



About the California Almond Sustainability Program



Why a sustainability program?

To document and tell your story!

Need for transparency of production practices in the marketplace

Need for conveying accurate production information to public policy makers and regulatory agencies



Why a sustainability program?

To learn about and share practices
to improve production efficiencies

Optimize the efficient use of natural resources
(e.g., water, nutrients, energy)



Optimize the efficiency of field operations
(e.g., pest management, harvest)



Modules (Self-Assessment)

- Irrigation Management
- Nutrient Management
- Air Quality
- Energy Efficiency
- Pest Management
- Ecosystem Management
- Financial Management
- Workplace and Communities



Nutrient Management

		Not familiar with this	I haven't tried it	I have tried it	My current practice	Not applicable
For my orchard, I am using the following practices and/or technologies for maximizing nutrient management efficiency:						
SOURCE						
5	The following sources of nitrogen were utilized in this orchard in the past year. (Select all that apply):	a. commercial in-organic nitrogen fertilizer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		b. manure (not recommended for food safety reasons) <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		c. compost <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		d. nitrogen-fixing cover crops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	If compost, manure, or nitrogen-fixing cover crops were used, their nitrogen contribution to the crop was estimated and used in calculating the total nitrogen applied.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Practice or Metric	Your Selection	Use Statewide
	Irrigation Management Module		
	INTRODUCTION AND GENERAL INFORMATION - IRRIGATION MANAGEMENT		
	ORCHARD ESTABLISHMENT		
1	Were you involved in this orchard's establishment?		82.7 %
2	Soil maps (e.g., NRCS soil series or web soil survey) were used to identify potential variations in soil texture, salinity, water holding capacity, or other factors.		61.8 %
3	Aerial or satellite photos (e.g., Google Earth) were used to identify potential variations in soil texture, salinity, or other factors.		46.0 %
4	Yield maps from the previous crop (almonds or another crop) were used to identify potential variations in soil texture, salinity, or other factors.		45.4 %
5	A GPS map of soil characteristics using sensing technology (e.g., EC, Veris® or SIS) was made and used to identify potential variations in soil texture, salinity, or other factors.		15.2 %
6	Backhoe pits were dug or deep auger/core samples were taken (guided by the above and other observed factors) in strategic places to determine:		
	6a. texture (percent sand, clay, silt) or saturation percentage		67.4 %
	6b. compaction layers or other soil stratification		70.9 %
	6c. salinity		63.3 %
	6d. pH		68.3 %
	6e. soil organic matter		60.2 %
7	Deep ripping, slip plowing, or tree hole backhoe pits were dug to address drainage and/or compaction issues (preferably after first testing for these problems).		87.9 %
8	If suggested by soil sampling, soils were amended to adjust pH, sodicity, salinity, etc. during orchard development.		75.8 %

Participation in Self-Assessment

Individual Participants.....	1,425
Organizations Represented by Assessments....	565
Orchards Assessed.....	788
Acres Assessed.....	156,309
Acres Managed by Organizations Represented by Assessments.....	401,365



2014 Almond Sustainability Report



Strategic Communications

SUSTAINABILITY PROGRAM SUPPORTS RESPONSE TO MEDIA INQUIRIES

[Share](#) 0
 [Tweet](#) 0
 [Pinterest](#) 0
 [googleplus](#) 0
 [Email](#) 0

Nov. 17, 2014

Data on almond growers' irrigation practices gleaned from the California Almond Sustainability Program's (CASP) 2014 Almond Sustainability Report have helped shape the almond industry's response to questions about almond water use during this drought year.

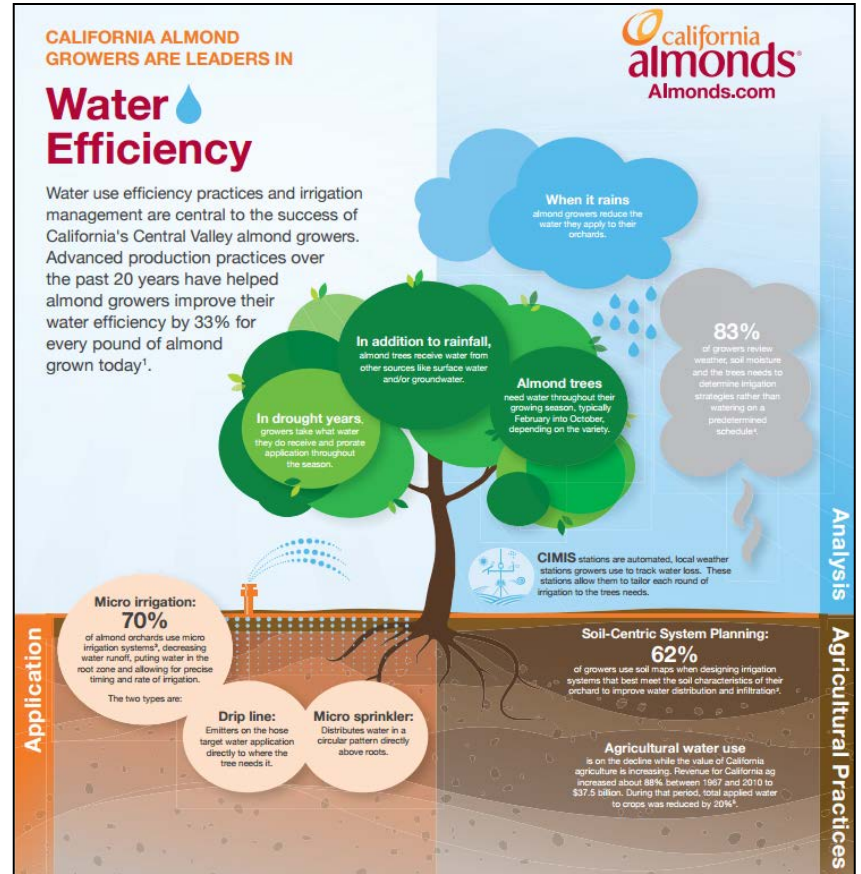
Western FARM PRESS
 TIMELY RELIABLE INFORMATION
 FOR WESTERN AGRICULTURE

[Home](#)
[Cotton](#)
[Alfalfa](#)
[Grapes](#)
[Tree Nuts](#)
[Vegetables](#)
[Orchard Crops](#)
[Rice](#)
[Irrigation](#)

HOME > TREE NUTS > NEW ONLINE TOOLS HELP ALMOND GROWERS IMPROVE N EFFICIENCY, COMPLY WITH REGULATIONS

New online tools help almond growers improve N efficiency, comply with regulations

Gabriele Ludwig, Associate Director, Environmental Affairs, Almond Board of California *Mar 29, 2015*



Past Targeted Education Workshops

Series 1: Water and Nutrient Management

NORTH VALLEY	CENTRAL VALLEY	SOUTH VALLEY
February 26 - Oroville Butte County Farm Bureau 2580 Feather River Blvd.	March 5 - Modesto Stanislaus County Ag Center 3800 Cornucopia Way	March 12 - Visalia Visalia Convention Center 303 E. Acequia Ave.
February 27 - Woodland Hampton Inn & Suites 2060 Freeway Dr.	March 10 - Merced Hampton Inn & Suites 225 S. Parsons Ave.	March 13 - Bakersfield Kern County Farm & Home Advisors 1031 S. Mount Vernon Ave.

Series 2: Pest & Honey Bee Management

NORTH VALLEY	CENTRAL VALLEY	SOUTH VALLEY
April 6 - Oroville Butte County Farm Bureau 2580 Feather River Blvd.	April 9 - Modesto Stanislaus County Ag Center 3800 Cornucopia Way	March 18 - Bakersfield Kern County Farm & Home Advisors 1031 S. Mount Vernon Ave.
April 7 - Woodland Norton Hall 70 Cottonwood St.	April 14 - Merced Hampton Inn & Suites 225 S. Parsons Ave.	March 19 - Visalia Visalia Convention Center 303 E. Acequia Ave.

ALL
GLOBAL UPDATE
HANDLE
LEGISLATIVE REPORT
OUTLOOK

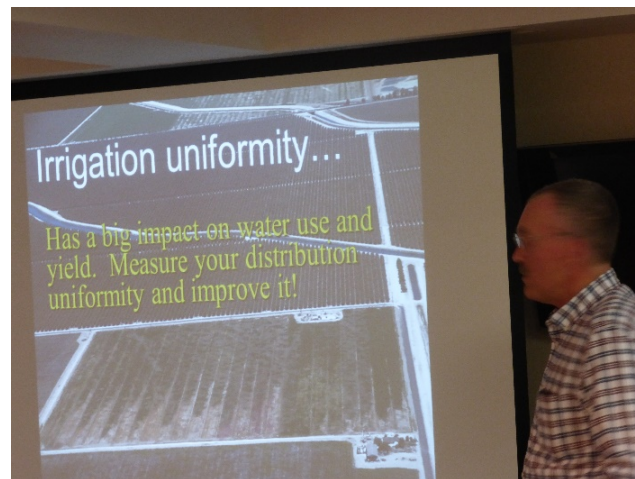
INDUSTRY EXPERTS FEATURED AT ABC WORKSHOPS

Share 0
Tweet 4
Pinterest 0
googleplus 0
Email 0



Feb. 26, 2015

Experts including farm advisors and Almond Board researchers will share the latest news and research at three consecutive workshops in the northern, central and southern almond growing regions. The first workshop at each location will focus on [nutrients and water](#), the second on bee care and pest management and the final workshop will feature air quality and energy efficiency.



Decision-Support and Compliance Tools

Nitrogen Budget Work Flow

PRE-SEASON THROUGH EARLY SPRING

- Enter Kernel Yield Estimate
- Enter N Credits
- Enter Fertilizer App(s)
- Show N Management Plan Report

FRUIT GROWTH

- Revise Kernel Yield Estimate
- Revise N Credits
- Enter Early Leaf Sampling Results
- Enter Fertilizer App(s)

KERNEL FILL

- Revise Kernel Yield Estimate
- Revise N Credits
- Enter Fertilizer App(s)

FRUIT MATURITY OR EARLY POST HARVEST

- Enter Actual Kernel Yield
- Enter Actual Irrigation N Credit
- Enter Fertilizer App(s)
- Show N Management Plan Report

Illustrations courtesy of D. Geiseler, CDFA Fertilizer and Research Education Program (FREP) for Almond Nitrogen Fertilization Guidelines

Crop Year: 2015 Orchard: McHenry Ranch Organization: ABC Orchards Business: ABC Orchards

Timing

Stage	Recommended (lbs N/Acre)	Applied (lbs N/Acre)
Early Spring	~50	~45
Fruit Growth	~85	~90
Kernel Fill	~70	~65
Fruit Maturity or Early Post-Harvest	~45	~35

Cumulative

Stage	Recommended Cumulative (lbs N/Acre)	Applied Cumulative (lbs N/Acre)
Early Spring	~50	~45
Fruit Growth	~135	~135
Kernel Fill	~205	~200
Fruit Maturity or Early Post-Harvest	~250	~235

Kernel Yield | Irrigation N Credit | Manure N Credit | Compost N Credit | Cover Crop N Credit | Other N Credits | Fertilizer Application | Leaf Factor | Water Coalition Information

Save Budget | Close Budget | Delete Budget | Next Tab

Enter pounds of kernels per acre for each growth stage. Click Refresh Calculations to update N budget values. Scroll down.

Pre-Application Predicted Kernel Yield

Last year's yield (or this year's pre-application predicted yield): 3000

2 years ago yield: []

3 years ago yield: []

Reports

- Show PDF Summary
- Download CSV File
- Show Nitrogen Management Plan Report

Calculations Refresh Calculations

Kernel Yield

Pre-Application Predicted	3000 lbs/Acre
Pre-Harvest Estimated	2760 lbs/Acre
Post-Harvest Actual	2800 lbs/Acre

Crop Nitrogen Demand Based on Yield

By Pre-Application Predicted	204 lbs N/Acre
By Pre-Harvest Estimated	187 lbs N/Acre

NITROGEN MANAGEMENT PLAN WORKSHEET			
1. Crop Year (Harvested):	2015	4. APN(s)	5. Field(s) ID
2. Member ID #:	ID for Coalition	000-22-1123 123-456-478	McHenry Ranch
3. Name:	Jessie A Santos		
CROP NITROGEN MANAGEMENT PLANNING		N APPLICATION	
6. Crop	Almonds	17. Nitrogen Fertilizer	
7. Production Unit	Pounds (kernel)	18. Dry/Liquid (lbs/ac)	
8. Projected Yield (Units/Acre)	3000	19. Foliar N (lbs/ac)	
9. N Recommended (lbs/ac)	291	20. Organic Material	
10. Acres	22	21. Available N in Moisture (lbs/ac estimate)	
Post Production Actuals		22. Total N Applied (lbs/ac)	
11. Actual Yield (Units/Acre)	2800	23. Nitrogen Credits	

Part D - Farm Map
(Keep Onsite - For Inspection Purposes Only)

Draw/Develop a map in the space below describing your farm operation including information such as parcel layout, crops grown, and irrigation infrastructure (wells, pipes, ditches, surface water discharge points, etc.). Update any well locations, field boundaries and surface water discharge points if they change in the future.

Legend

- X - In-Use Well Locations
- A - Known Abandoned Well Locations
- O - Observation/Monitoring well
- DP - Off Farm Surface Water Discharge Points (pipes, ditches, etc.)

Year: 2015 Coalition Member ID(x): ID for Coalition Member Name(x): Jessie A Santos

APN(s) 123-456-789
123-456-790

Almond Orchard(s) Orchard 1
Orchard 2

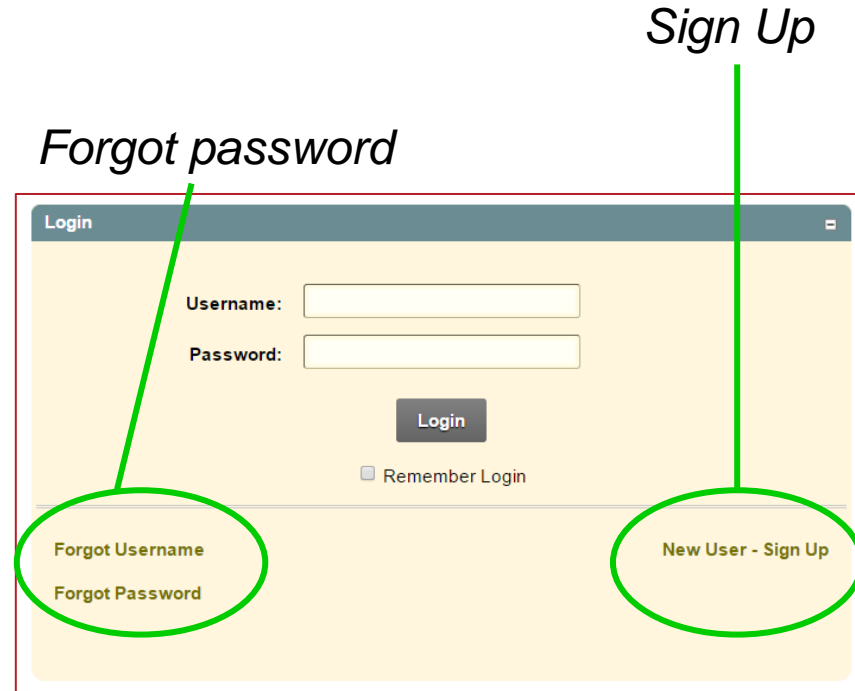
A close-up photograph of several green almonds on a branch, surrounded by vibrant green leaves. The background is softly blurred, showing more of the orchard. The lighting is bright and natural, highlighting the texture of the almond skins and the veins on the leaves.

How to Use CASP Online

Login at www.sustainablealmondgrowing.org





The screenshot shows the top of the website with a navigation bar. On the left is the 'CALIFORNIA ALMOND SUSTAINABILITY PROGRAM' logo. On the right is the 'california almonds' logo with 'Almond Board of California' below it. The main content area has a 'Login' form with 'Username:' and 'Password:' fields, a 'Login' button, and a 'Remember Login' checkbox. To the right of the form are four promotional buttons: 'Get a Username TODAY! SIGN UP! →', 'Almonds, Sustainability, & YOU VIDEO →', 'About CASP LEARN MORE →', and 'About Almond Nitrogen Budgeting LEARN MORE →'. At the bottom left of the form area are links for 'Forgot Username' and 'Forgot Password'. At the bottom right is a link for 'New User - Sign Up'.



This is an annotated version of the login page screenshot. A green circle highlights the 'Forgot Username' and 'Forgot Password' links. A green line points from the text 'Forgot password' to the 'Forgot Password' link. Another green circle highlights the 'New User - Sign Up' link, with a green line pointing from the text 'Sign Up' above it to this link.

Home Page



Home Events Assessments N Calculator Reports

Monday, November 23, 2015 Welcome back **Jessie A Santos!** (v1.6.5) [Provide Feedback](#) | [Need Help?](#) | [Logout](#)



Quick Links

- My N Budgeting
 - Add N Budget
 - HOW-TO
- My Assessments
 - Clone Assessments
 - Add an Orchard
- My Maps
 - HOW-TO
- My Profile
- My CEU Certificates
- My Documents**
 - Search Documents
 - Add New Document
 - Download Sample Documents
- Education Content**
 - Search Education Content
- Need help getting started?

News

Features of Latest Release:

Create ILRP: Part D - Farm Map & ILRP: Nitrogen Management Plan




[LINK](#) to My Maps help [LINK](#) to N Budget help

Upcoming Events

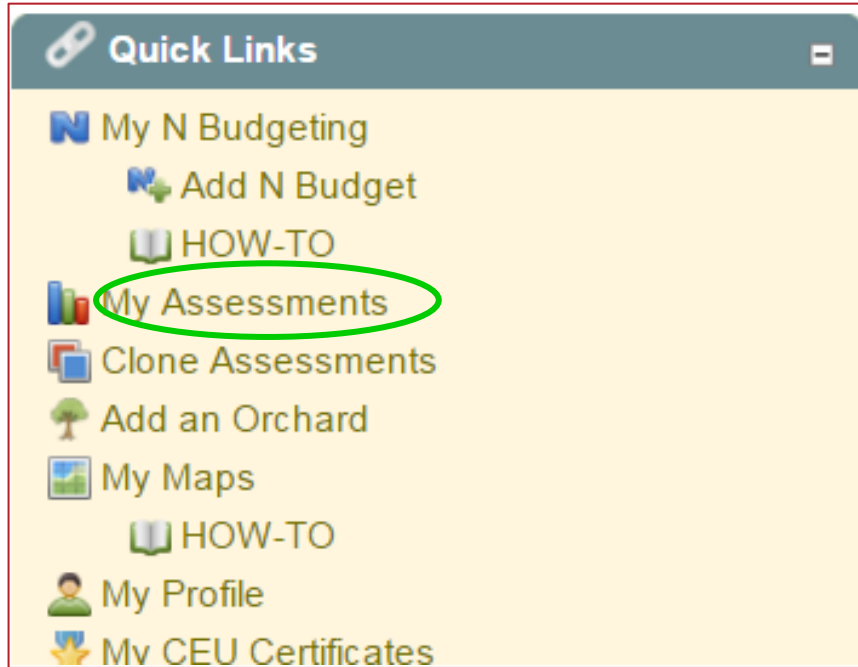
Events 1-1 of 1 [First](#) | [Previous](#) | [Next](#) | [Last](#)

12/08/2015 - 12/10/2015 - 2015 The Almond Conference [LEARN * CONNECT * EQUIP]
Located at Sacramento Convention Center, 1400 J St, Sacramento, CA 95814



[LINK](#) Almond Board Newsletters

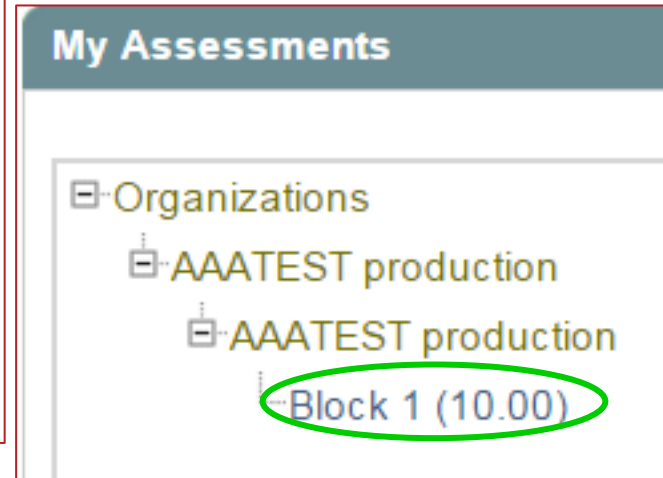
Completing Assessments



Quick Links

- My N Budgeting
 - Add N Budget
 - HOW-TO
- My Assessments**
- Clone Assessments
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- My Maps
 - HOW-TO
- My Profile
- My CEU Certificates



Select Orchard or Facility

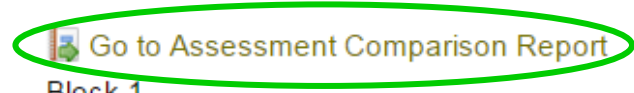


My Assessments

- Organizations
 - AAATEST production
 - AAATEST production
 - Block 1 (10.00)**

Entering Responses and Comparing Results

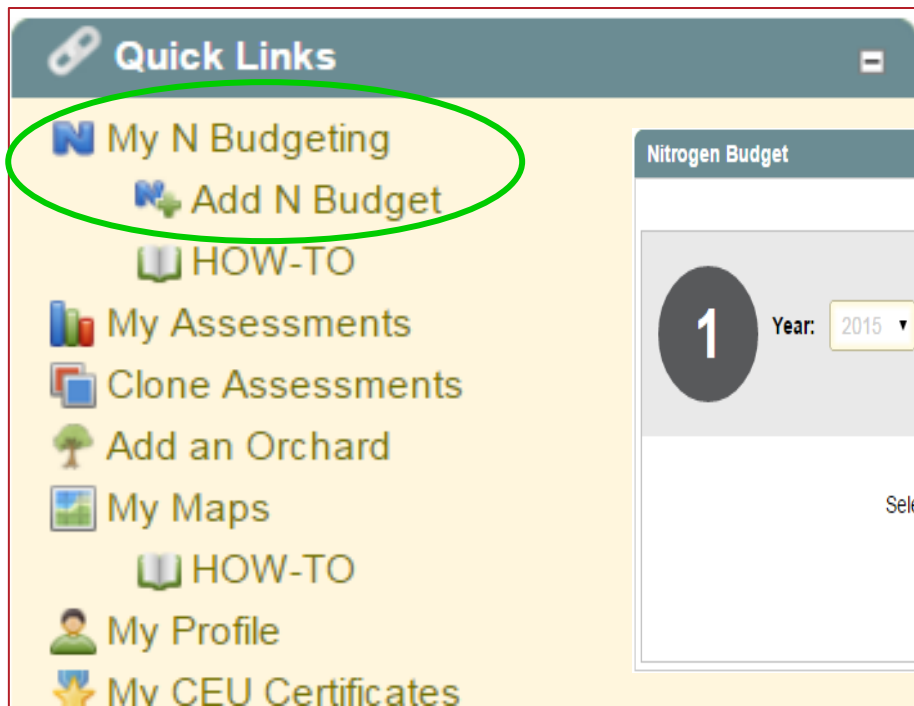
ORCHARD ESTABLISHMENT		
1	Were you involved in this orchard's establishment? <i>If No, click "No" and skip to question 16.</i>	<input type="radio"/> Yes <input type="radio"/> No 
2	Soil maps (e.g., NRCS soil series or web soil survey) were used to identify potential variations in soil texture, salinity, water holding capacity, or other factors.	<input type="radio"/> Not familiar with this <input type="radio"/> I didn't try it <input type="radio"/> Used this practice 



Name: Block 1
Type: Orchard
Organization: AAATEST production
Enterprise: AAATEST production

	Practice or Metric	Your Selection	Use Statewide
Irrigation Management Module			
INTRODUCTION AND GENERAL INFORMATION - IRRIGATION MANAGEMENT			
ORCHARD ESTABLISHMENT			
1	Were you involved in this orchard's establishment?		82.7 %
2	Soil maps (e.g., NRCS soil series or web soil survey) were used to identify potential variations in soil texture, salinity, water holding capacity, or other factors.		61.8 %
3	Aerial or satellite photos (e.g., Google Earth) were used to identify potential variations in soil texture, salinity, or other factors.		46.0 %
4	Yield maps from the previous crop (almonds or another crop) were used to identify potential variations in soil texture, salinity, or other factors.		45.4 %
5	A GPS map of soil characteristics using sensing technology (e.g., EC, Veris® or SIS) was made and used to identify potential variations in soil texture, salinity, or other factors.		15.2 %
6	Backhoe pits were dug or deep auger/core samples were taken (guided by the above and other observed factors) in strategic places to determine:		
	6a. texture (percent sand, clay, silt) or saturation percentage		67.4 %
	6b. compaction layers or other soil stratification		70.9 %
	6c. salinity		63.3 %
	6d. pH		68.3 %
	6e. soil organic matter		60.2 %

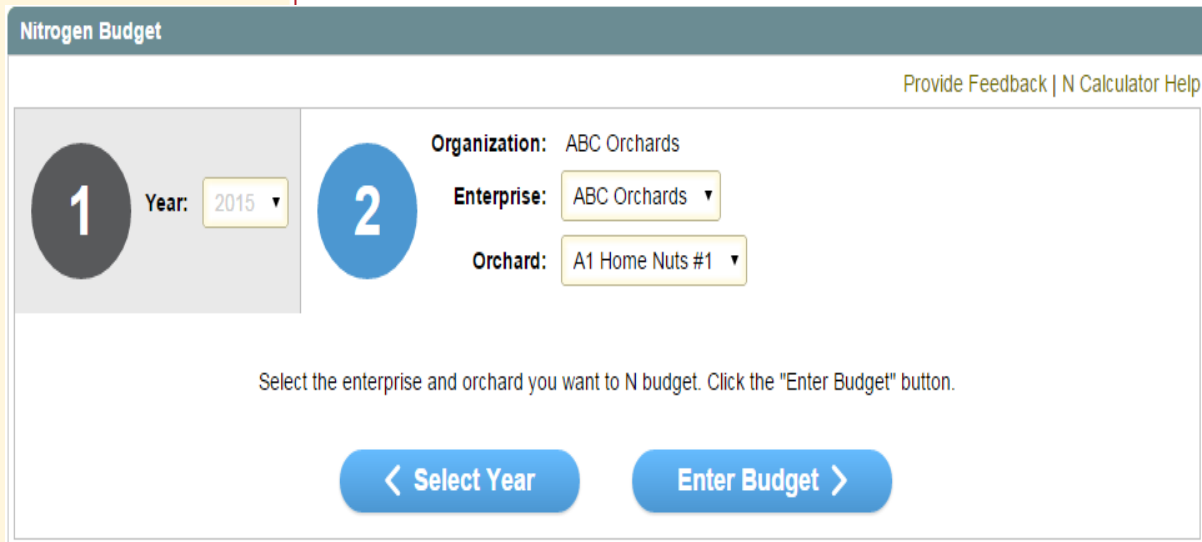
Nitrogen Calculator and Budgets



Quick Links

- My N Budgeting
- Add N Budget
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- Add an Orchard
- My Maps
- HOW-TO
- My Profile
- My CEU Certificates

Select Year and Orchard



Nitrogen Budget

Provide Feedback | N Calculator Help

1 Year: 2015

2 Organization: ABC Orchards
Enterprise: ABC Orchards
Orchard: A1 Home Nuts #1

Select the enterprise and orchard you want to N budget. Click the "Enter Budget" button.

< Select Year Enter Budget >

Using the Nitrogen Calculator

Nitrogen Budget Work Flow

PRE-SEASON THROUGH EARLY SPRING

- Enter Kernel Yield Estimate
- Enter N Credits
- Enter Fertilizer App'd
- Show N Management Plan Report

FRUIT GROWTH

- Review Kernel Yield Estimate
- Review N Credits
- Enter Early Leaf Sampling Results
- Enter Fertilizer App'd

KERNEL FILL

- Review Kernel Yield Estimate
- Review N Credits
- Enter Fertilizer App'd

FRUIT MATURITY OR EARLY POST HARVEST

- Enter Actual Kernel Yield
- Enter Actual Irrigation N Credit
- Enter Fertilizer App'd
- Show N Management Plan Report

Calculations courtesy of D. Geeson, USDA-Fertilizer and Research Education Program (FREP) for Almond Nitrogen Fertilization Guidelines

Crop Year: 2015 Orchard: McHenry Ranch Organization: ABC Orchards Business: ABC Orchards

Timing

Stage	Recommended (lbs N/Acre)	Applied (lbs N/Acre)
Early Spring	~60	~50
Fruit Growth	~80	~90
Kernel Fill	~70	~75
Fruit Maturity or Early Post Harvest	~50	~40

Cumulative

Stage	Total lbs N/Acre
Early Spring	~60
Fruit Growth	~140
Kernel Fill	~210
Fruit Maturity or Early Post Harvest	~260

Kernel Yield | Irrigation N-Credit | Manure N-Credit | Compost N-Credit | Cover Crop N-Credit | Other N-Credits | Fertilizer Application | Leaf Factor | Water Coalition Information

Save Budget | Close Budget | Delete Budget | Next > Tab

Enter pounds of kernels per acre for each growth stage. Click Refresh Calculations to update N Budget values. Scroll down.

Pre-Application Predicted Kernel Yield

Last year's yield (or this year's pre-application predicted yield):

3 years ago yield:

3 years ago yield:

Reports

- Show PDF Summary
- Download CSV File
- Show Nitrogen Management Plan Report

Calculations Refresh Calculations

Kernel Yield

Pre-Application Predicted	3000 lbs/Acre
Pre-Harvest Estimated	2750 lbs/Acre
Post-Harvest Actual	2800 lbs/Acre

Crop Nitrogen Demand Based on Yield

By Pre-Application Predicted	204 lbs N/Acre
By Pre-Harvest Estimated	187 lbs N/Acre

Enter Data (Save Optional)

Kernel Yield | **Irrigation N-Credit** | Manure N-Credit | Compost N-Credit | Cover Crop N-Credit | Other N-Credits | Fertilizer Application | Leaf Factor | Water Coalition Information

< Previous Tab | **Save Budget** | Close Budget | Delete Budget | Next > Tab

Estimate of Predicted Season's Irrigation Water Total:

Acre-in

Estimate of Irrigation from Groundwater:

Acre-in

Reports

- Show PDF Summary
- Download CSV File
- Show Nitrogen Management Plan Report


Calculations Refresh Calculations


Nitrogen Calculator and ILRP Nitrogen Management Plans


NITROGEN MANAGEMENT PLAN WORKSHEET				
1. Crop Year (Harvested):	2015	4. APN(s)	5. Field(s) ID	
2. Member ID #:	ID for Coalition	000-22-1123 123-456-478	McHenry Ranch	
3. Name:	Jessie A Santos			
CROP NITROGEN MANAGEMENT PLANNING		N APPLICATIONS/CREDITS	15. Recommended / Planned N	16. Actual N
6. Crop	Almonds	17. Nitrogen Fertilizers		
7. Production Unit	Pounds (kernel)	18. Dry/Liquid (lbs/ac)	290	258
8. Projected Yield (Units/Acre)	3000	19. Foliar N (lbs/ac)	0	0
9. N Recommended (lbs/ac)	291	20. Organic Material N		
10. Acres	22	21. Available N in Manure/Compost (lbs/ac estimate)	0	0
Post Production Actuals		22. Total N Applied (lbs per acre)	290	258
11. Actual Yield (Units/Acre)	2800	23. Nitrogen Credits (est)		


Farm Mapping


Quick Links


 My N Budgeting

 Add N Budget

 HOW-TO

 My Assessments


 Clone Assessments

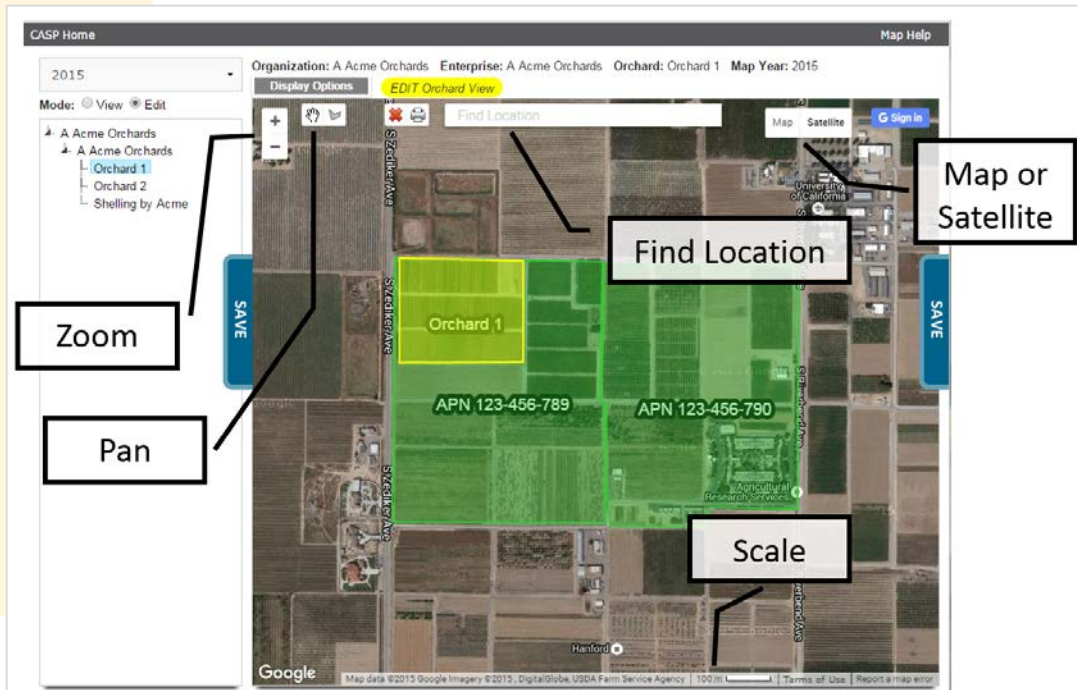
 Add an Orchard

 My Maps

 HOW-TO

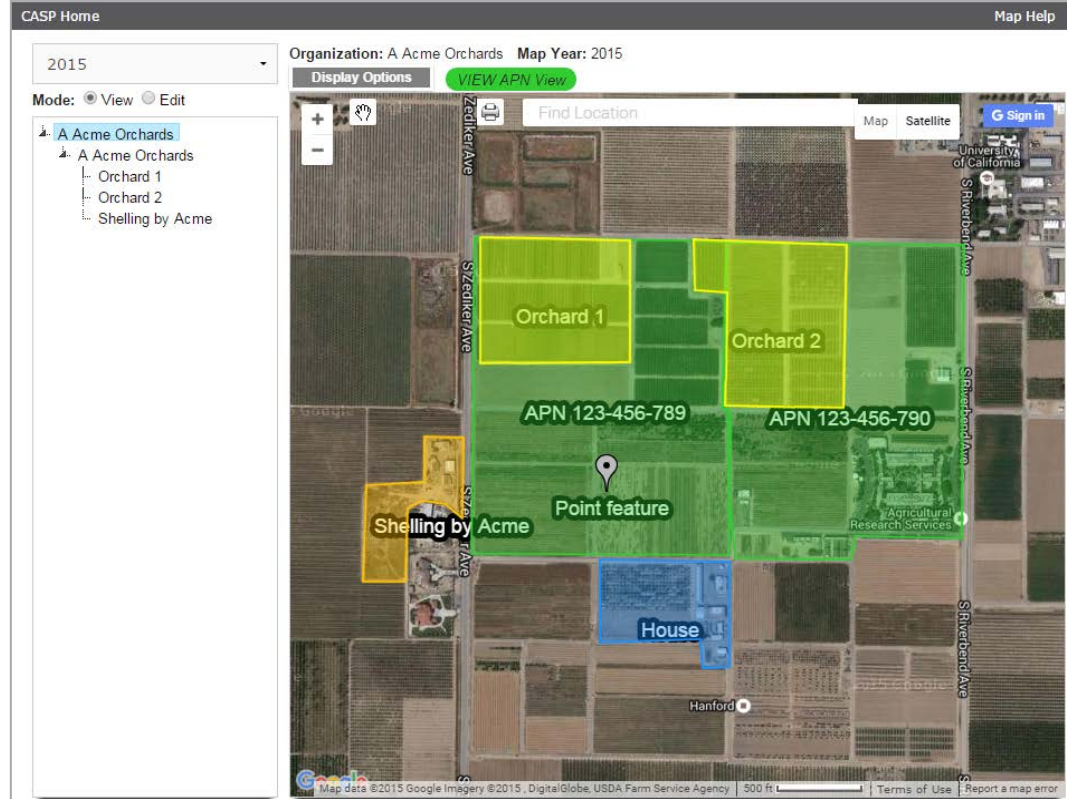
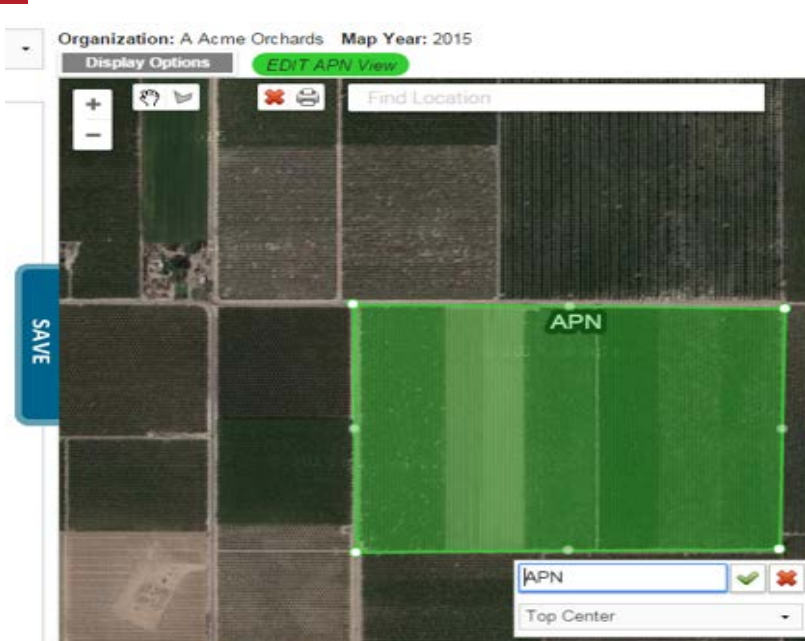
 My Profile

 My CEU Certificates



The screenshot shows the CASP Home interface for farm mapping. The top navigation bar includes "Organization: A Acme Orchards", "Enterprise: A Acme Orchards", "Orchard: Orchard 1", and "Map Year: 2015". The main map area displays a satellite view of a farm with two orchards highlighted in green, labeled "Orchard 1" and "Orchard 2", with APN numbers "APN 123-456-789" and "APN 123-456-790". The map is surrounded by a toolbar with various icons for navigation and editing. Callouts point to specific features: "Zoom" points to the zoom in (+) and zoom out (-) buttons; "Pan" points to the pan icon; "Find Location" points to the search bar; and "Scale" points to the scale bar at the bottom. A "Map or Satellite" callout points to the map and satellite toggle buttons. A "SAVE" button is visible on the right side of the map.

Map APNs, Orchards, Facilities and Ad Hoc Features



Farm Mapping and ILRP Part D – Farm Map

Part D - Farm Map
(Keep Onsite - For Inspection Purposes Only)

Draw/Develop a map in the space below describing your farm operation including information such as parcel layout, crops grown, and irrigation infrastructure (wells, pipes, ditches, surface water discharge points, etc.). Update any well locations, field boundaries and surface water discharge points if they change in the future.

Legend

- X - In-Use Well Locations
- A - Known Abandoned Well Locations
- O - Observation/Monitoring well
- DP - Off Farm Surface Water Discharge Points (pipes, ditches, etc.)

APN(s)	123-456-789 123-456-790
Almond Orchard(s)	Orchard 1 Orchard 2

Year: 2015 **Coalition Member ID(s):** ID for Coalition **Member Name(s):** Jessie A Santos

What's Next?

- Outreach to increase awareness and use of CASP features and tools.
- Continued use of CASP results for beneficial correspondence with media, buyers and regulators.
- Linking CASP and findings to grower incentives.
- Additional online decision-support tools (e.g., irrigation).
- Education via www.sustainablealmondgrowing.org and workshops to increase BMP adoption based on value and assessment results.



For help or more information:

CASP Helpdesk: CASP@SureHarvest.com or (831) 477-7797

ABC: Jenny Nicolau at jnicolau@almondboard.com or (209) 343-3248