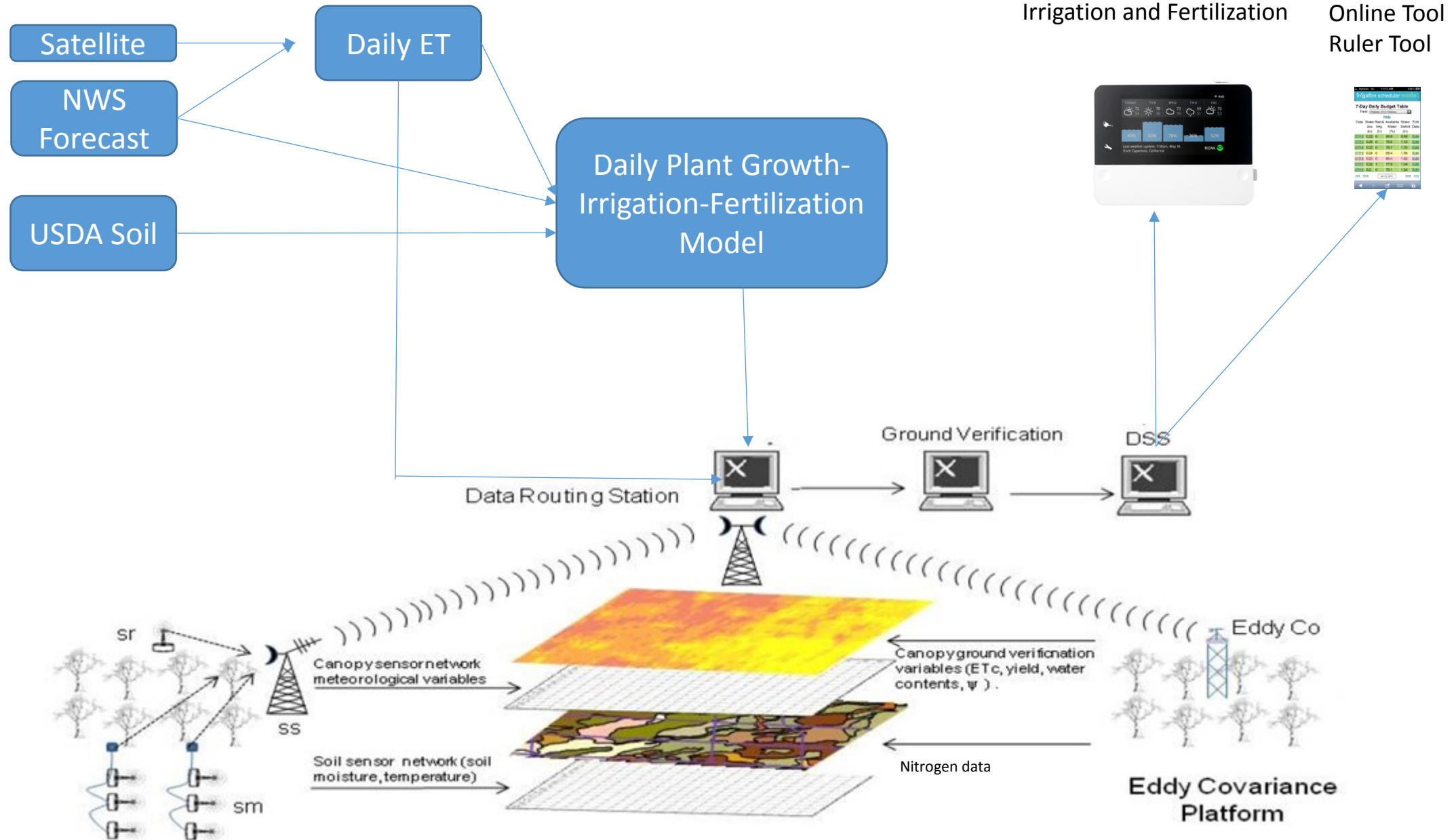
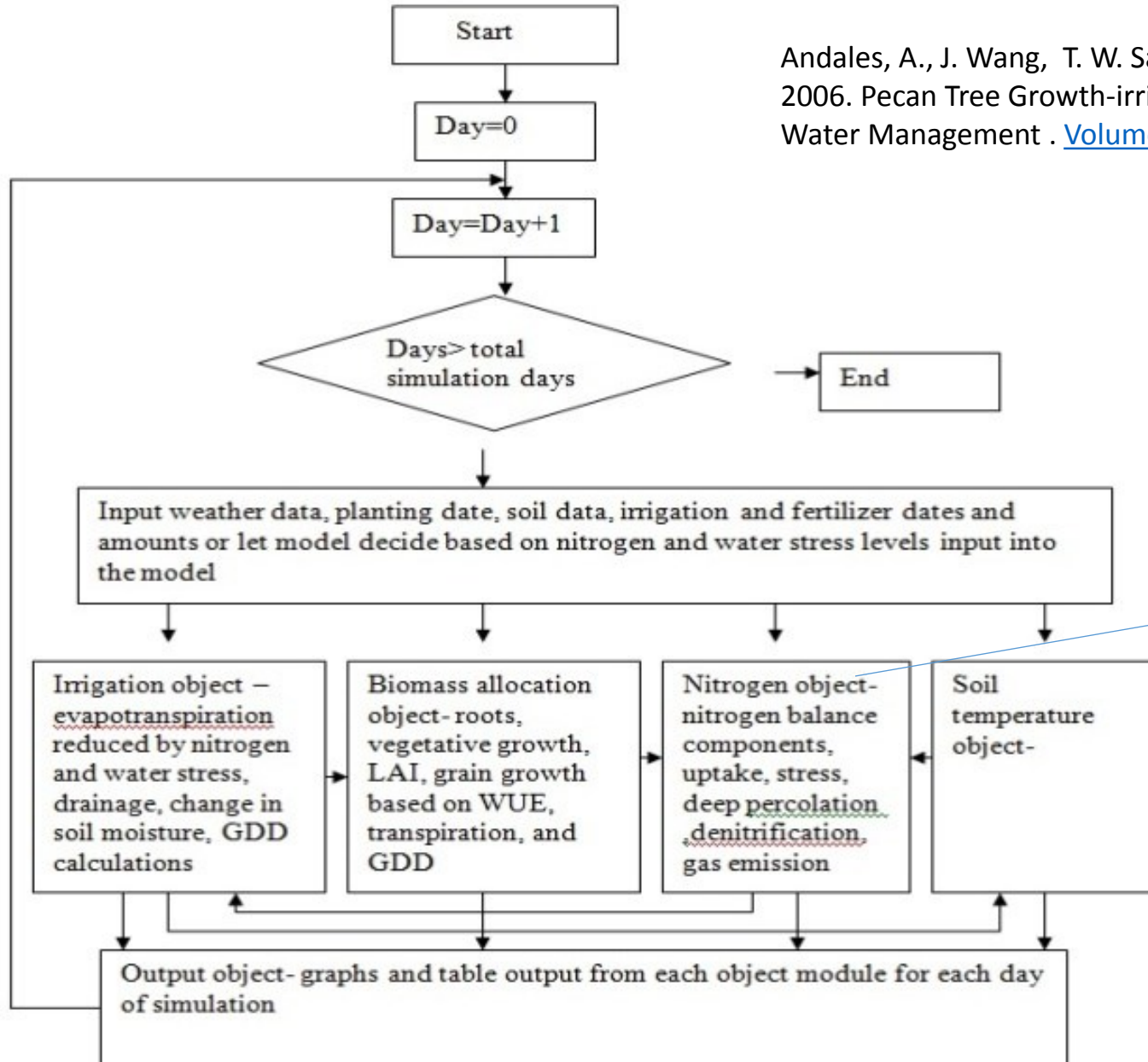


# Smart Irrigation and Fertilization Management System



# Daily Plant growth, irrigation, and fertilization model

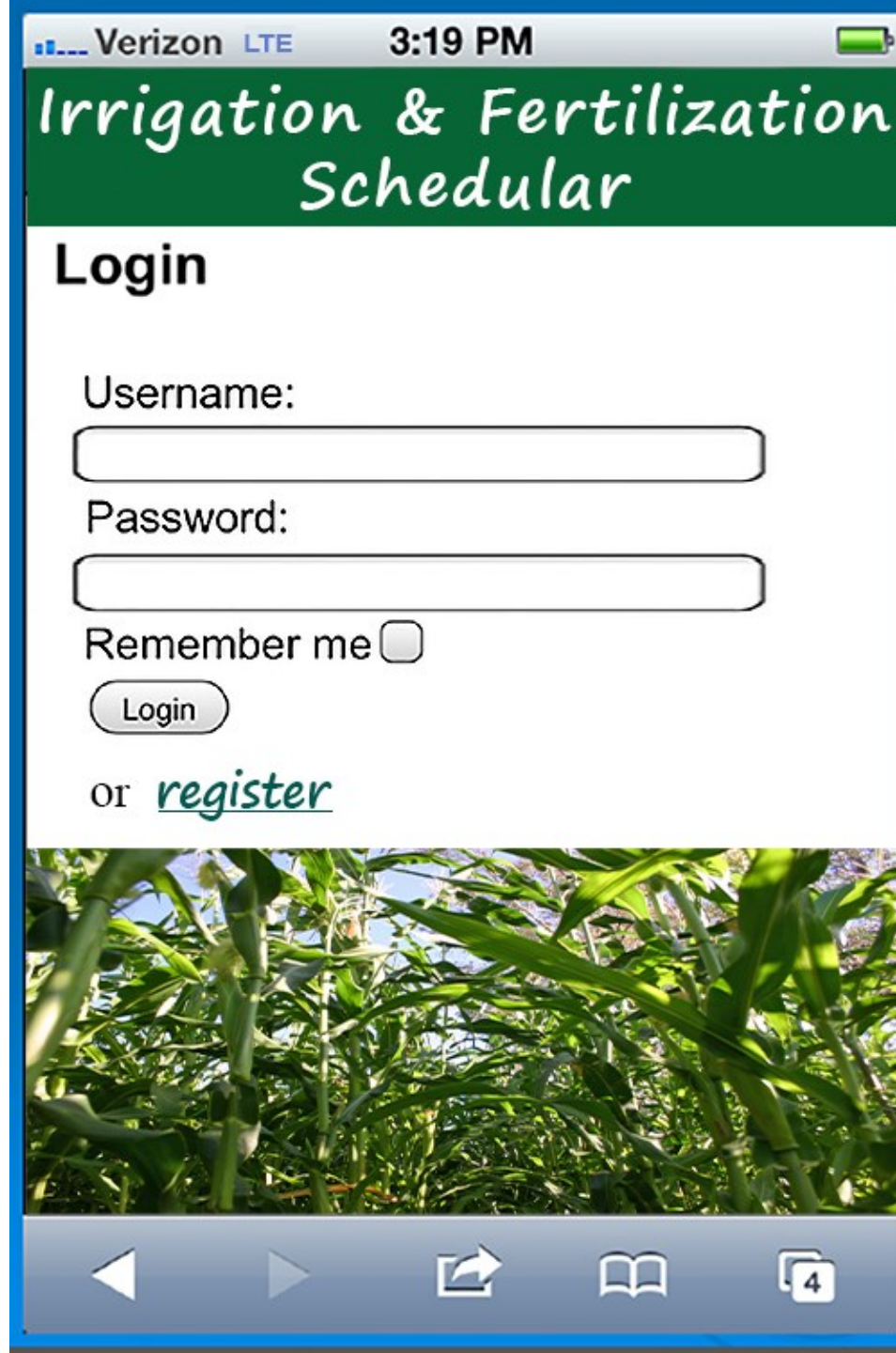
Andales, A., J. Wang, T. W. Sammis, J. G. Mexal, L. J. Simmons, and D. R. Miller, 2006. Pecan Tree Growth-irrigation-pruning Management Model. Agricultural Water Management . [Volume 84, Issues 1-2](#) , Pages 77-88.



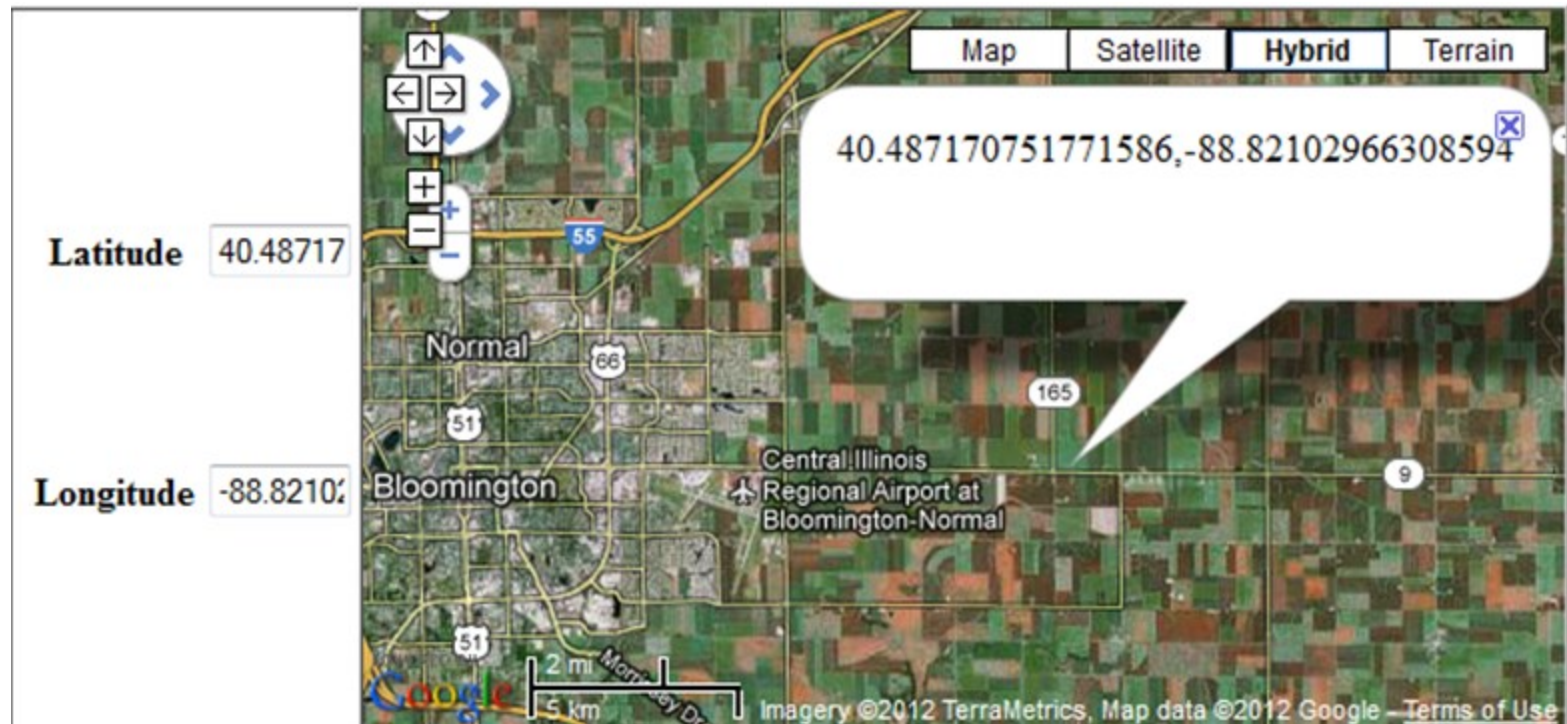
Nitrogen object calculates soil nitrogen availability and leaching, plant absorption, mineralization, denitrification, gas emission...etc

Example:  
Smartphone App

Example:  
Smartphone App



# Example: Smartphone App (choose a location)



Submit Query

## Example: Smartphone App

7-day future irrigation scheduling

Can be changed to fertilization scheduling

Date	Water use (in)	Water stress (%)	Rain (in)	Irrig. (in)
7/15	0.37	0	0.45	0.00
7/16	0.37	0	0	0.00
7/17	0.39	0	0	0.00
7/18	0.41	10	0	3.00
7/19	0.43	0	0	0.00
7/20	0.46	0	0	0.00
7/21	0.46	0	0	0.00

Example:  
Ruler Tool

# The "Pecanigator"

Last Irrigation

**The rainfall rule:**  
Add 1 day to the irrigation interval for every 1/2 inch of rainfall accumulated during the interval. Ignore if total rainfall accumulation is less than 1/2 inch. Always round to the next highest integer for rain increments greater than 1/2 inch.

13 20 27  
March

41 37 33  
April

35 31 27  
May

29 26 22  
June

22 20 17  
July

If you irrigated on this date:

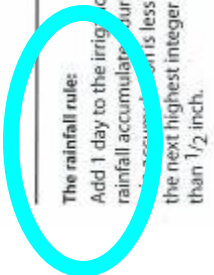
10 17 24 31 7  
July

Your next irrigation would be in:

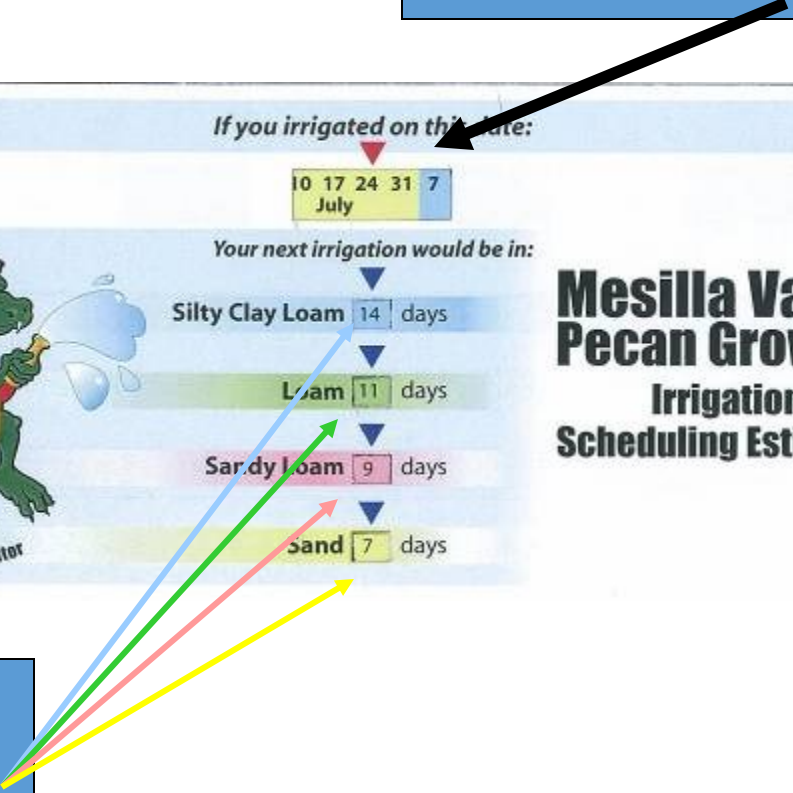
- Silty Clay Loam 14 days
- Loam 11 days
- Sandy loam 9 days
- Sand 7 days

**Mesilla Valley Pecan Growers Irrigation Scheduling Estimator**

This work was supported by the Rio Grande Basin Initiative, 'Efficient Irrigation for Water Conservation' agreement with the USDA Cooperative State Research, Education, and Extension Service under contract Nos. 2005-34461-15661 and 2005-4509-03209



Next Irrigation  
(by soil type)



# Example: Online Tool

You are here: » [NMSU](#) » [Agro Climate](#) » Pecan Irrigation



## Pecanigator Irrigation Scheduling Estimator: a Tool for Pecan Growers

Region:

Soil Type:

### Last Irrigation

Date (MM-DD-YYYY):  or click:  [Valid Date Range](#)

[Rainfall](#) in inches since last irrigation: