



When to Schedule the Last Irrigation for Corn

Correctly scheduling the last irrigation can increase returns by reducing pumping costs and improving harvest conditions. In some cases, where irrigation is allocated, carefully scheduling irrigation may preserve some water for the next growing season.

The amount of water a corn crop needs to reach physiological maturity is well understood under normal growing conditions, so it's possible to get a good estimate of the amount of water required for a given crop (Table 1). There may be enough water stored in some situations to finish a crop, while in others one or more irrigations may be necessary. Consider the following factors when deciding whether or not a final irrigation is necessary:

- At the end of the growing season, maintain the soil water depletion level at 60% instead of the 50% recommended in the middle of the season, as the rate of water use per day is much lower.¹
- The water holding capacity of different soils varies depending on soil texture and should be taken into account. For example, silt loam has a water holding capacity of 2.2 inches of water per foot of soil, but a loamy sand can hold only 1.1 inches of water per foot of soil. At 60% depletion, the silt loam would have 5.3 inches of usable water in the top four feet if the soil was at field capacity, so at R4.7 no additional water would be needed. However, at 60% depletion the loamy sand would only have 2.64 inches of water available in the top four feet starting at field capacity so an additional irrigation may be necessary after R4.7 (Tables 1 and 2).¹
- Keep in mind the average amount of rain that may occur and consider it when determining the need for irrigation.
- The objective is to provide just enough water to reach the full yield potential while leaving the field as dry as possible. Doing this provides the maximum amount of soil moisture storage capacity for precipitation that may occur prior to next year's crop. Maintaining the field as dry as possible may also help mitigate harvest delays from a subsequent wet fall that could saturate the soil.¹

Table 1. Crop water needs for the remainder of the growing season.*

Growth Stage	Estimated Days to Maturity	Water Needs to Maturity (inches)
R4 Dough	34	7.5
R4.7 Beginning Dent	24	5
R5 ¼ Milk Line	19	3.75
R5 ½ Milk Line	13	2.25
R5 ¾ Milk Line	7	1.0
R6 Black Layer	0	0

*Adapted from Burr, C. and Nygren, A. 2020. Scheduling the last irrigation of the season. University of Nebraska-Lincoln, CropWatch. <https://cropwatch.unl.edu/2020/scheduling-last-irrigation-season>

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Soil Texture	Available Water in 1 ft of Soil at Field Capacity (in./ft)	Available Water in 4 ft of Soil at Field Capacity (in./4 ft)
Fine Sand	1.0	4.0
Loamy Sand	1.1	4.4
Sandy Loam	1.4	5.6
Silty Clay or Clay	1.6	6.4
Fine Sandy Loam, Silty Clay Loam, Clay Loam	1.8	7.2
Sandy Clay Loam	2.0	8.0
Loam; Very Fine Sandy Loam; or Silt Loam	2.0	8.0
Topsoil with either Silty Clay Loam or Silty Clay Subsoil with Medium-Texture Subsoil	2.5	10.0

*Adapted from Burr, C. and Nygren, A. 2020. Scheduling the last irrigation of the season. University of Nebraska–Lincoln, CropWatch. <https://cropwatch.unl.edu/2020/scheduling-last-irrigation-season>

Sources

¹Burr, C. and Nygren, A. 2020. Scheduling the last irrigation of the season. University of Nebraska–Lincoln, CropWatch. <https://cropwatch.unl.edu/2020/scheduling-last-irrigation-season>

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ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

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