

CropManage Hands-on Workshop

Internet connection:

Wifi Network: ABBOTT-CONF-GUEST

Wifi key: 1428AGGUEST

Certified Crop Adviser Continuing Education Units (CEU)

Location: Monterey County Agricultural Conference Room

City, State: Salinas, CA

Tracking Number: CA 53229

Date: 2015-04-02 09:00 AM - 12:00 PM

Approved CEUs:

Nutrient Management: 1

Soil & Water Management: 1

Professional Development: 0.5

Acknowledgements:

Richard Smith and Tim Hartz

UC ANR programming staff (Bryon Noel, Dave Krause, Marcelo Gachet)

CDFA-Fertilizer Research Education Program

CA Dept of Water Resources

UC Division of Agriculture and Natural Resources

Monterey Co. RCD

Growers and Shippers

**Thank you to Wilbur Ellis Co. for
Sponsoring Refreshments!**

CropManage Hands on Workshop

8:30 – 9:00 *Registration and Refreshments*

9:00 – 9:30 *Introduction*

9:30-10:15 *Getting started (Setting up ranches and plantings)*

10:15 (Break)

10:30 – 11:15 *Using CropManage for decision support and record keeping*

11:15- 11:45 *Navigating around and advanced features*

11:45-12:00 *Discussion of new features or changes needed (Bryon Noel).*

Tools for Managing Water and Nitrogen Fertilizer in Vegetables

- Soil nitrate quick test
- Weather-based irrigation scheduling



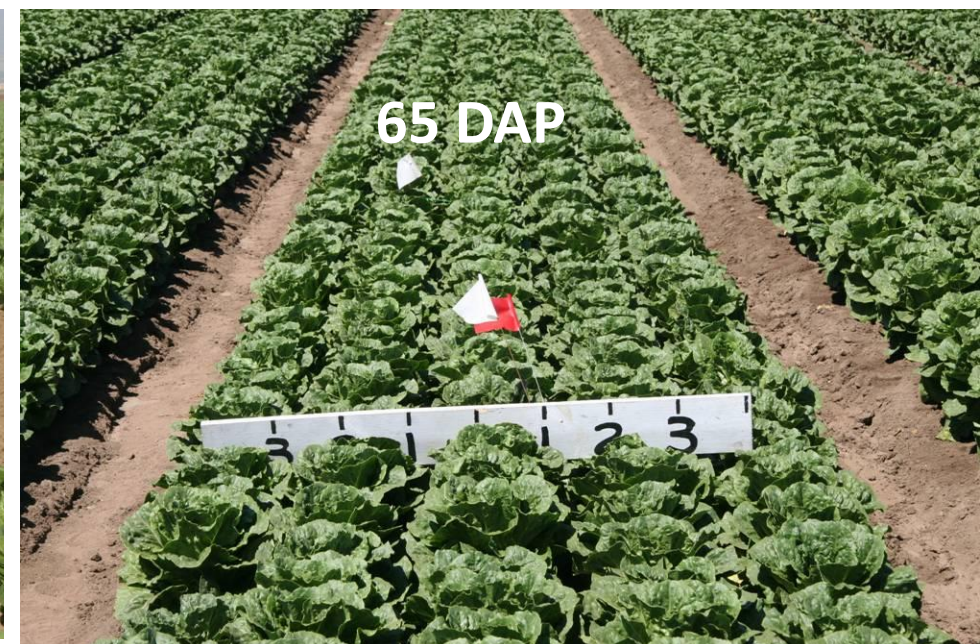
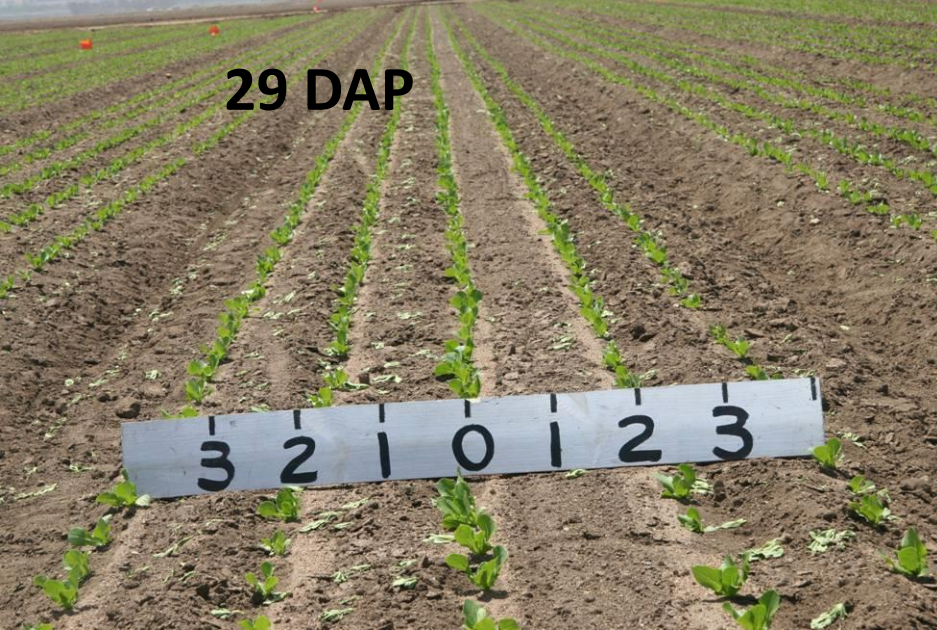
Weather-based irrigation scheduling



Converting Reference ET to
Crop ET:

$$\mathbf{ET}_{\text{crop}} = \mathbf{ET}_{\text{ref}} \times \mathbf{K}_{\text{crop}}$$

\mathbf{K}_c can vary from 0.1 to 1.2



Web-based Irrigation and N management software for lettuce

<https://ucanr.edu/cropmanage>

CropManage

About CropManage

Login

To login enter your e-mail and password below.

E-mail Address

mdcahn@ucdavis.edu



Password

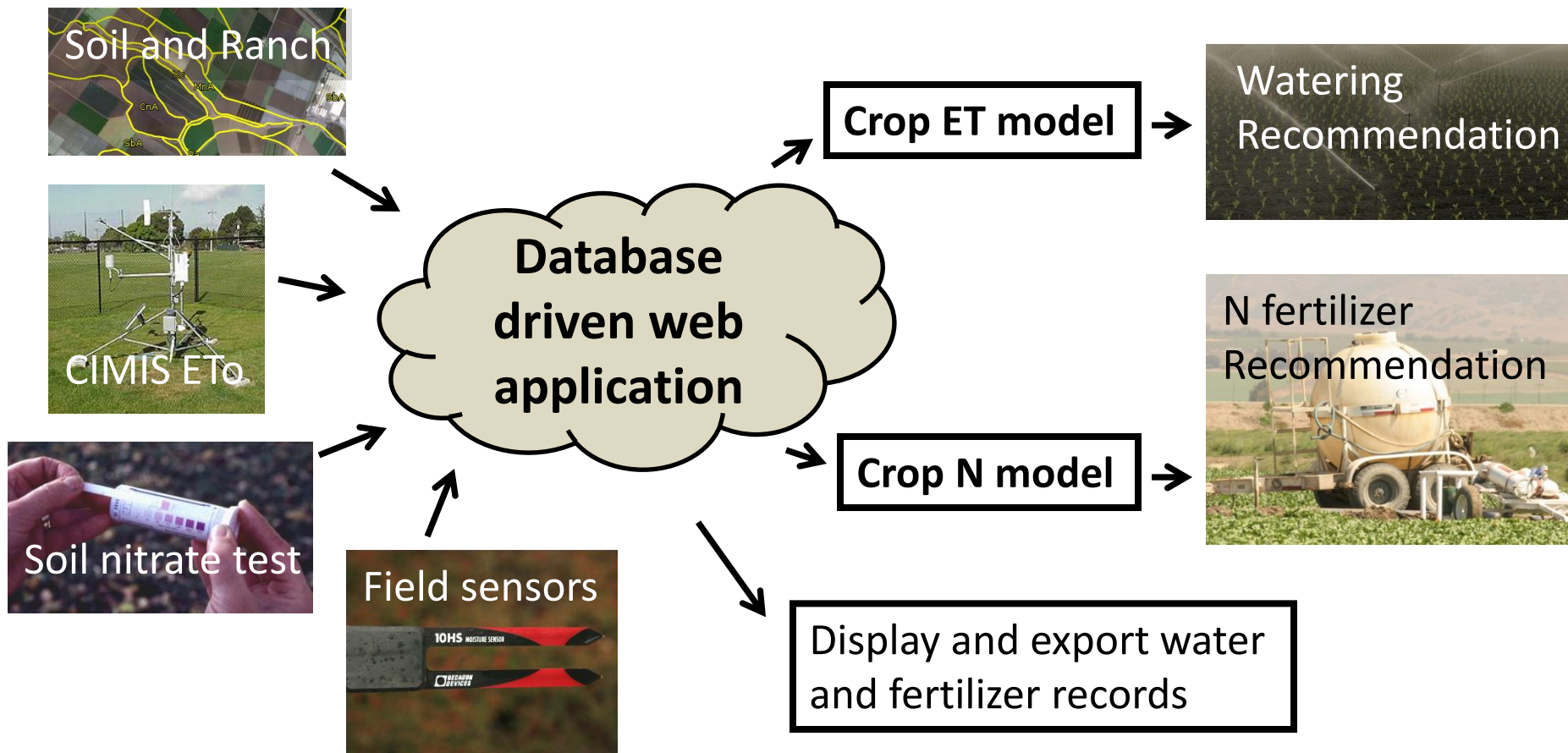
Password

Login

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Integrate information from multiple sources



Decision support using crop models

Current crops supported

Vegetables:

Romaine (40 and 80-inch wide beds)

Iceberg (40 and 80-inch wide beds)

Broccoli (summer and winter plantings)

Cauliflower (summer and winter plantings)

Cabbage (red and green)

Spinach*

Celery*

Onions*

Berries:

Strawberry

Raspberry*

Blackberry*

UC Security and Privacy Policy

1. CropManage is designed to protect the privacy of grower data.
2. Current industry security standards are used (backed up to 2 other servers, encryption, secure security socket layer).
3. UC does not give out/sell grower data and is not obligated to give out data.
4. UC will not analyze grower data without first asking for permission.

How is N fertilizer rate determined from the quick nitrate test?

Recommended

Fertilizer N = Future Crop N uptake

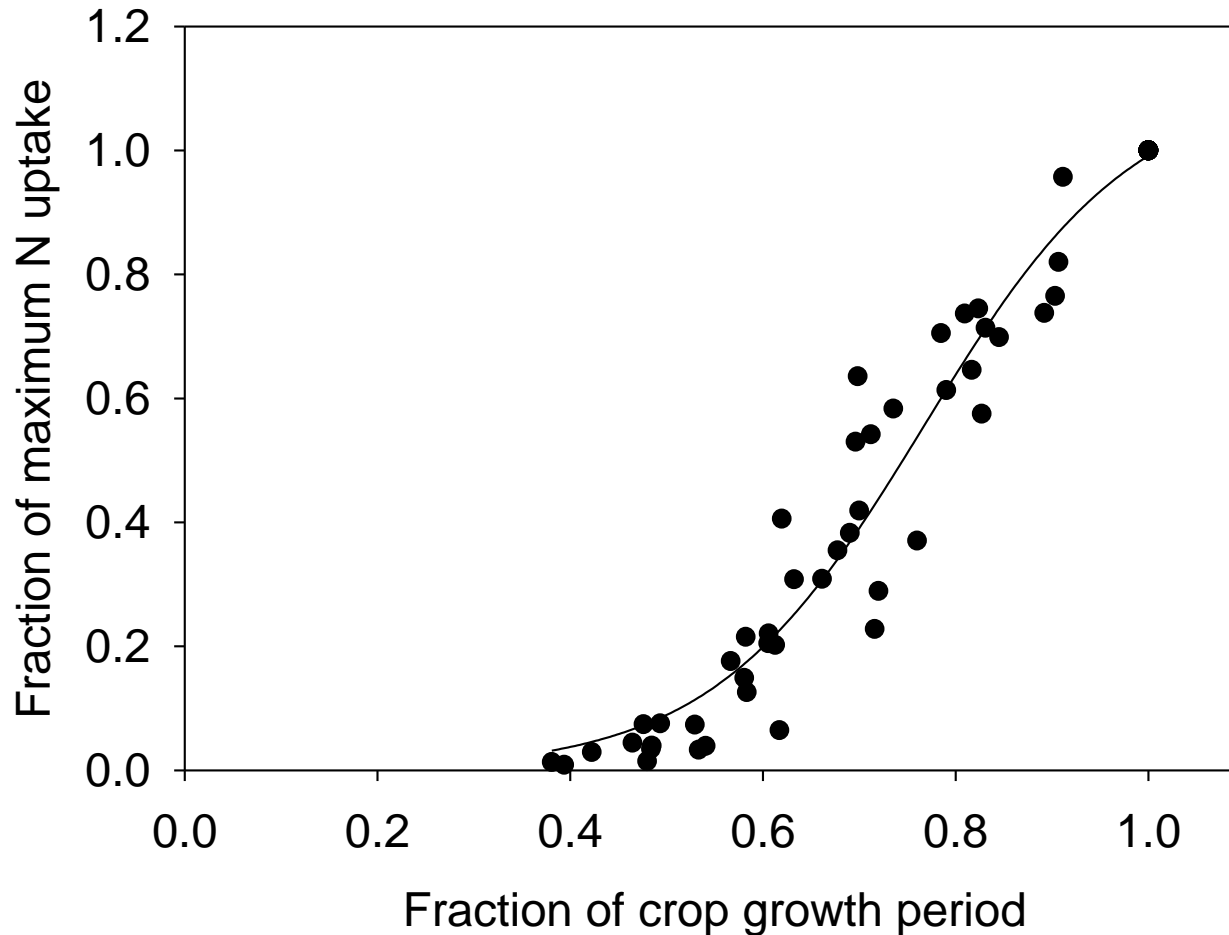
– (Quick Test N - threshold $\text{NO}_3\text{-N}$)

– Soil mineralization N

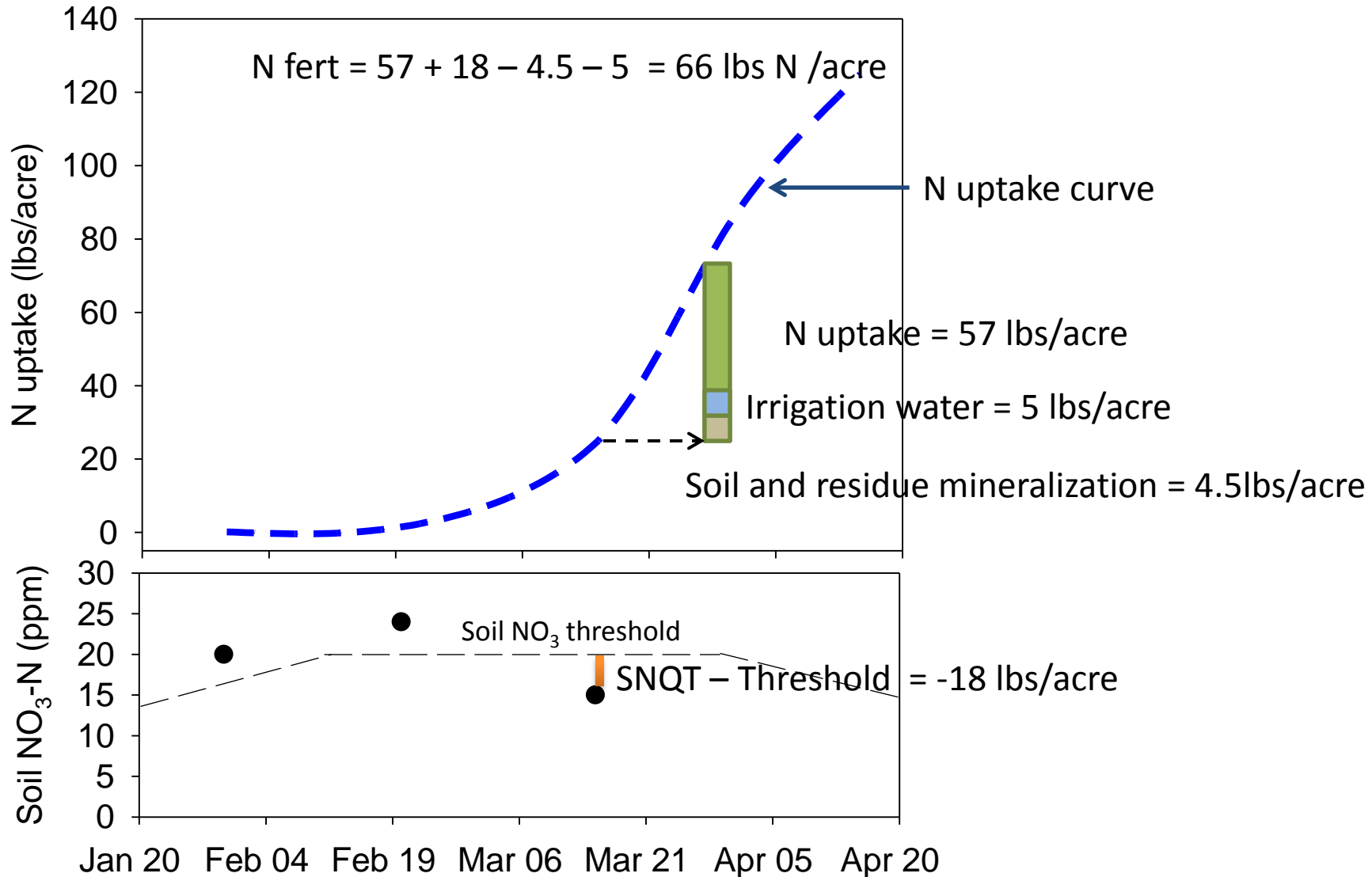
– Plant residue N

– N in irrigation water

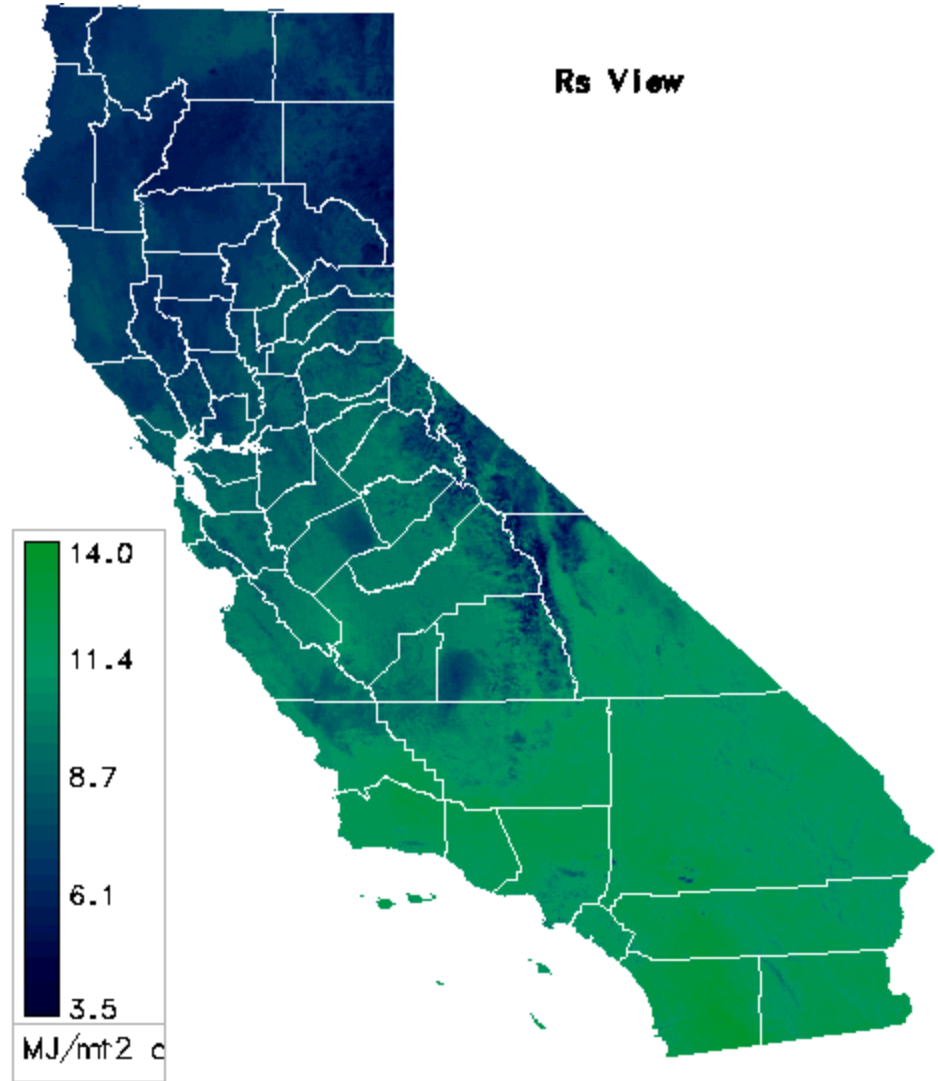
N uptake rate by head lettuce (40 inch-wide beds)



Nitrogen Fertilizer Recommendation



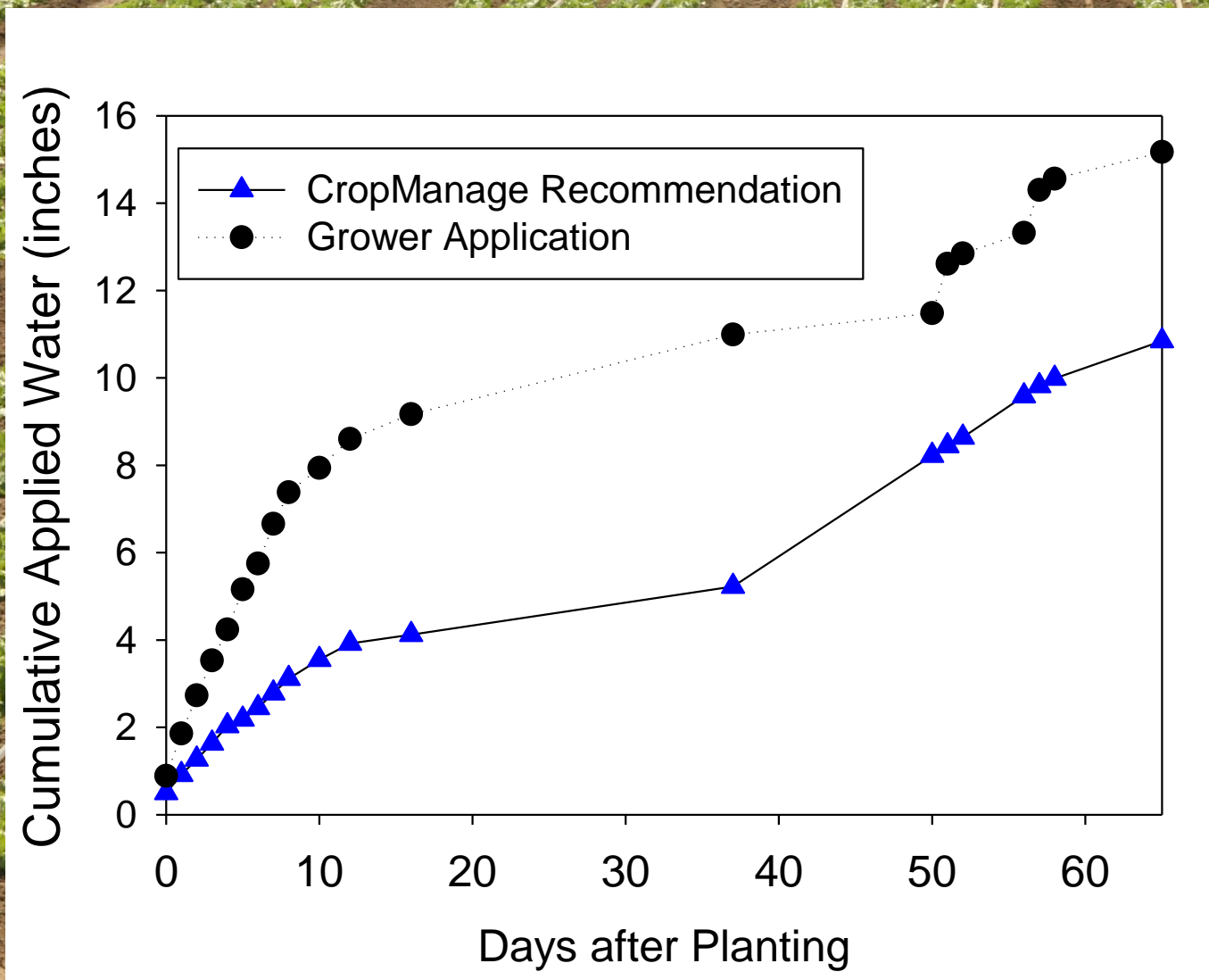
Spatial CIMIS ETo Reporting



How much water was applied?



Evaluate and Document Water Management



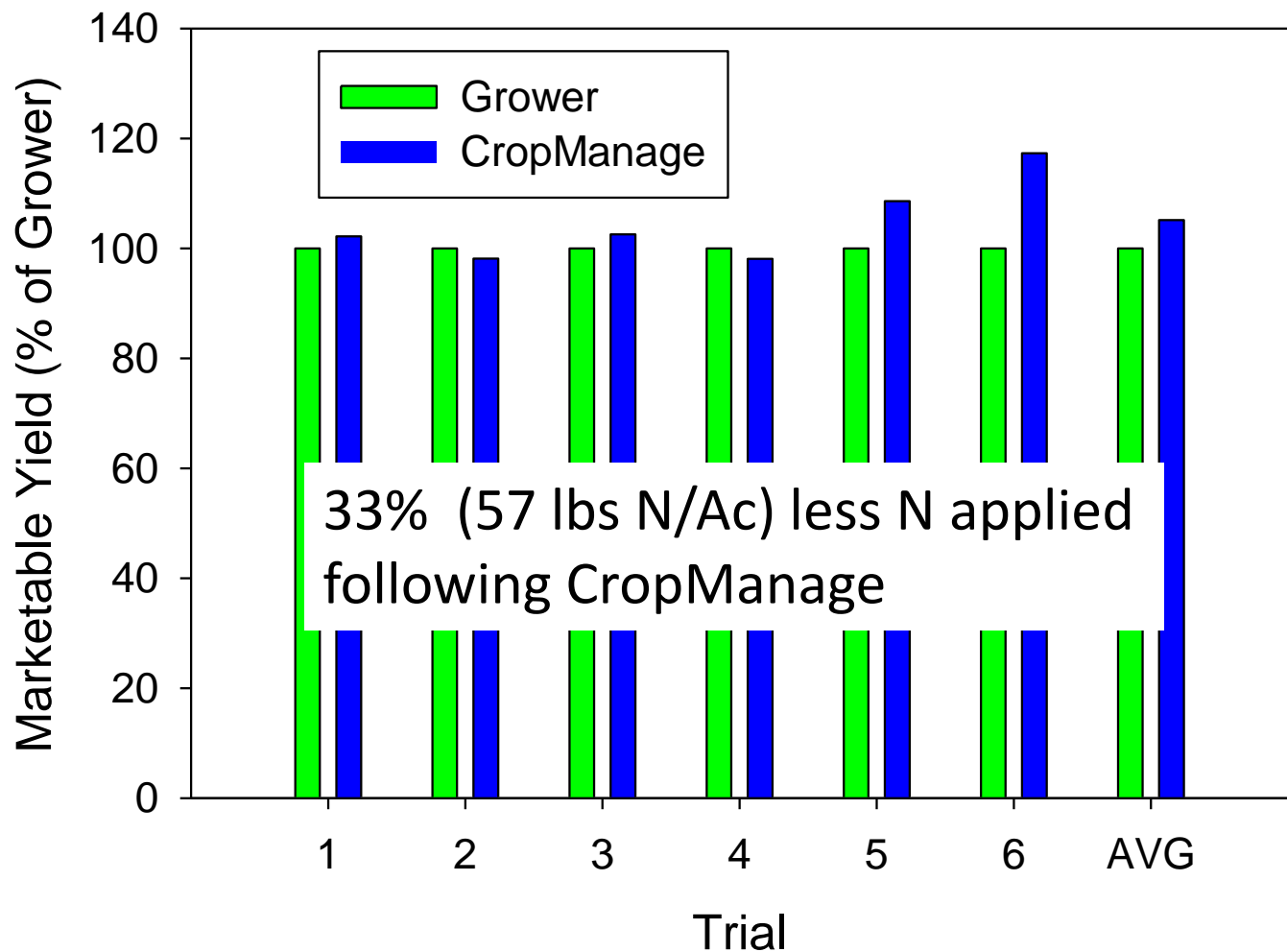
Soil moisture monitoring



Tensiometer readings recorded on Campbell Scientific 206 logger



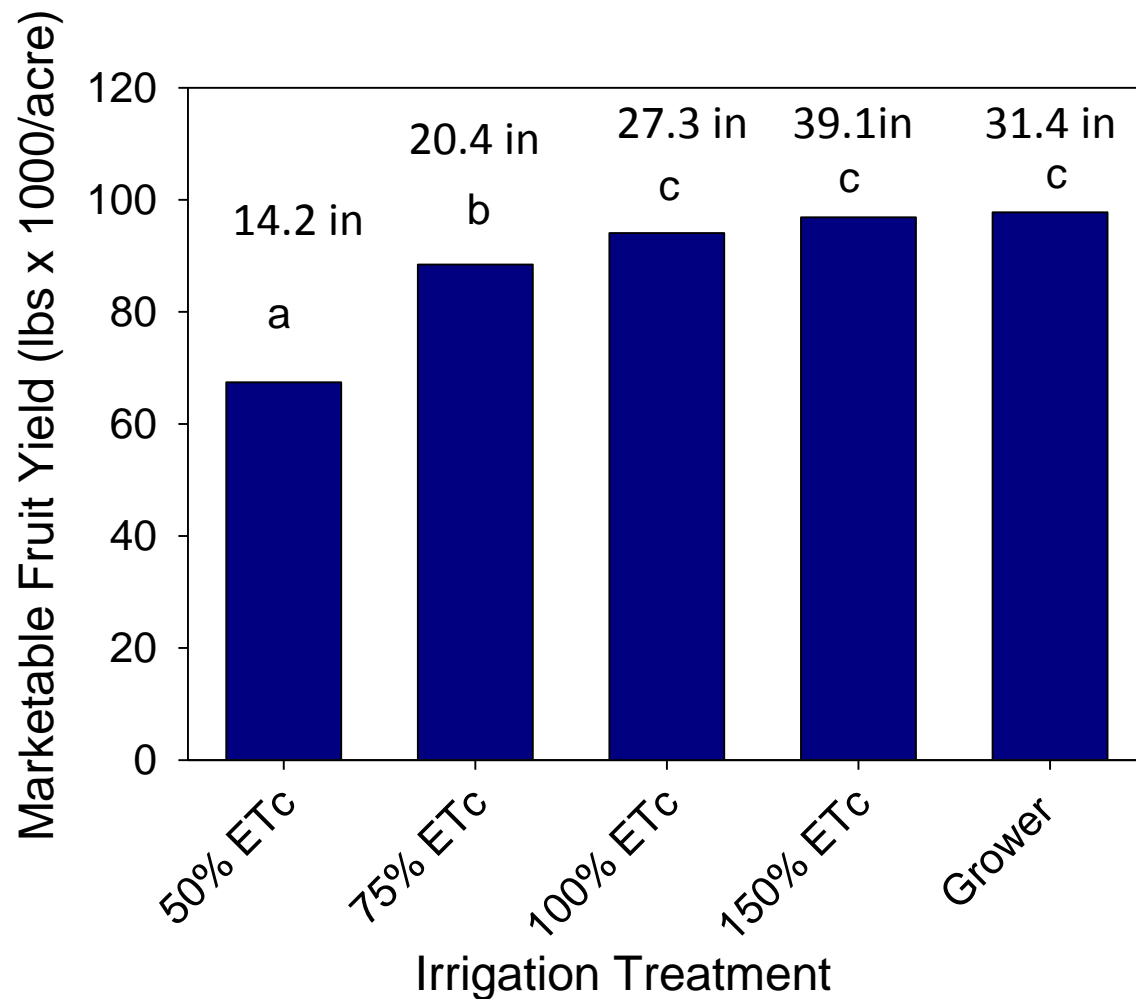
Summary of Commercial Lettuce Strip Trials (2012-2013)



Using weather based irrigation scheduling for broccoli

Irrigation Treatment	Applied water inches	Marketable Yield		
		Crown ----- lbs/acre -----	Bunch	Total
Grower Standard (150% ET)	20.4	6797	8289	15086
CropManage (100% ET)	14.2	6747	9522	16269
LSD _{0.05}		NS	1052	1061

Irrigation Effects on Marketable Fruit Yield (Strawberry)



The road ahead...



New version of CropManage under development



Microsoft .NET Framework

- Dedicated programmers for CM
- Better user-interface
- Faster speed
- More flexibility to support different types of commodities

Opportunities to partner with commercial companies by developing CM into a web service (API):



Steinbeck Country Produce, Inc.



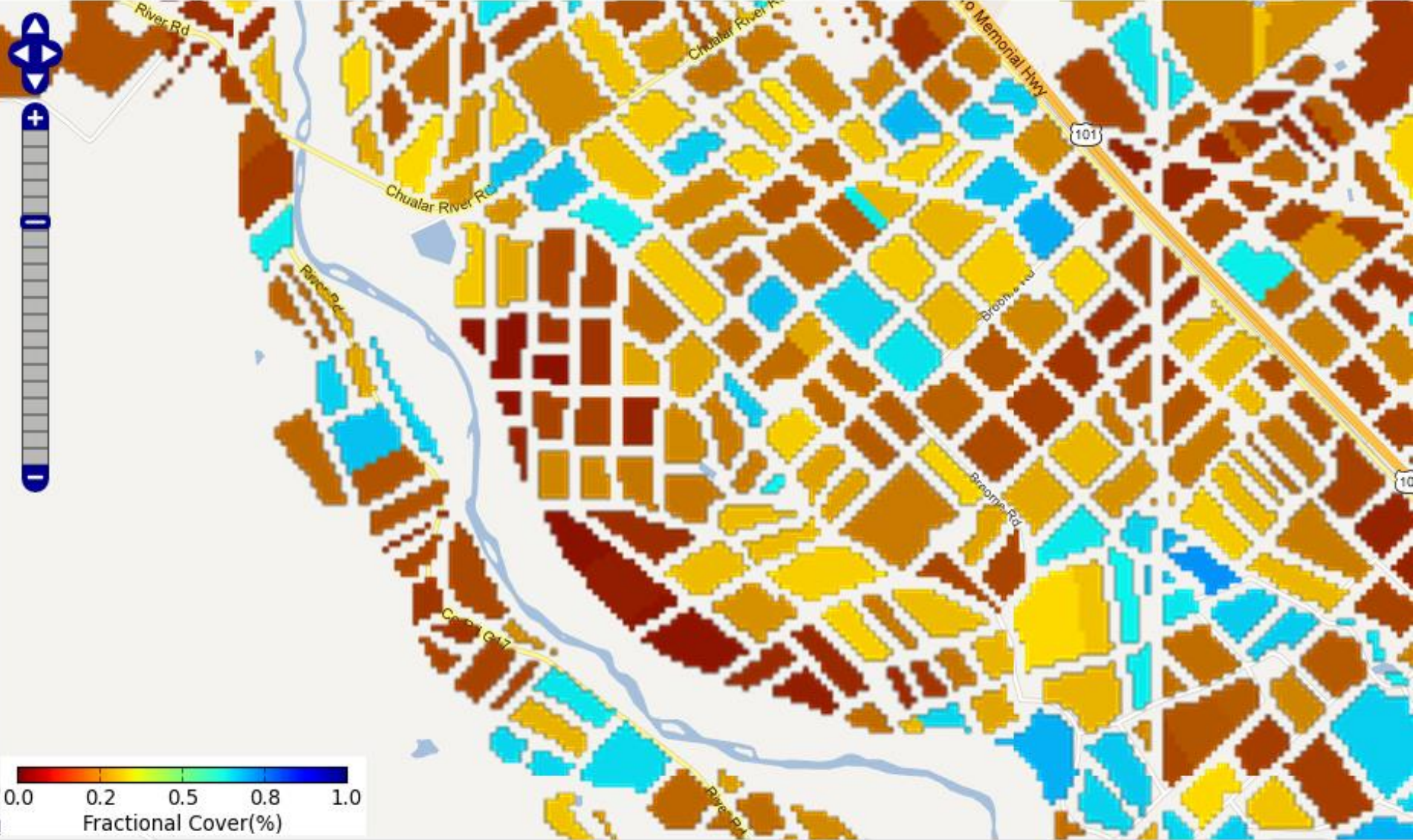
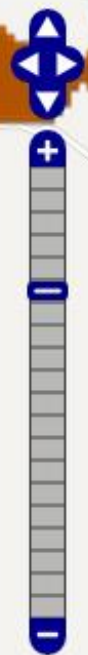


TOPS Satellite Irrigation Management Support

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N contribution from irrigation water?



Summary

- **Web applications can be useful for repackaging research results into simple to use decision support tools**
- ***CropManage* is designed to help growers improve water and N management and for assisting with research/demonstration trials.**
- **Opportunities exist for expanding CM to additional commodities and adding in new features and data sources.**

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