Industry Roundup: Everyone Has a Role in Creating the Almond Industry of the Future

Richard Waycott, President and CEO
Julie Adams, VP, Global Technical & Regulatory Affairs
Stacey Humble, VP, Global Marketing & Communications
Dr. Karen Lapsley, Chief Scientific Officer
Continuing Education Units

• Sign-in desk located in rear of meeting rooms

• For DRP credits sign in and out at the beginning and end of each day at CEU Kiosk in registration hall
THE ALMOND INDUSTRY HAS LED CHANGE

**ALMOND NUTRITION PERCEPTIONS**
- 1993: Nutrition research starts
- 2003: Qualified Health Claim U.S.
- 2016: FDA declares almonds healthy

**ALMOND SAFETY**
- 2001, 2004: Almond recalls
- 2007: Pasteurization, VASP implemented
- 2011: FSMA law signed
- 2015: EU recognizes PEC
- 2016: Produce Safety processing exemption

**ENVIRONMENTAL IMPACT**
- 2006: Sustainability program starts
- 2015: AIM Accelerated Innovation Management
We must accelerate the expansion of OUR GLOBAL MARKETS

We must accelerate the expansion of SUSTAINABLE ALMOND FARMING
THE FUTURE: A NEW THRESHOLD OF GROWTH

SPAIN/CHINA/HK/GERMANY

2015/16 SHIPMENTS

572

UNITED STATES

2015/16 SHIPMENTS

593

PRODUCTION INCREASE
BY 2020

+500
ACCELERATING INNOVATION

AIM consists of four major initiatives designed to meet the future needs of the California Almond industry while benefiting local communities and the environment.

Since its launch last year, AIM has funded nearly 20 projects.
THREE-YEAR ASSESSMENT INCREASE FUELS DEMAND CREATION, ACCELERATES RESEARCH

2015/16 Budget $0.03

- Demand Creation: $4M
- Operations & Administration: $3M
- Industry Service & Outreach: $2M
- Nutrition Research: $10M

2016/17 Budget $0.04

- Demand Creation: $7M
- Ag & Environmental Research: $10M
- Industry Service & Outreach: $7M
- Nutrition Research: $8M
- Unallocated: $3M

$40M → $47M
A Crop of Choice

Quality Assurance • Compliance • Regulatory • Trade Stewardship

The Nut of Choice

Nutrition Research • Technical/Functional Research • Global Marketing
FUTURE OF THE CALIFORNIA ALMOND INDUSTRY
and the Almond Board of California
Bringing Health to the World’s Snackers

Stacey Humble, VP, Global Marketing & Communications
THE FUTURE: A NEW THRESHOLD OF GROWTH

<table>
<thead>
<tr>
<th>Country</th>
<th>2015/16 Shipments</th>
<th>2015/16 Shipments</th>
<th>Production Increase by 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain, China/HK, Germany</td>
<td>572</td>
<td>593</td>
<td>+500</td>
</tr>
</tbody>
</table>
Almonds Align with Global Trends

- Healthy
- Empowers healthy lifestyles
- Plant Power
Now is the time to take our programs to the next level
The way forward includes new places, new things in current and new markets

- Build on and expand our global portfolio
- Stick with what works
- Keep momentum in current markets
INCREMENTAL INVESTMENT – NUT OF CHOICE

A staged ramp-up intended to keep demand ahead of supply. Flexibility will be key to our future budget planning.
ACCELERATING INNOVATION

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Dr. Karen Lapsley
Chief Scientific Officer, ABC
WATER MANAGEMENT & EFFICIENCY

BASIC RESEARCH

- LYSIMETER WATER-USE MEASUREMENTS:
- WATER PRODUCTION FUNCTION:
- CROP-WATER MODELING:

BEYOND RESEARCH

- SITE-SPECIFIC WATER-DEMAND INSTRUMENTS:
- SAP-FLOW SENSORS:
- LEAF MONITORING FOR ZONAL IRRIGATION:

Wednesday 10:15 -11:00 and 11:05 – 11:50
Room 310-311

What’s Now & What’s New
Precision Irrigation Management
ONLINE TOOLS FOR ALL

Irrigation Calculator and Irrigation Continuum in E-book version available at Almonds.com/irrigation

Wednesday 1:45 - 2:45 pm
Room 310-311
Good Irrigation Water Management Practices
Groundwater Recharge Potential

Ground Water Suitability Index

Value
- Excellent
- Good
- Moderately good
- Moderately poor
- Poor
- Very Poor

Accelerated Innovation Management (AIM)

- Water Management Efficiency
- Sustainable Water Resources
- 22nd Century Agronomics
- Air Quality

Wednesday
9:30 - 10:15 am,
1:15 – 3:00 pm,
3:30 – 5:00 pm

Thursday
1:30-3:00 pm

ABC booth – exhibit hall
Land IQ demos & info

Learn more about how suitable your orchard is for groundwater recharge
Collaborative recharge research at 3 test sites to evaluate impacts on use of excess winter water on both orchard health and water movement through the soil layers.

Sustainable Conservation continues to recruit growers interesting in hosting recharge demo trials.
Berkeley researchers expand their sub soil research to almond orchards
Subsurface Heterogeneity of Soil Layers

Locations of monitoring wells for USGS Delta-Mendota Canal Study
Expanding the research partnership to include Stanford University and Tulare Irrigation District.
AIR QUALITY - outreach and information gathering

Orchard recycling - Measuring of hull breakdown

Exploring various harvesting technologies

Applicability of earlier harvest practices in California?
ABC Biomass Task Force Priorities:

- Keep biomass in the orchard
- Send for cogen/next gen processing
- Explore more feed uses (domestic and export)
- Investigate higher value added products
ROOTSTOCK IMPROVEMENT And VARIETY DEVELOPMENT

• Varieties
  • Self-compatibility
  • Tree architecture, next gen harvesting
  • California varieties regional trials underway
  • Australian and Spanish varieties in 2 year quarantine
  • Customer Interest and Concern

• Rootstock
  • Less reliance on soil fumigants and more salt tolerance TOP PRIORITY

Wednesday
2:45 – 3:30 pm
Room 310-311
Managing Orchard Salinity

Thursday
9:00 – 11:50 am
Room 315
Almond Flavor, Sensory and Shelf-life Preservation
EMERGING RESEARCH

OVER 120 posters to view and researchers to meet

ABC exhibit hall:
Wednesday
3:30 – 5:30 pm

Thursday
1:30 – 3:00 pm
Telling Our OWN Story

Julie Adams, VP, Global Technical & Regulatory Affairs
MAKING LEMONADE OUT OF LEMONS...
THE ALMOND INDUSTRY HAS Led CHANGE

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**ENVIRONMENTAL IMPACT**
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CALIFORNIA ALMOND SUSTAINABILITY PROGRAM

Assessed and Managed Acres
(Percentage of 2016 Statewide Total of 890,000 Acres)

<table>
<thead>
<tr>
<th></th>
<th>Assessed Acres</th>
<th>Managed Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Sustainability Report (2009-2013)</td>
<td>95,496 (11%)</td>
<td>255,891 (29%)</td>
</tr>
<tr>
<td>Post Report (2013-2016)</td>
<td>198,229 (22%)</td>
<td>449,553 (51%)</td>
</tr>
</tbody>
</table>

- 95,496 acres (11%) assessed
- 198,229 acres (22%) managed
- 449,553 acres (51%) total

Total acres: 890,000 acres

CALIFORNIA ALMOND SUSTAINABILITY PROGRAM
**DOCUMENTED PRACTICES = CONFIDENCE**

<table>
<thead>
<tr>
<th>REPUTATION MANAGEMENT TOOL</th>
<th>Data-Gathering Tool</th>
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<tbody>
<tr>
<td>AIM Initiative Tool</td>
<td></td>
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Supply Chain:
- customer \(\rightarrow\) handler \(\rightarrow\) grower
- customer \(\leftarrow\) handler \(\leftarrow\) grower

Progress on specific initiatives, objectives

Education, industry practices
CONFIDENCE = REPUTATION
Reputation = Credibility/Trust

<table>
<thead>
<tr>
<th>ISEAL Principle</th>
<th>CASP Self-Assessment Program</th>
<th>Global GAP</th>
<th>Rainforest Alliance - SAN</th>
<th>SCS Certified Sustainably Grown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability</td>
<td>92%</td>
<td>100%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Improvement</td>
<td>83%</td>
<td>100%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>Relevance</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>83%</td>
</tr>
<tr>
<td>Total Rigor</td>
<td>83%</td>
<td>75%</td>
<td>50%</td>
<td>61%</td>
</tr>
<tr>
<td>Engagement</td>
<td>92%</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Impartiality</td>
<td>100%</td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
</tr>
<tr>
<td>Transparency</td>
<td>83%</td>
<td>67%</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>Accessibility</td>
<td>89%</td>
<td>78%</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td>Truthfulness</td>
<td>100%</td>
<td>100%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Efficiency</td>
<td>100%</td>
<td>67%</td>
<td>83%</td>
<td>100%</td>
</tr>
<tr>
<td>% of Total Points</td>
<td>92%</td>
<td>85%</td>
<td>74%</td>
<td>82%</td>
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ANOTHER TOOL IN THE TOOLBOX: ALMOND ALLIANCE OF CALIFORNIA

EDUCATION

ABC monitors discussions/develops factsheets
ABC provides data on regulatory impact
ABC educates legislative members/staff

ADVOCACY

AAC signs on/takes positions
AAC submits comments based on impact analysis
AAC advocates legislative positions
BE A CROP OF CHOICE BEFORE YOU CAN BE THE NUT OF CHOICE!
Communicating Our Journey

Stacey Humble, VP, Global Marketing & Communications
Major Shifts within CPG
MEDITERRANEAN CLIMATE, GLOBAL IMPACT

Strategic Imperatives

California and Northern Baja
California

Central Chile

Southern Europe, Northern Africa

Western Cape, South Africa

Southwest and South Australia
1. BUILD ON OUR GLOBAL STRENGTH
   • Leverage global appeal and demand of product

2. ELEVATED DEFINITION OF HEALTH
   • Build on leadership position to take almonds to broader health benefits - Healthy for me, my community, my planet
   • Mediterranean food, grown in Mediterranean climate

3. GLOBAL MARKETING AND REPUTATION MANAGEMENT
   • Research-based
   • Share the journey, not just final research
   • Be personable and real
Almond trees burst into early bloom each February. Almonds are not self-pollinating so farmers rent honey bees to pollinate the trees.

Without honey bees there would be no almonds. That’s why we’ve invested $2.3 millions in honey bee health in 20 years, more than any other commodity.

The almond industry has developed Bee BMPs to ensure almond orchards remain a safe haven for bees.
HOW SUSTAINABILITY IMPACTS OUR WORK

The Modesto Bee

Harvest dust can drive you nuts, but pales next to car exhaust

Almond Harvest In Full Swing 1:23
BRINGING IT ALL TOGETHER

Almonds are healthy and a sustainable choice....
Coming Together As Never Before: Successful Partnerships and Industry Involvement