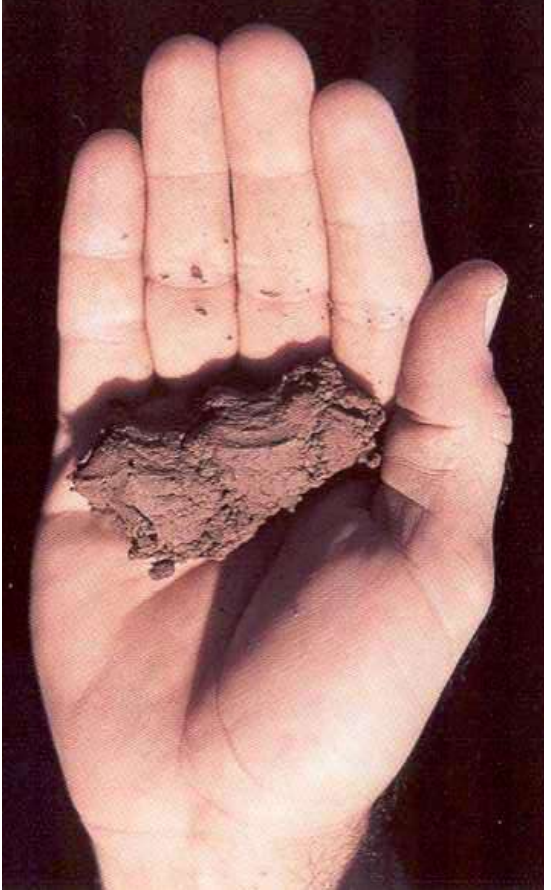

**Course-textured soils (sand, loamy sand):**

Irrigate	Do Not Irrigate	Do Not Irrigate
		
<p><b>Slightly Moist</b></p>	<p><b>Moist</b></p>	<p><b>Wet</b></p>
<p><b>What to look for:</b> Forms a very weak ball, no ribbon, well defined finger marks in ball</p>	<p><b>What to look for:</b> Forms weak ball, no ribbon, moderate water staining and loose sand grains on fingers, darkened color</p>	<p><b>What to look for:</b> Forms weak ball, no ribbon, heavy water staining and loose sand grains on fingers, darkened color</p>




**Moderately course-textured soils (sandy loam):**

Irrigate	Do Not Irrigate	Do Not Irrigate
		
<p><b>Slightly Moist</b></p>	<p><b>Moist</b></p>	<p><b>Wet</b></p>
<p><b>What to look for:</b> Forms weak ball with defined finger marks, no ribbon, no water staining on fingers, grains break away, darkened color</p>	<p><b>What to look for:</b> Forms good ball with defined finger marks, no ribbon, very light soil/water staining on fingers, darkened color</p>	<p><b>What to look for:</b> Forms good ball with wet outline left on hand, weak ribbon, light/medium staining on fingers</p>

Medium-textured soils (sandy clay loam, loam, silt loam):

Irrigate	Do Not Irrigate	Do Not Irrigate
 A hand holding a small amount of dark soil. The soil is loose and crumbly, falling easily from the fingers. There is no visible water or staining on the skin.	 A hand holding a ball of soil. The soil is cohesive enough to form a ball but breaks apart into a thin, weak ribbon when pulled. The soil has a slightly darker, more uniform color.	 A hand holding a ball of soil. The soil is very cohesive, forming a well-defined ball that holds its shape. It breaks apart into thick, well-defined ribbons. The soil is dark and has a heavy coating on the fingers.
<p><b>Slightly Moist</b> <b>What to look for:</b> Forms weak ball with rough surfaces, no water staining on fingers, few soil particle break away</p>	<p><b>Moist</b> <b>What to look for:</b> Forms a good ball, weak ribbon, very light staining on fingers, darkened color, pliable</p>	<p><b>Wet</b> <b>What to look for:</b> Forms a good ball with well-defined finger marks, ribbons well, light to heavy soil/water coating on fingers</p>

**Fine-textured soils (clay, clay loam, silty clay loam):**

Irrigate	Do Not Irrigate	Do Not Irrigate
		
<p><b>Slightly Moist</b></p>	<p><b>Moist</b></p>	<p><b>Wet</b></p>
<p><b>What to look for:</b> Forms a weak ball, no ribbon, very few soil particles break away, no water stains, clods flatten with applied pressure.</p>	<p><b>What to look for:</b> Forms good, smooth ball with defined finger marks, ribbons well, light soil/water staining on fingers</p>	<p><b>What to look for:</b> Forms a good ball, ribbons well, uneven medium to heavy soil/ water coating on fingers</p>