Continuing Education Units (CEU’s)

• What type of CEU’s are offered at conference?
  – Tuesday – Certified Crop Advisor (CCA)
  – Wednesday – Certified Crop Advisor (CCA)
  – Thursday – Certified Crop Advisor (CCA) and Department of Pesticide Regulations (DPR)

• Where are the CEU sign in sheets?
  – CEU sign in sheets will be in the back of each session
  – There are separate forms on Thursday for the CCA and DPR credits

• Special instructions for Thursday
  – PCA’s will need to pick up their scantrons in the morning before the first session of the day. They will also need to return the scantron at the end of the day to the CEU booth. This is in addition to signing in and out of each session.
AGENDA

• Jonathan Hoff, Monte Vista Farming Co., moderator
• Atha Mandis, Innocent Drinks
• Franklin Dlott, SureHarvest
• Spencer Cooper, Almond Board of California
ALMOND SUSTAINABILITY:
Join the Journey!

04 December, 2018
Athanasios Mandis
Sustainability Consultant
Innocent Drinks
things we make
You might already know that innocent is owned by Coca Cola. We first started working with them in 2009, when they bought a 20% share in our business. Over the years, as we got to know them and they got to know us, Coke bought more shares, until 2013, when they took full ownership.

We have an interesting way of working with them, in that we run this business in the same way that we always have done, independently. We receive great support from Coke, and are proud to be a part of their company, but we are also very proud of this brand and business that we built from the ground up. And Coke are smart enough to know that innocent has a unique set of values and a really clear purpose that are fundamental to our future success.

So they let us get on with it.

We are as committed as ever to our social, ethical, charitable and environmental goals. And since we did the deal with Coke we’ve expanded from being a simple smoothie company to being one that concocts every kind of healthy drink imaginable.
OUR sustainability journey

A Brief History of Time

What’s the Story?

What’s YOUR story?
sustainability team

£330M turnover, 30+ countries and 400+ staff*

* no own production sites
supplier approval process

sustainability approval process

research investigation trip recommendation
*procurement owns the supplier approval process*
product approval process

SUPPLIER APPROVAL PROCESS

nutrition  brand  legal
projects

sustainable agriculture

GOOD TO THE CORE implementation of SAI FSA

PROTECTED FUTURES continuous improvement projects
focus areas

Three pillars of sustainable agriculture

- **people**
  - social development

- **profit**
  - economic development

- **planet**
  - environmental protection

(california almonds logo)
focus areas

All sustainable agriculture projects to be aligned with one of the following UN SDGs:

01 WATER RESOURCE MANAGEMENT
02 SECURITY OF INCOME & WELLBEING
03 BIODIVERSITY & BEES

06 CLEAN WATER & SANITATION
08 DECENT WORK & ECONOMIC GROWTH
15 LIFE ON LAND

12 RESPONSIBLE CONSUMPTION & PRODUCTION

Other areas are not excluded, but will not receive as much resource for communication and promotion
OUR sustainability journey

A Brief History of Time

What’s the Story?

What’s YOUR story?
moral authority . . ?

The age of reason began to challenge social norms . . .
time is of the essence

... and our world was to change like never before
sketches of the modern world

age of enlightenment &
industrial revolution

speed              atomization              polarization
speed
speed

More than words . . .

140 characters
Romanticism was to rival the classics and industrial revolution

‘The artist’s feeling is his law.’ Casper David Friedrich.
polarization

Of algorithms and advertising
OUR sustainability journey

A Brief History of Time

What’s the Story?

What’s YOUR story?
Who to trust for source of information?

‘Whichever interpretation prevails at a given time is a function of power, not of truth.’ Friedrich Nietzsche.

‘History will be kind to me for I intend to write it.’ Winston S. Churchill.
Some people want to share their daily activities . . .

. . . and others want to read about it
atomization

Agricultural Land (16%)

Water Usage (11%)

- Almond
- Other

[Diagram showing pie charts for Agricultural Land (16%) and Water Usage (11%) with categories Almond and Other]
atomization

Hello Sarah, we’re working really closely with the farmers who grow our nuts to make sure they are grown as sustainably as possible. The vast majority of our almond is sourced from either rain-fed or advanced irrigation systems that optimise water efficiency. Hope that helps.

Putrid_Fruit
@putrid_fruit

Replied to @innocent @Sarah99Linc

Sounds link euphemistic corporate lingo to me. Where is this magical place you’ve found with sufficient heat and light and water? Almonds will probably never be a product that can be grown on mass without terrible ecological consequences.

4:32 am - 16 Oct 2018

7 Likes
what’s the story?

• Need to engage with the public
• Message needs to be substantiated by facts . . .
• . . . but communicated on an emotional (personal) level

YOU NEED TO OCCUPY THAT SPACE OTHERWISE SOMEONE ELSE WILL
(if someone is willing to talk about what they ate for breakfast, chances are they have something to say about almond)
OUR sustainability journey

A Brief History of Time

What’s the Story?

What’s YOUR story?
Why CASP?

- Tailored standard that reflects main requirements and challenges of the almond sector
- Modern approach (performance-driven)
- Ability to gather significant data and allow the ABC to make substantiated claims
- Benchmarks favourably against the SAI FSA standard (gold)
- Supported by the ABC to promote the almond, but . . .
what’s YOUR story? #1

Farm to landscape approach

- Sustainable Agriculture
- Integrated Land Management (ILM)
- Integrated Crop Management (ICM)
- Integrated Pest Management (IPM)
what’s YOUR story? #1

Almond: a successful crop

Custodians of land
what’s YOUR story? #1

Almond: a successful crop
Major employer and $11B
what’s YOUR story? #1

Almond: a successful crop
Major employer and $11B
16% agricultural land
what’s YOUR story? #1

Almond: a successful crop
Major employer and $11B
16% agricultural land
Part of a basin management

Reach out, let your ambition match your responsibility
what’s YOUR story? #2
thank you
Getting started with CASP

Franklin Dlott, SureHarvest
California Almond Sustainability Program (CASP)

www.sustainablealmondgrowing.org

• Getting started
  • Create an account or login
• Assessing modules
• Reports
• Data sharing
• Maps
• Help
Come to the ABC Booth #625

Sign up, participate in the supply chain pilot or get help at the ABC Booth on the trade show floor

Tuesday 12/4/18 - 5:30 pm – 7:00 pm
Wednesday 12/5/18 - 9:00 am– 5:30 pm
Thursday 12/6/18 - 8:00 am– 3:00 pm
CASP Foundation: Grower Engagement and Participation
Create Account
Create Account – Primary Details

Username *

Password *

Confirm Password *

NEXT
Create Account – Organizational Setup

Farming Business Name *

Total Acres Farmed in this Business *

NEXT
Create Account – Orchard Setup

Primary Details

Orchard Name *

Orchard Acres *

County*

Organization Setup

Terms And Conditions

CASP collects personal information and details about your operations in order to provide you with customized services, calculate your results, and allow the creation and maintenance of a "User Account" to store your information for your own future use and review. CASP confidentially shares aggregated anonymized self-assessment, irrigation budget, and nitrogen budget data with Almond Board of California. Successfully maintaining data is a secure and confidential manner is a hallmark of CASP since 2009.

I have read and agreed to these terms and conditions

SUBMIT
Create Account – Sign Up Complete – I Want To…

I WANT TO...

- Assess Comprehensive Modules
- Assess Irrigation Continuum
- Use Nitrogen Tool
- Use Irrigation Tool
- Add/Edit Orchards
- Go to Home Dashboard
Returning User Login
I WANT TO...

- Assess Modules
- Use Nitrogen Tool
- Use Irrigation Tool
- Add / Edit Orchards

- View Map
- View Reports
- Get Help
Spotlight on Water

Almond farmers are AHEAD OF THE CURVE FOR EFFICIENT IRRIGATION ADOPTION

- 43% microirrigation
- 42% sprinkler
- 12% flood

CALIFORNIA STATEWIDE
CALIFORNIA ALMOND

irrigation method
irrigation method
Assessing Modules

Orchard
Assessing Modules

Year & Orchard

e-Module View

Modules

Reports
### BEST MANAGEMENT PRACTICES GUIDE

#### 01 Our operation was aware of the Almond Board’s guide: Honey Bee Best Management Practices for California Almonds.

*If No, then click ‘No’ and skip to question 4.*

- [ ] Yes
- [ ] No

#### 02 Practices in the guide specific to our internal farm operation were used.

- [ ] Yes
- [ ] No

#### 03 Practices in the guide relevant to our role in communication and coordination with parties throughout the pollination and pest management communication chain were used.

- [ ] Yes
- [ ] No
Module Assessment Comparison Report

Reports

ASSESSMENTS

Exhibits

PRACTICES

Name: altrineau
Organizer: A.A. | Almond Board
Enterprise: A.A. | Altrineau
Module View: Comprehensive

BEE HEALTH AND POLLINATION

INTRODUCTION AND GENERAL INFORMATION - POLLINATION EFFICIENCY

The practices in this module cover recommended practices for reducing potential adverse impacts to managed honey bees and native pollinators. Almond pollination by managed honey bees from hives placed to service specific orchards is key to successful pollination. However, native bees occurring on and off the farm year-round also pollinate almonds and other crops and plants. For optimal crop production and ecosystem function, it is important that pest management and cultural practices used year-round, on and off the farm, protect and nurture managed honey bees and native pollinators.

BEST MANAGEMENT PRACTICES GUIDE
# Module Assessment Comparison Report

<table>
<thead>
<tr>
<th>Practice or Metric</th>
<th>BEST MANAGEMENT PRACTICES GUIDE</th>
<th>Your Selection</th>
<th>Answer Choices</th>
<th>Use Statewide</th>
</tr>
</thead>
</table>
| **Bee Health and Pollination Module** | Our operation was aware of the Almond Board’s guide: Honey Bee Best Management Practices for California Almonds.  
*If No, then click 'No' and skip to question 4.* | X              | Yes            | 73.4%         |
|                    | 02. Practices in the guide specific to our internal farm operation were used.                   | X              | Yes            | 90.9%         |
|                    | 03. Practices in the guide relevant to our role in communication and coordination with parties throughout the pollination and pest management communication chain were used. | X              | Yes            | 88.6%         |
Home Page: Grower Data Sharing

DATA SHARING

INSTRUCTIONS
1. Select your Handler in the drop down menu by orchard.
2. Select OPT-IN to share data with your handler.
3. Select OPT-OUT to turn off data sharing.
4. The data sharing status per orchard will update based on your selections.

Note: To ensure clear data sharing opt-in/opt-out with the correct handler, you will need to select the handler and either "OPT-IN" or "OPT-OUT" for each orchard.

<table>
<thead>
<tr>
<th>Orchard Name</th>
<th>Handler for Orchard</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turlock Site</td>
<td>Select Handler</td>
<td>No Sharing</td>
<td></td>
</tr>
<tr>
<td>Gratton Ranch</td>
<td>Select Handler</td>
<td>No Sharing</td>
<td></td>
</tr>
</tbody>
</table>

If you don't see your Handler, contact support at CASP@sureharvest.com
831-477-7797
Maps

View Maps
Home Page: Take A Tour and Help

- **HELP**
  - USER GUIDES
    - Getting Started Guide
    - N Calculator User Guide
    - Irrigation Calculator User Guide
    - Map Guide
  - TOURS
    - Home Dashboard Tour
    - Education Text Tour
    - N Calculator Tour
    - Irrigation Calculator Tour
  - FEEDBACK
    - Provide Feedback

- **Take A Tour**
Come to the ABC Booth #625

Sign up, participate in the supply chain pilot or get help at the ABC Booth on the trade show floor

Tuesday 12/4/18 - 5:30 pm –7:00 pm
Wednesday 12/5/18 - 9:00 am–5:30 pm
Thursday 12/6/18 - 8:00 am–3:00 pm
ALMOND SUSTAINABILITY: JOIN THE JOURNEY!

ROOM 308-309 | DECEMBER 4, 2018
Tools within CASP
# Irrigation Schedule Summary

<table>
<thead>
<tr>
<th>Crop Year</th>
<th>Organization</th>
<th>Enterprise</th>
<th>Orhard</th>
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<tbody>
<tr>
<td>2016</td>
<td>AA</td>
<td>Almond Board</td>
<td>AA</td>
</tr>
<tr>
<td>2017</td>
<td>AA</td>
<td>Almond Board</td>
<td>AA</td>
</tr>
<tr>
<td>Week</td>
<td>Run time (hour)</td>
<td>Run to Meet ETc</td>
<td>Run to Fill ASM</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>MAY (#21) 5/27 - 6/2</td>
<td>34</td>
<td>39.4</td>
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<tr>
<td>JUN (#22) 6/3 - 6/9</td>
<td>36</td>
<td>43.4</td>
<td>1.95</td>
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<tr>
<td>JUN (#23) 6/10 - 6/16</td>
<td>36</td>
<td>45.0</td>
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<tr>
<td>JUN (#24) 6/17 - 6/23</td>
<td>36.5</td>
<td>45.7</td>
<td>2.06</td>
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<tr>
<td>JUN (#25) 6/24 - 6/30</td>
<td>37</td>
<td>47.3</td>
<td>2.13</td>
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<tr>
<td>JUL (#26) 7/1 - 7/7</td>
<td>42.5</td>
<td>49.6</td>
<td>2.23</td>
</tr>
</tbody>
</table>

This recommendation is not intended to be used as the sole source of information for making irrigation decisions. Local environmental conditions can have a profound effect on irrigation demands. The Almond Board of California, the University of California, and the California State University, are not responsible for the accuracy of this model.
DETAILED
A comprehensive report showing weekly values for reference evapotranspiration (ETo), crop coefficients (Kc) and crop evapotranspiration ETc with accumulated ETc, CIMIS precipitation, entered and effective precipitation along with run hours and inches required to meet ETc, run hours and inches required to fill Available Soil Moisture (ASM), ASM depletion and observed tree status by week. Click Show Details (PDF) to create formatted printable report, click Download Details (CSV File) to download a file compatible Excel.

SUMMARY
An overview report showing entered run hours along with run hours and inches to meet ETc, Run Hours to fill ASM, and ASM depletion by week.

Click Show Details (PDF) to create formatted printable report, click Download Details (CSV File) to download a file compatible Excel.
### Irrigation Schedule Details

**Organized By:** Stanislaus

**Schedule Year:** 2018

**Orchard Details**

- **Year Planted:** 2014
- **Orchard Status:** Immature
- **Orchard Canopy Cover at Midday:** 80%
- **Kf Factor:** 100%
- **Acres:** 45
- **Row/Tree Spacing:** 21 x 16 feet
- **Trees per Acre:** 129.6

**Soil Texture**
- 0 - 3 feet: Fine-Loams, silt loams, sandy clays, silty clays, clays (2.4)

**Effective Rooting Depth:** 3 feet

**Available Soil Moisture for Orchard:** 3.6 inches

**Available Soil Moisture in Wetted Area:** 2.88 inches

**Available Soil Moisture (ASM) Depletion Alert (%):** 50%

**Notes:**
- **Denotes Item required for calculation:**

---

### Irrigation Schedule Details

<table>
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<tr>
<th>Week</th>
<th>Typical ETc (in)</th>
<th>This of ETc (in)</th>
<th>KC</th>
<th>ETc (in)</th>
<th>Accum ETc (in)</th>
<th>CIMIS Precip (in)</th>
<th>Entered Precip (in)</th>
<th>Effective Precip (in)</th>
<th>Run Hrs to Meet ETc</th>
<th>Entered Hrs</th>
<th>Inches Supplied</th>
<th>Run Hrs to Fill ASM</th>
<th>Inches to Fill ASM</th>
<th>Calc % ASM Depleted</th>
<th>Entered % ASM Depleted</th>
<th>Obs Tree Stress</th>
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<td>14.1</td>
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<td>10/2 - 10/11</td>
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<td>0.77</td>
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<td>0.63</td>
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*This recommendation is not intended to be used as the sole source of information for making irrigation decisions. Local environmental conditions can have a profound effect on irrigation demands. The Almond Board of California, the University of California, and the California State University are not responsible for the accuracy of this model.*
Use Nitrogen Tool
### N Budget Summary

- **Filter your list**:
  - Add N Budget

#### N Calculator

<table>
<thead>
<tr>
<th>Crop Year</th>
<th>Organization</th>
<th>Enterprise</th>
<th>Orchard</th>
<th>Last Yield Entered</th>
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<tbody>
<tr>
<td>2017</td>
<td>AA Almond Board</td>
<td>AA Stanislaus</td>
<td>stanislaus</td>
<td>Pre-Application</td>
</tr>
</tbody>
</table>

- **Options**: Open, Clone, PDF

---

*Sustainable almond farming utilizes production practices that are economically viable and are based upon scientific research, common sense.
N CALCULATOR

SOURCE
Crop Year: 2017
Organization: AA | Almond Board
Enterprise: AA | Stanislaus
Orchard: stanislaus
Fertilizer Application History: Fruit Maturity or Early Post-Harvest

TARGET
Crop Year: 2018
Organization: AA | Almond Board
Enterprise: AA | Stanislaus
Orchard: stanislaus
Fertilizer Application History: All Recorded Applications

CLONE
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:
2700 lbs/Acre
(or this year’s pre-application predicted yield)

2 years ago yield:

3 years ago yield:

FRUIT GROWTH OR KERNEL FILL REVISED ESTIMATE

Use in Calculations:

Post bloom estimated yield:
3000 lbs/Acre

POST-HARVEST ACTUAL KERNEL YIELD

Use in Calculations:

This year’s actual yield:

REPORTS

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

CALCULATIONS

Kernel Yield
- Pre-Application Predicted: 2700 lbs/Acre
- Pre-Harvest Estimated: lbs/Acre
- Post-Harvest Actual: lbs/Acre

Crop Nitrogen Demand Based on Yield
- By Pre-Application Predicted: 184 lbs N/Acre
- By Pre-Harvest Estimated: lbs N/Acre
- By Post-Harvest Actual: lbs N/Acre

N Credits
- Irrigation: lbs N/Acre
- Manure: lbs N/Acre
- Compost: lbs N/Acre
## Fertilizer Application

<table>
<thead>
<tr>
<th></th>
<th>Edit</th>
<th>Timing</th>
<th>Date</th>
<th>Product Name</th>
<th>Prod. App Rate</th>
<th>N</th>
<th>P₂O₅</th>
<th>K₂O</th>
<th>App Method</th>
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<td>Early Spring</td>
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<td>Other Fertilizer</td>
<td>3 gal</td>
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<td>6</td>
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<td>Fertilization - Drip</td>
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<tr>
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<td>Early Spring</td>
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<td>0</td>
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<td>Fertilization - Drip</td>
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<td>Fruit Growth</td>
<td>3/30/2016</td>
<td>UAN 32 32-0-0</td>
<td>10 gal</td>
<td>35</td>
<td>0</td>
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<tr>
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<td>3/30/2016</td>
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<td>4</td>
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<td>Fertilization - Drip</td>
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</tbody>
</table>

### Reports
- **Show PDF Summary**
- **Download CSV File**
- **Show Nitrogen Management Plan Report**

### Calculations

#### Kernel Yield
- Pre-Application Predicted: 2000 lbs/Acre
- Pre-Harvest Estimated: 2700 lbs/Acre
- Post-Harvest Actual: 3000 lbs/Acre

#### Crop Nitrogen Demand Based on Yield
- By Pre-Application Predicted: 147 lbs N/Acre
- By Pre-Harvest Estimated: 184 lbs N/Acre
- By Post-Harvest Actual: 204 lbs N/Acre

#### N Credits
- Irrigation: lbs N/Acre
- Manure: lbs N/Acre
- Compost: 60 lbs N/Acre
- Cover Crop: lbs N/Acre
- Other N-Credits: lbs N/Acre

**Sum of N-Credits**: 60 lbs N/Acre
## NITROGEN MANAGEMENT PLAN WORKSHEET

<table>
<thead>
<tr>
<th>1. Crop Year (Harvested):</th>
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<tr>
<td>2. Member ID #:</td>
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<td>3. Name:</td>
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### CROP NITROGEN MANAGEMENT PLANNING

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<td>Pounds (kernel)</td>
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<td>100</td>
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### N APPLICATIONS/CREDITS

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### PLAN CERTIFICATION

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<td>30. Low Vulnerability Area, No Certification Needed</td>
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<td>31. Self-Certified, approved training program attended</td>
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<td>32. Self-Certified, UC or NRCS site recommendation</td>
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<tr>
<td>33. Nitrogen Management Plan Specialist</td>
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**Your Coalition will provide the method to be used to estimate N Removed.**

Numbering in this Nitrogen Management Plan differs slightly from the template approved by the Central Valley Water Board 23 December 2014.
Want to sign up for CASP today?

• Where can I sign up for CASP today?
  – ABC Booth #625
Questions

Scooper@almondboard.com
209-604-3727
Thank you!
What’s Next

Tuesday, December 4

• State of the Industry – Hall C at 4:15 p.m.
• Research Poster Session – Hall A+B at 5:30 p.m.

Be sure to join us at 5:30 p.m. in Hall A+B for Dedicated Trade Show Time and Opening Reception, sponsored by FMC Agricultural Solutions