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Irrigation update and crop water use 7/7 – 7/13

Corn at the VT (tasseling) stage has shown a significant increase in water use. Crop water demand peaks during the early reproductive stages, particularly during tasseling, silking, and pollination; periods when the crop is most sensitive to water stress. During these stages, irrigation may be necessary, as water use often exceeds precipitation. This week, corn is using approximately **0.20 inches of water per day**, therefore maintaining adequate soil moisture to support yield potential is highly important.

Soybeans in the early reproductive stages are currently using approximately 1.40 inches of water per week. The most critical growth stages for water availability are R3–R6. During these stages, soybeans are highly sensitive to water stress. Failing to meet water needs during this period can lead to fewer seeds per pod, smaller seed size, and ultimately lower yield potential.

Wheat at maturity has significantly reduced water use, and irrigation is no longer required. If you plan to plant a second crop after wheat, it is crucial to ensure there is sufficient soil moisture to support quick germination and uniform emergence, which are key to successful stand establishment.

When scouting your fields, keep an eye out for visual signs of water stress. In soybeans, stressed plants may rotate their leaves, exposing the silver-gray, fuzzy underside to sunlight. This is a survival mechanism to reflect light and reduce water loss, but it signals severe stress and potential yield reduction. In corn, leaf rolling is a natural response to heat and limited moisture, helping lower transpiration and canopy temperature. While some rolling can occur on hot days, even with adequate moisture, persistent rolling into the early evening or mid-morning is a clear indicator of moisture stress. 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 7 - 13				
Crop	**Growth stage**	**Constantine**	**Entrican**	**Hart**
	Reference ET	1.28	1.25	1.29
Corn	V8	0.72	0.70	0.72
	V10	0.98	0.95	0.98
	V12	1.28	1.25	1.29
	V14, V16, VT (Tasseling)	1.41	1.38	1.42

Soybeans	V3 3rd Node	0.77	0.75	0.78
	R1 Beginning Bloom	1.28	1.25	1.29
	R2 Full bloom	1.41	1.38	1.42
	R3 Begin pod/ Full pod	1.41	1.38	1.42
Wheat	Soft Dough	1.28	1.25	1.29
	Ripening	0.64	0.63	0.65
	Mature	0.13	0.13	0.13

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.