Wisconsin Irrigated Potato Production Decisions During a Drought Year

Sprout development
- Inspect wells & irrigation nozzles.
- Plan ahead to rehab & repair as needed, especially if water demand is going to be high.
- Plant potato seeds. Weed control.

Vegetative growth
- Hot & dry conditions during emergence may damage plants. Alternating periods of wet & dry increase risk of early blight.
- Dry conditions increase leaf/flower injury & speed plant & increasing risk of seed.
- Irrigate to keep seeds hydrated. Begin fertilizing & pest control.
- Dry conditions may cause plants to go dormant. Apply seed leading to plant mortality. Irrigate to keep soil moisture at 65%. Continue fertilization & pest control.
- High daily ET rates may exceed capacity of irrigation system, decreasing yield. Dry leaf increases risk of late blight, fungal root diseases, and tuber blemishes (if spring wet, yield decreases). Irrigate for totalize and maintain adequate ET (80–100% of spring ET).
- Continue fertilization & pest control.

Tuber bulking
- High daily ET rates may exceed capacity of irrigation system, decreasing yield. Dry leaf increases risk of late blight, fungal root diseases, and tuber blemishes (if spring wet, yield decreases). Irrigate for totalize and maintain adequate ET (80–100% of spring ET).
- Continue fertilization & pest control.

Maturation
- Terminate vine growth. Harvest crop.

Management Decisions
- Moisture in the winter months is important to recharge the local aquifers.
- Winter recharge quickly and short droughts are not too concerning to producers.
- However, when aquifers do not replenish, it shows up in lower lake & river levels & affects those who are dependent on surface water supplies.

Crop Phenology
- Wind erosion is a concern if cover crops did not overwinter.
- Plant damage.
- Pest and disease damage.
- Yield and quality reducing.
- Moisture is necessary for cover crop establishment & survival into the winter.
- Least moisture demand by crops.

Outcome Observed
- Cover crop failure.
- Soil moisture recharge.

Drought Concerns
- crop failure.
- soil moisture recharge.
- pest and disease damage.
- yield and quality reducing.
- moisture necessary for cover crop establishment & survival into the winter.
- least moisture demand by crops.
- pest control.
- disease control.

Legend:
- Outcome Observed
- Drought Concerns
- Management Decisions
- Crop Phenology