

Wheat Irrigation Schedule –Field observations

Yields can be reduced by too little or too much water (waterlogging).

When to irrigate?

- **Available Soil Water.** Wheat should be irrigated when 30 – 50% of the available soil water (ASW) has been used. Use the following to estimate a ASW for the different soil textures.

The soil is too dry if ...

	Fine Sand – Loamy fine sand	Sandy Loam – Fine sandy loam	Sandy clay loam, loam, silt loam	Clay, clay loam, silty clay loam
25-50% ASW- Slightly moist				
	Forms a very weak ball with well- defined finger marks, light coating of loose and aggregated sand grains remains on fingers.	Forms a weak ball with defined finger marks, darkened color, no water staining on fingers, grains break away.	Forms a weak ball with rough surfaces, no water staining on fingers, few aggregated soil grains break away.	Forms a weak ball, very few soil aggregations break away, no water stains, clods flatten with applied pressure.

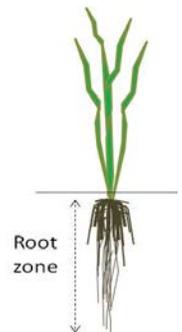
The soil has adequate moisture, if ...

	Fine Sand – Loamy fine sand	Sandy Loam – Fine sandy loam	Sandy clay loam, loam, silt loam	Clay, clay loam, silty clay loam
50-75% ASW- Moist				
	Forms a weak ball with loose and aggregated sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon.	Forms a ball with defined finger marks, very light soil/water staining on fingers, darkened color, will not slick.	Forms a ball, very light staining on fingers, darkened color, pliable, forms a weak ribbon between the thumb and forefinger.	Forms a smooth ball with defined finger marks, light soil/water staining on fingers, ribbons between thumb and forefinger.

- **Critical stages.** The most critical times to avoid water stress in wheat are at booting, tillering and flowering.
- **Irrigation cut-off.** Stop irrigation when the crop is close to hard dough stage (the end of grain filling).

How much water should I add?

- **Available Soil water (ASW)** Even if the soil surface is dry, moisture may be adequate in the root zone. Check ASW as outlined above.
- **Crop appearance:** Too little water can lead to a poor crop stand, reduced tillering, rolled or wilted leaves, dull grey-green or dying leaves, leaves dying (especially the tips), lower grain weight. if too much: Bright yellow or dead lower leaves, pale yellow upper leaves. Roots may be discolored (brown). (See separate Fact sheets Wheat Water management.)
- **Root appearance:** A healthy root will look white after being scratched. If too much water is added and waterlogging occurs, then roots turn pink, and may rot and turn black.
- **Moisture depth:** Irrigate to supply water to the root zone and not below. Water percolating below the root zone is unavailable to the plant.



Prepared by Maria Paz Santibanez and Mark Bell, 2012

Reference: Publication 8168: Small Grain Production Manual, Part 5 Irrigation and Water Relations –Fulton, A., Bali, K., Mousli, Z., and Jackson, L., UC Davis; Crop evapotranspiration –Guidelines for computing crop water requirements –FAO Irrigation and drainage paper 56; NRCS Guide “Estimating Soil moisture by feel and appearance” Program Aid Number 1619-1998

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