







Between 60 and 140 days after planting

- Tuber bulking rate is linear
- 900 lbs/A day tuber bulking rate (9 cwt/acre/day)
- 0.8 oz tuber weight/plant/day (1.2% of final plant yield/day)
- Every 20 days, the plant will add 1 lb in tubers
- Final yield equivalent to 4.1 lbs/plant (34 inch rows, 10 in-row spacing)

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Prime your Plants and Soils with Early Season Soil Moisture

- Irrigate in the fall before planting to fill the soil profile
- Roots need moisture prior to emergence (65-75% ASM)
- Pre-Plant Irrigation
- Tillage dries out soils
- Pre-Emergence Irrigation
- Pre-Emergence Herbicides







Soil moves from root system and transpired from the leaves via stomata



Water helps move nutrients from the soil into the plant
 – Keeps plant/cells hydrated and allows for growth/expansion

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What is Plant Transpiration (continued)?

- Weather/climate drive plant transpiration
- Air temperature and solar radiation are primary factors in transpiration rate
- Wind speed contributes to plant transpiration
- Wind to high, the stomata close and transpiration actually decreases
- As relative humidity increases, transpiration will decrease.









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	Soil Water Content (in/ft)		
	Field	Wilting	
Soil Texture	Capacity	Point	AWC
Coarse Sand	1.2	0.6	0.7
Fine Sand	1.5	0.7	0.8
Loamy Sand	2.2	1.2	1.0
Sandy Loam	2.7	1.3	1.4
Fine Sandy Loam	3.4	1.6	1.8
Sandy Clay Loam	4.0	2.0	2.0
Loam	4.0	1.8	2.2
Silt Loam	4.3	2.0	2.3
Silty Clay Loam	4.6	2.8	1.8
Clay Loam	4.8	3.0	1.8
Silty Clay	4.8	3.2	1.6
Clay	4.8	3.4	1.4
Peat Mucks	5.0	2.6	2.4

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Narrow it Down - Keep it Simple

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Ideal Potato Water Management

- Maintain irrigation equipment
- Calibrate equipment, measure output
- Prime your soil early, anticipate rapid growth
- Real time soil moisture values
 - Volumetric (soil water content)
 - Soil water potential
- Predicted ET
- Rain gauges to record actual application levels
- Field visits
- Management, management, management

Questions?

- Should I err on the side of too much or too little irrigation, and why?
- Name four tools used in combination to monitor soil moisture in potato fields
- How best can you irrigate potatoes during stressful weather conditions?
- Is it favorable to have the soil just below the tubers in the hill dry to prevent tuber rot in storage or field?

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- Explain Evapotranspiration
- What happens to plants if the soil is at permanent wilting point?







