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Irrigation update and crop water use 7/14 – 7/20

Corn water demand peaks during the early reproductive stages, especially during tasseling, silking, and pollination— critical periods when the crop is highly sensitive to water stress. Water shortages at these stages can significantly reduce yield potential. By tassel emergence, corn typically reaches its full effective rooting depth of 3 to 4 feet. This root zone can hold approximately 3 inches of available water in sandy soils and up to 6 inches in loam soils. Since crop water use often exceeds rainfall during this period, supplemental irrigation may be necessary to meet crop demand.

Soybeans in the early reproductive stages (R3–R6) are currently using about 1.32 - 1.42 inches of water per week. These stages are the most sensitive to water stress, and insufficient moisture can reduce the number of seeds per pod, decrease seed size, and lower overall yield potential. To increase irrigation efficiency, aim to apply enough water to meet five to six days of crop water use, typically 1 to 1.25 inches per irrigation event. Irrigation should match crop demand, subtracting recent rainfall and allowing room in the soil profile for future precipitation. Crops are now entering their peak water use period. For more information, please refer to the full article. Irrigation Scheduling Tools can help estimate crop water needs and decide timing and application.

Estimated weekly crop water use for field crops in Michigan (in/week) Week of July 14 - 20				
Crop	**Growth stage**	**Constantine**	**Entrican**	**Hart**
	Reference ET	1.20	1.25	1.29
Corn	V10	0.91	0.95	0.98
	V12	1.20	1.25	1.29
	V16, VT, Silk, Blister, Dough, Begin Dent	1.32	1.38	1.42
Soybeans	R1 Beginning Bloom	1.20	1.25	1.29
	R2 Full Bloom	1.32	1.38	1.42
	R3 Begin Pod / R4 Full pod	1.32	1.38	1.42

The table above presents estimated crop water use for various field crops across three locations in Michigan. This data helps irrigation management decisions by showcasing potential crop evapotranspiration, calculated based on reference evapotranspiration and crop coefficients for each crop growth stage. It is crucial to note that crop water use values vary across regions due to differences in weather conditions, growth stages, agronomic practices and soil properties. When using these values for irrigation scheduling, be mindful that they assume all applied irrigation water will be utilized by the plants without any loss.

Additionally, these values do not account for any precipitation that may occur during the week of calculation. Reference evapotranspiration data was obtained from Enviroweather, which also offers a model for determining potential crop evapotranspiration. To access this tool, visit Enviroweather, click on "Crops," select your crop and use the potential evapotranspiration tool by choosing your nearest weather station, the latest date of interest and other crop information.