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# Irrigation update and crop water use

With recent high temperatures leading to dry soils conditions, irrigation activity has increased. **Corn** at the V8-V10 growth stages is currently using approximately 0.8 to 1.15 inches of water per week. Water demand will continue to increase as the crop approaches V14, where it typically peaks and remains high through reproductive stages.

**Soybean** water use ranges from 0.9 to 1.5 inches per week, depending on the growth stage. As soybeans progress through vegetative and early reproductive stages, adequate soil moisture is necessary to support canopy development.

**Wheat,** now at the soft dough stage, has decreased its water use. If there is adequate soil moisture to carry the crop to maturity, irrigation can be shut off at this stage to achieve the best results. Additional irrigation beyond the soft dough stage is typically unnecessary and may even increase the risk of lodging. If you plan to plant a second crop after wheat, there are important considerations to keep in mind; most notably, ensuring there is sufficient soil moisture to support quick germination and uniform emergence for successful establishment.

In addition to meeting crop water needs, early summer irrigation can also help incorporate fertilizers or herbicides. However, it's important to provide just the necessary water, avoiding overwatering. Leaving room in the soil profile for forecasted rainfall helps reduce the risk of excess water, which can lead to deep percolation and leaching, especially in sandy soils.

It's essential to monitor soil moisture closely and adjust irrigation accordingly. 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)**

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| Week of June 30 - July 6 | | | | |
|---|---|---|---|---|
| **Crop** | **Growth stage** | **Constantine** | **Entrican** | **Hart** |
| | Reference ET | 1.49 | 1.51 | 1.52 |
| Corn | V6 | 0.58 | 0.59 | 0.59 |
| | V8 | 0.83 | 0.85 | 0.85 |
| | V10 | 1.13 | 1.15 | 1.16 |
| | V12 | 1.49 | 1.51 | 1.52 |
| Soybeans | V1 1st Node | 0.45 | 0.45 | 0.46 |
| | V2 2nd Node | 0.74 | 0.76 | 0.76 |
| | V3 3rd Node | 0.89 | 0.91 | 0.91 |
| | R1 Beginning Bloom | 1.49 | 1.51 | 1.52 |
| Wheat | Boot / Heading / Flowering / Grain fill | 1.63 | 1.66 | 1.67 |
| | Soft Dough | 1.49 | 1.51 | 1.52 |
| | Ripening | 0.74 | 0.76 | 0.76 |

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.

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