

Irrigation Scheduling Using Sensors

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Goal

Maintain water in soil to be sufficient for crop growth to minimize water stress (and yield reduction) and avoid overirrigation.

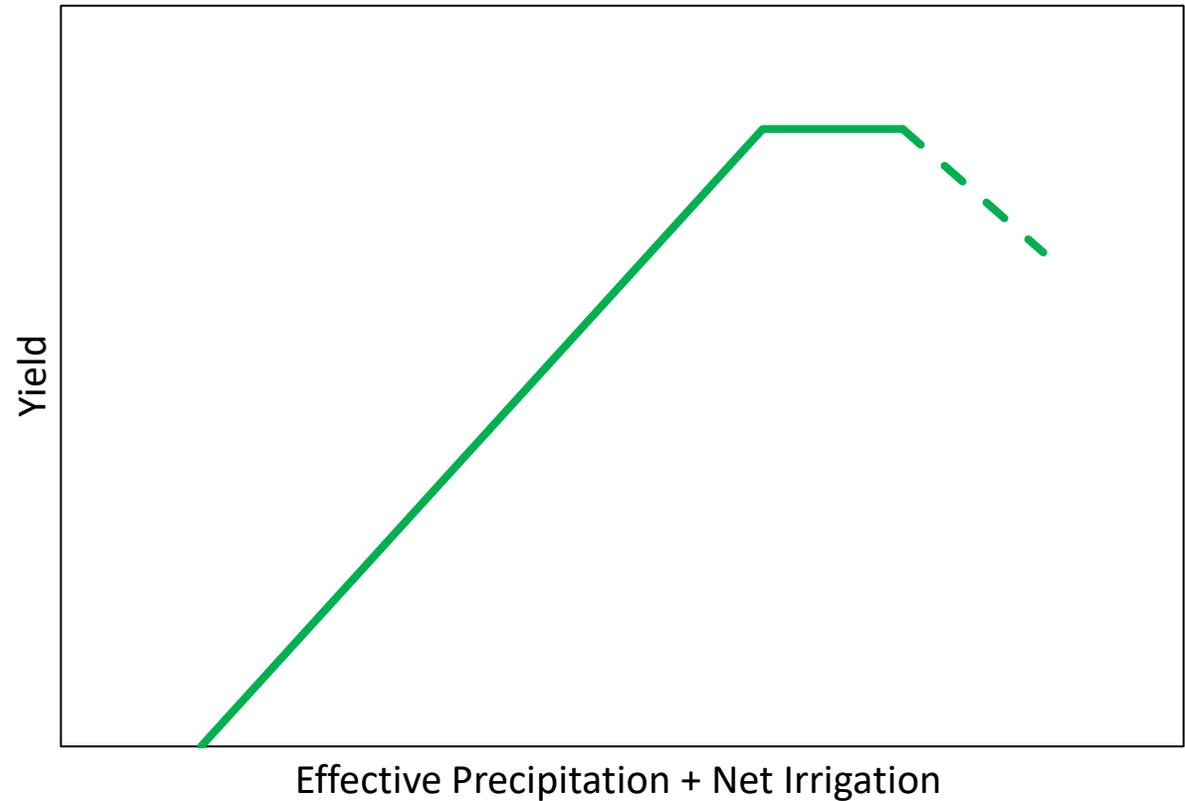
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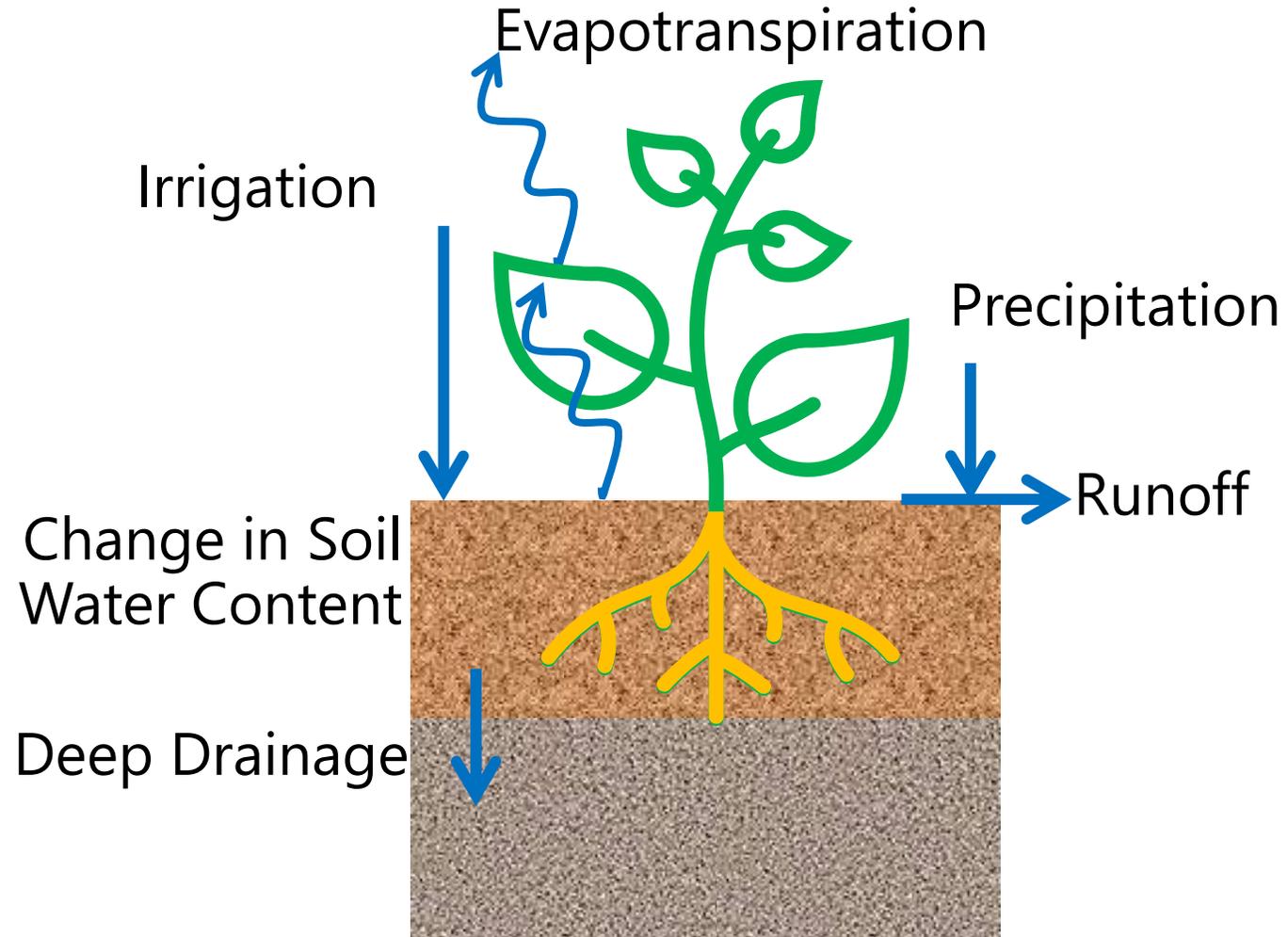
Crop Production

Crop yield is directly related to water stress, or the lack thereof

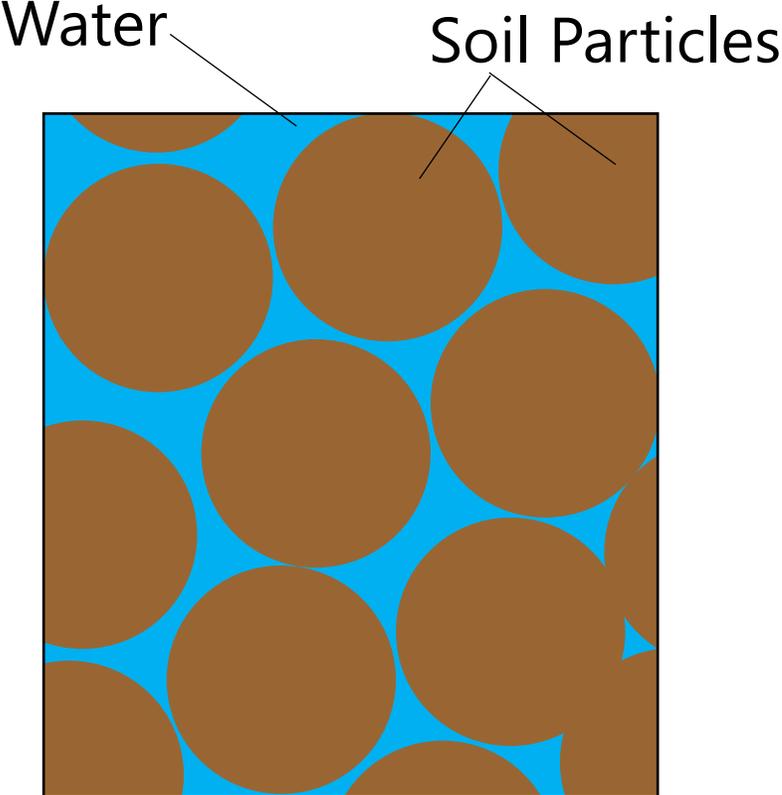
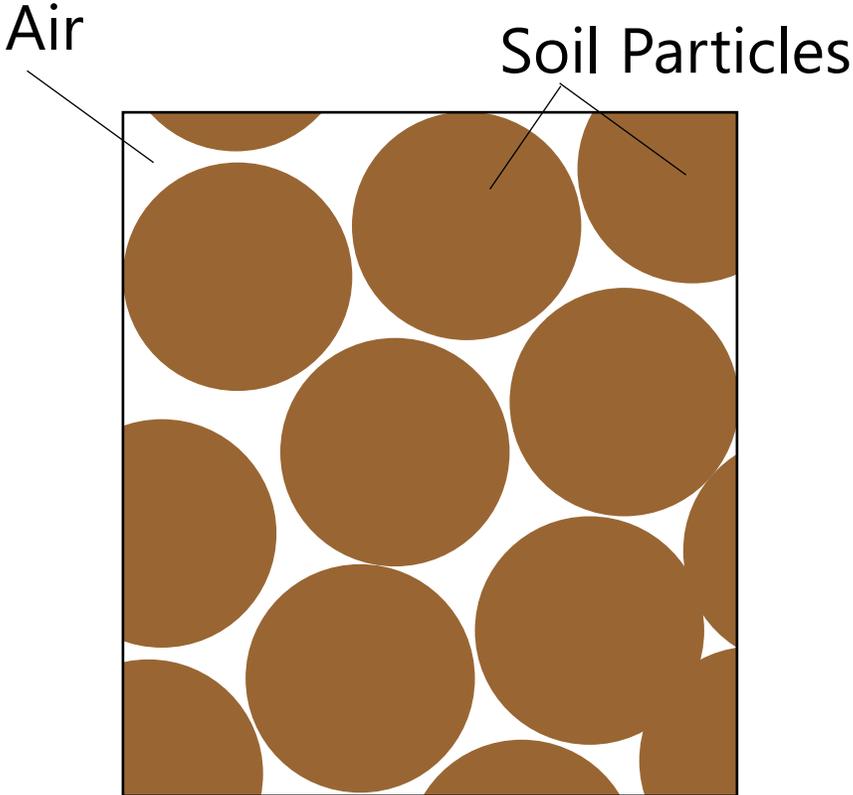
Simplified Yield Production Function



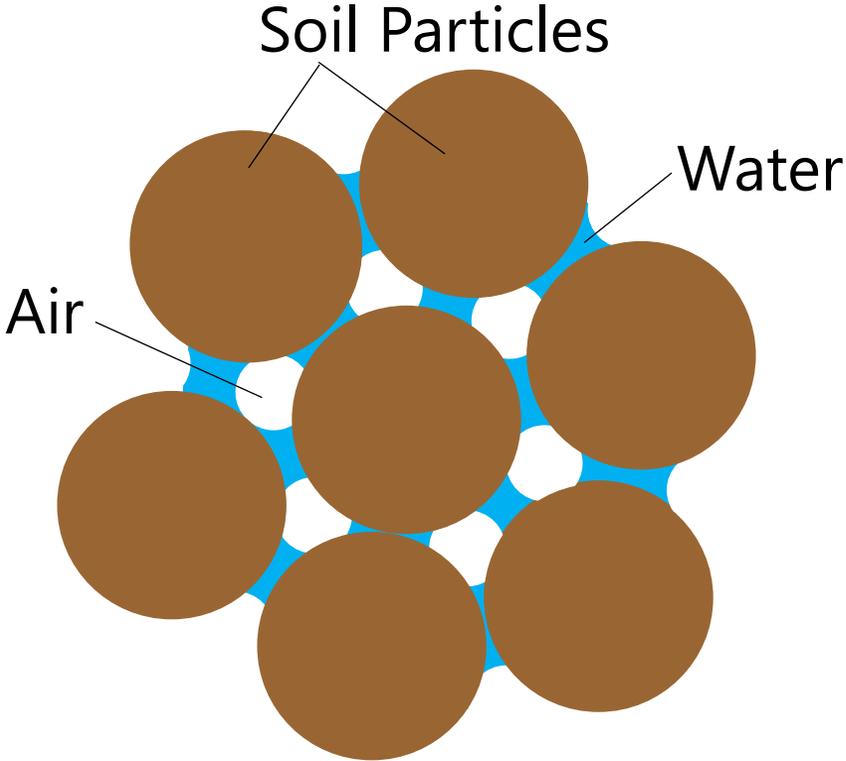
Irrigation Basics



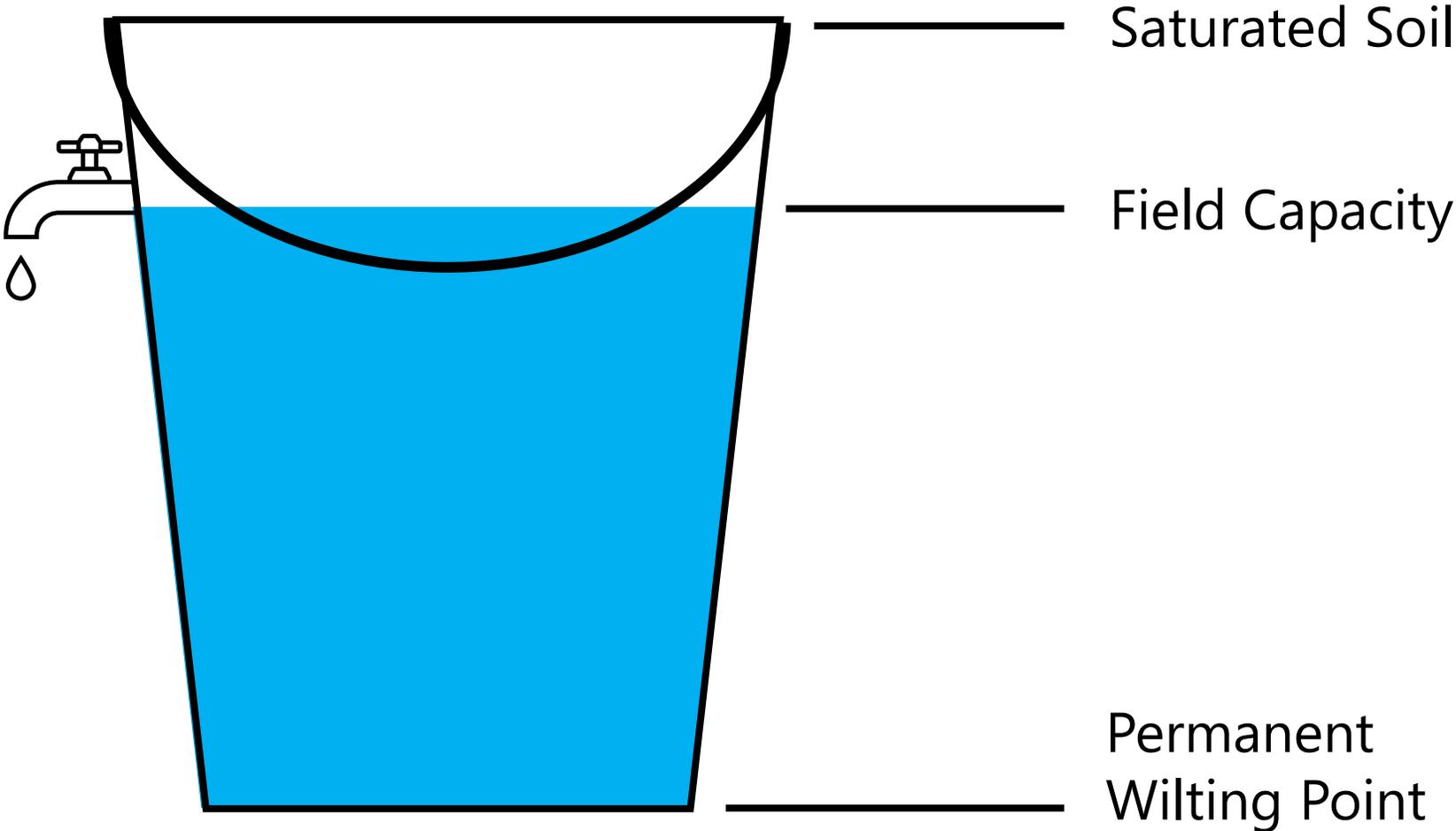
Soil Water Content



Soil Water Content



Soil Available Water



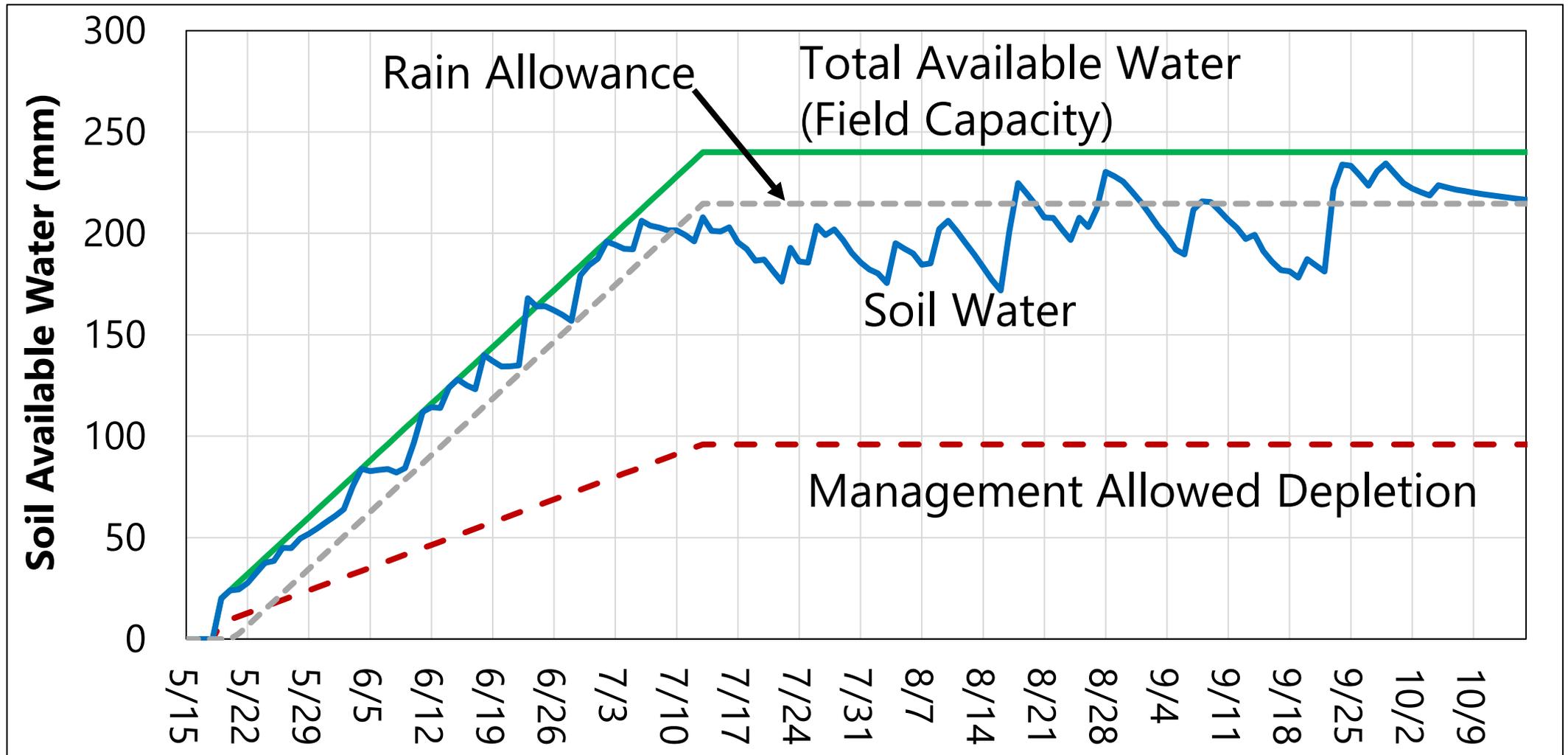
Soil Available Water



Field Capacity

Wilting Point

Managing with Soil Water



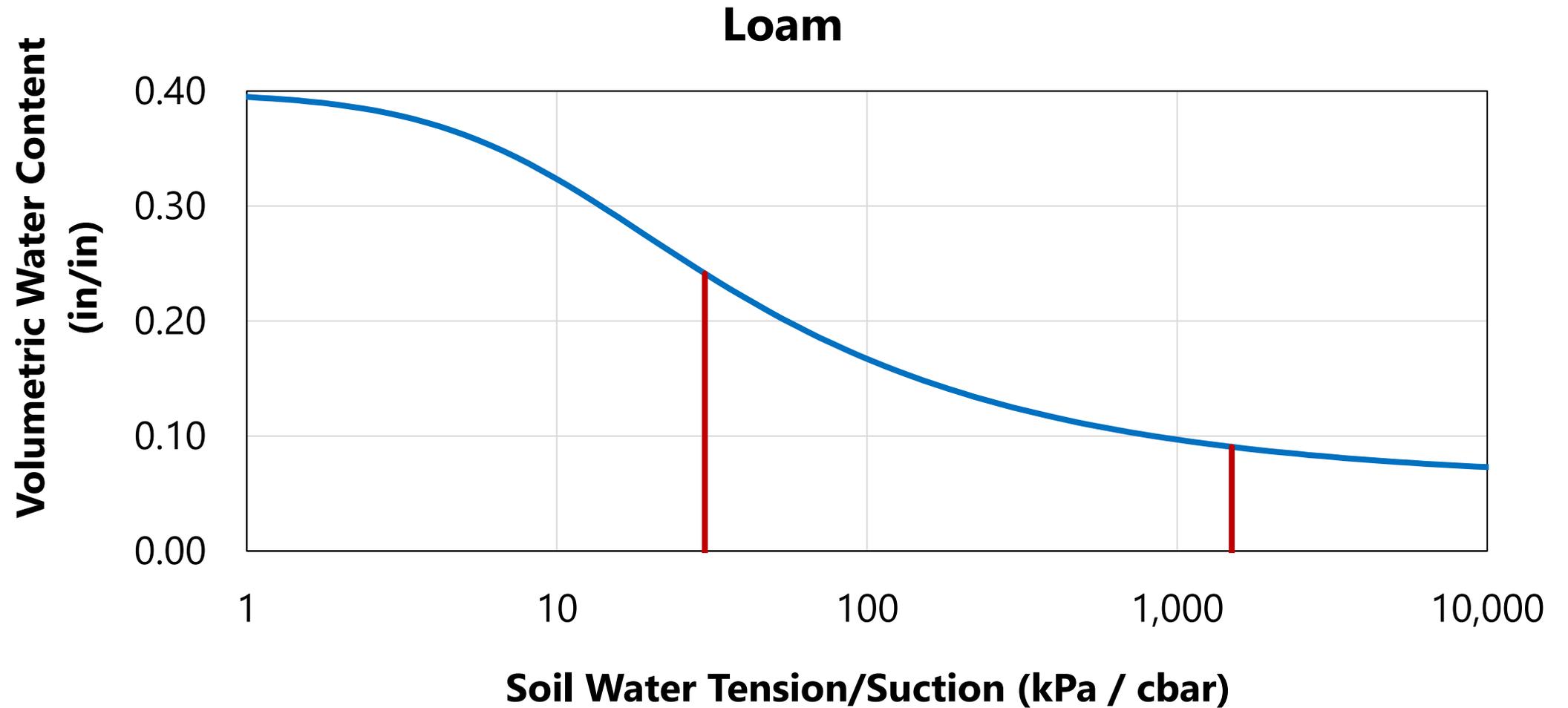
Soil Monitoring

- Soil moisture
 - Water content
 - Potential
- Hand-feel
 - Search: “nracs hand feel soil moisture”

<https://www.wcc.nrcs.usda.gov/ftpref/wntsc/waterMgt/irrigation/EstimatingSoilMoisture.pdf>



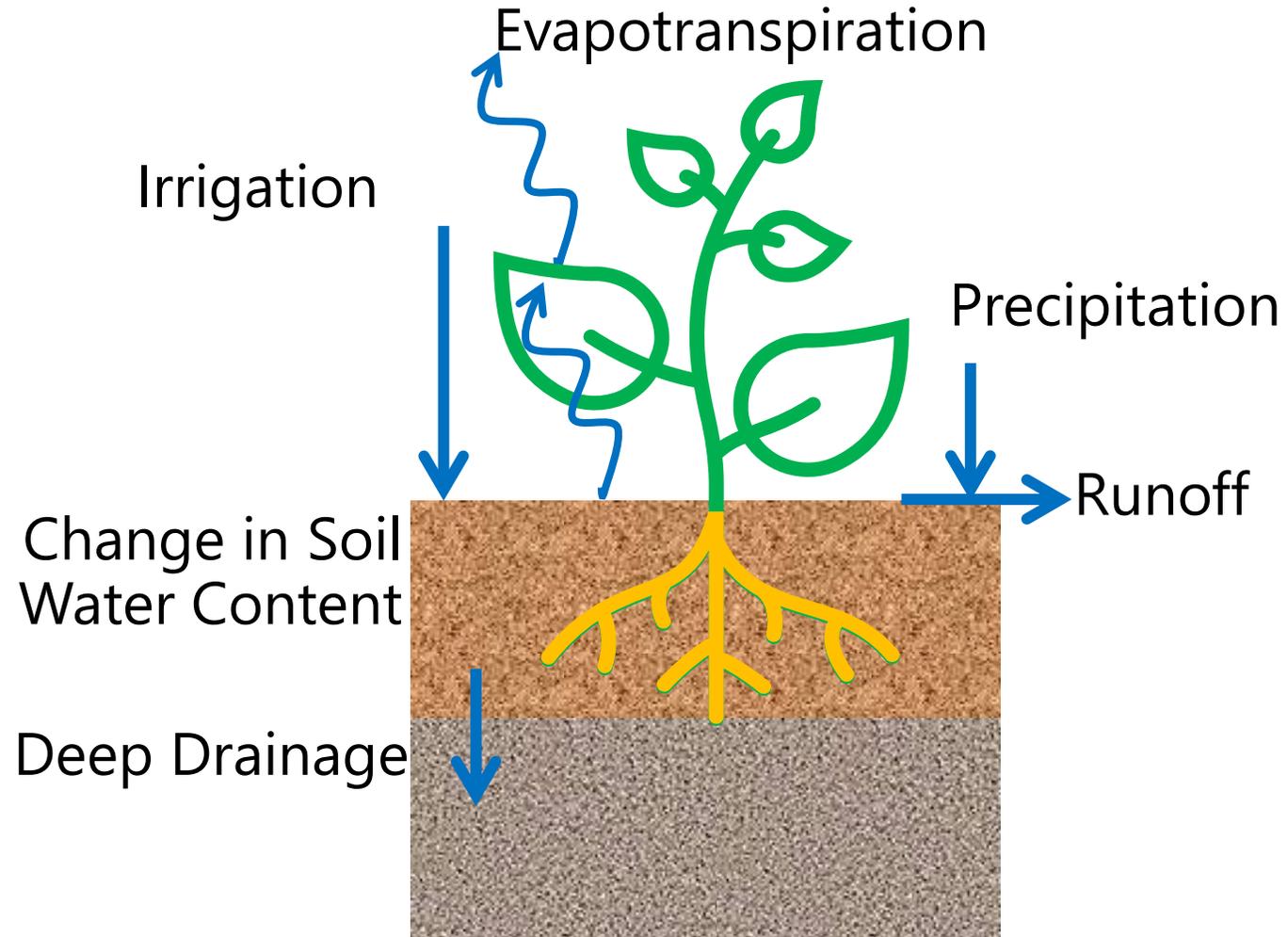
Soil Tension



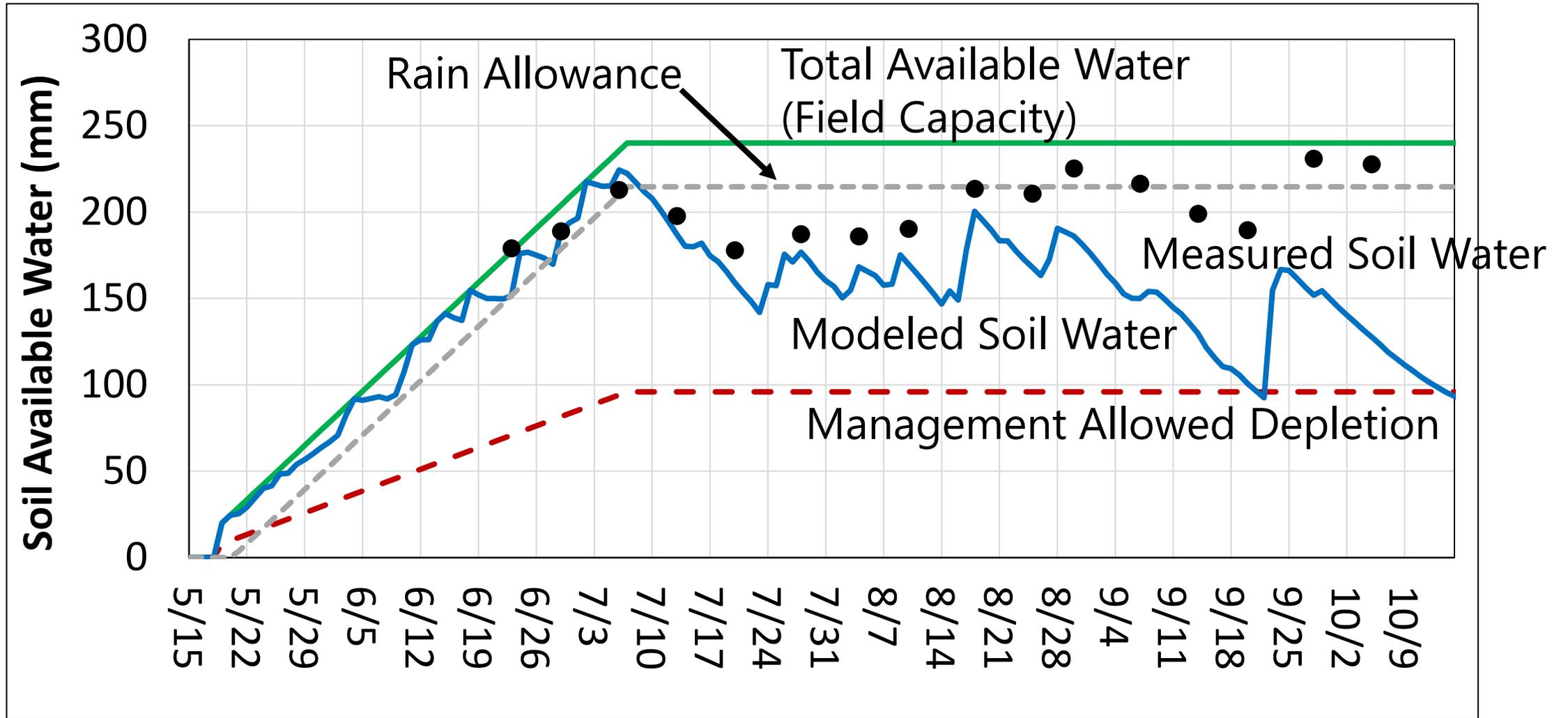
Combined Approaches



Checkbook Method



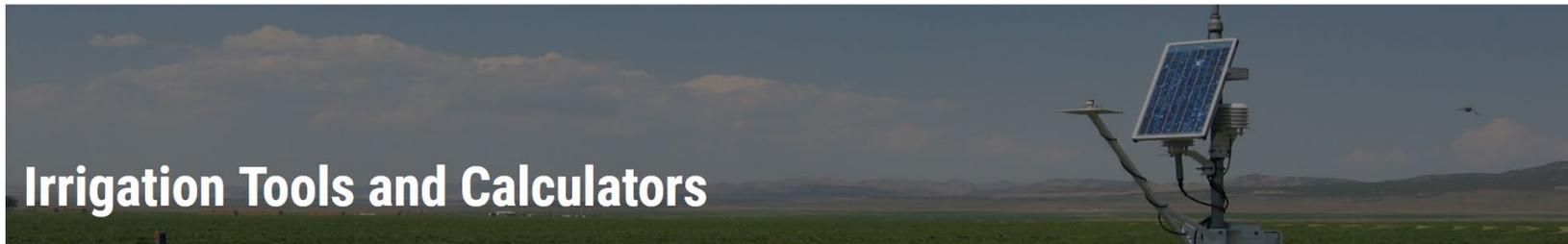
Combined Approaches



Weather Data and Precipitation



Resources



Web applications and tools for irrigation management, irrigation calculations, and irrigation decision support.

Irrigation Optimization Support Tool

[Irrigation Technology Cost/Benefit Analysis Calculator](#)

Web-based decision support tool developed by USU Extension Crops and Washington State University experts for estimating the benefits and costs of agricultural irrigation water management and equipment optimization improvements.

Irrigation Management Tools

[Irrigation Scheduler Mobile](#)

Web-based irrigation scheduling tool developed by Washington State University. USU agricultural and orchard electronic weather stations have been added to the tool for collection. The tool requires the user to create an AgWeatherNet (AWN) ID.

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