Air QualityRegs
and Requirements

December 8, 2015
Accelerated Innovation Management (AIM)

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

Gabriele Ludwig, Almond Board (Moderator)

Danielle Veenstra, Almond Board (Moderator)

Roger Isom, Western Agricultural Processors Association

Michelle Buffington, California Air Resources Board

Danielle Veenstra, Almond Board
Around the World in 15 Minutes: Update on Air Quality Issues Facing the Almond Industry

Roger A. Isom
President/CEO
Western Agricultural Processors Association
• EPA’s own comments:

“For California’s nonattainment areas to meet the updated ozone standards, the state and EPA have recognized that transformational change is likely needed, such as a transition to **largely zero or near-zero emission vehicle technologies**, and a **significant turnover of the legacy fleet of vehicles**, among other changes.”
Projected 8-Hour Ozone Nonattainment Areas

- Monitored CBSAs and rural counties that would be violating a 70 ppb standard
- Unmonitored areas that are anticipated to violate a 70 ppb standard based on spatial interpolation

Source: URS, August 3, 2015.
Sustainable Freight Strategy

• Another Truck Regulation
  – Hybrids

• Transportation Refrigeration Units (TRUs)
  – Electric
  – Plug-in requirements

• New LSI Regulation
  – Electric forklifts

• Facility Diminishing Cap
  – Emission reductions mandates for distribution
ARB Truck Regulation

- Key dates ahead for replacement
- January 1, 2017 – Limited-Mileage Trucks
  - Pre-1996 (< 15,000 miles)
  - 1996-2005 (< 20,000 miles)
  - 2006 or later (< 25,000 miles)
- January 1, 2023 – “AG” Trucks
  - < 10,000 miles/yr
Farm Equipment Regulation

• Incentives, Incentives, Incentives!
  – Carl Moyer Program (CARB & Local Air District)
  – National Air Quality Initiative (NAQI) – USDA NRCS
  – Diesel Emission Reduction Act (DERA) – US EPA

• Economic Study by Cal Poly
  – What is the financial impact of a potential mandatory regulation?
  – 22 farms studied including four (4) almond growers

• Working close with California Air Resources Board
AG TRACTOR REPLACEMENT PROGRAM

1998

8.14 g/bhp-hr

6.54 g/bhp-hr

2013

2.15 g/bhp-hr

2015

0.26 g/bhp-hr

g/bhp-hr = grams per brake horsepower hour of smog forming oxides of nitrogen
Irrigation Pump Engines

• Tier 0 (Pre-1996) banned as of January 1, 2009
• Tier 1 & Tier 2 (1996-2006) banned as of January 1, 2015
  – Or 12 years after the date of installation**
• Electric motors
  – AG ICE Tariff ends this year
    • AECA has successfully received 3 year phase-in to new rates
Gasoline Tanks

- New requirements could trigger problems
- Replacing tanks may trigger vapor recovery
  - Phase 1, and
  - Phase 2!
  - Gasoline only
- New fire code requirement
  - UL listed aboveground tank
  - Double walled
  - No gravity feed, must have pump
  - Would apply to diesel and gasoline
Hullers and Processors

- Pasteurization units – Rule 4307
- PPO chambers
- Stockpile elevators
- Permitting Issues
PPO Chambers

- Permitting challenges
- WAPA developed nut specific emission factors
- Working on scrubber requirements
- New risk assessment requirements present challenge
Pasteurization Units

- Exempt from Lo-NOx burners
  - Only for natural gas
  - Not applicable to propane – must meet BACT

- WAPA working with Air District & manufacturer to add propane exemption
  - Requires rule modification
  - EPA & ARB review
Stockpile Elevators

- Air District looking at requiring them to be permitted
  - > 50 hp
  - Combustion emissions
    - Would trigger Tier 4 Final
  - Fugitive PM10 emissions
Permitting Issues

- Farms
  - If you switch to Tier 3, Tier 4 or electric engines, check your emissions...you may no longer need a permit
- Larger huller projects
  - Triggering public notice
  - Close to offset requirements
- No modifications without authority to construct!
- Risk assessment issue with fumigation
- Be strategic!
Questions?
Agriculture and Air Quality
December 8th, 2015, The Almond Conference
Michelle Buffington, Manager, ARB
Broad ARB Goals

| Cut air toxics health risk | Attain air quality standards | Mitigate climate change |

Zero-emission technology/ renewable energy
Plans to Get Us There

- Mobile Source Strategy
- State Implementation Plans
- Scoping Plan
- Sustainable Freight Action Plan
- Short-lived Climate Pollutant Plan
Guiding Principles for Strategy Development

- Create jobs
- Transform to a clean energy economy
- Give consumers clean energy choices
- Support vulnerable communities
- Save water
- Make California more resilient
Agriculture’s Role

- Part of all of the strategies
- Continue to participate in:
  - Voluntary incentive programs
  - The public process
- Partnership for data to understand contributions and economics of the industry
Have Questions?

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Danielle Veenstra,
Almond Board
Managing Dust at Almond Harvest
How to Reduce Dust

• Dust management includes:
  – Awareness of regulations and risks
  – Using research-based techniques and strategies
  – Opportunities and incentives to improve

• Dust Tool Kit + Quick Guides are durable tools to remind all involved in almond harvest of best practices
  – Growers
  – Operators
  – Custom harvesters
MANAGING DUST AT HARVEST

Everyone involved in the growing and harvesting of California Almonds should be aware that dust affects all who are present at harvest, including workers, neighbors and the community. Follow these steps, based on Almond Board-funded research findings, to reduce harvest dust.

Start with a clean orchard. Clean orchard floors make at harvest management practices easier. Clean floors help you reduce suction fan speed on pickup machines. This can knock a lot of dust out of the process before losing harvest efficiency.

Plan your route. Take every opportunity to blow dust back into the orchard using the tree canopy as a natural filter. Note that the trees and their canopies can help capture dust before it reaches roads and homes. Plan your passes and travel direction to direct dust away from roads, homes and sensitive locations such as schools, hospitals and day-care centers. If you are near a busy road, consider placing traffic signs to warn motorists of harvest activities.

Go low, but not too low. Set sweeper heads to optimal level. Don’t set heads any lower than necessary to recover the crop. Often, sweeper heads can be set to as low as 0.25 in. off the ground and still do a good job sweeping. If set too low, the sweeping head may move an excessive amount of dirt into the window, increasing dust from the pickup machine substantially.

Use wire ties. If possible, only use wire ties on sweeper heads. Sweeper heads that use wire ties without rubber ties can help reduce dust.

Avoid extra sweeper passes. Use fewer sweeper passes when and where possible. One sweeper pass instead of three can reduce the amount of dust produced by half.

Fine-tune settings. Often, extra attention to blower or adjustment will help reduce dust from blower use. Adjustments that take into account changing field conditions help reduce dust compared to using one-size-fits-all settings. Adding a boom (brush) to sweepers may improve performance in some conditions.

Go slow. Taking almond harvester ground speeds down a notch is a big help with dust reduction. A pickup speed of 1.5 miles per hour (mph) is 50% compared to 3 mph per hour. Note how conditions change from orchard to orchard and from early to late harvest. Adjust ground speeds to match conditions. In loose soil conditions, slower ground speeds let gravity do more of the work by separating dirt from the crop, reducing harvest fan air produce less dust.

Slow fans down, too. Dialing back the speed on harvester separator fans is another good way to reduce dust. Reducing separator fan speeds to the minimum needed for varying harvest conditions still allows you to harvest thoroughly and efficiently.

More tips for managing dust:
- If you are working with a custom harvester, talk to dust control practices before harvest. Discuss and agree beforehand on the expected balance of speed, productivity, and protecting workers and neighbors, and the environment from excessive all-suit harvest dust.
- Manage dust on unseeded roads. Reducing speeds, spreading ground and using products like Dust-Down decrease road dust.
- In dry years, take into account that harvest activities will likely result in increased dust due to the lack of storms and moisture, and that a reduced tree canopy will filter less dust.

For more information on reducing dust during almond harvest, visit Almonds.com/HarvestDust.

Available downstairs at Almond Board booth and online at Almonds.com/HarvestDust
Harvest Dust Tool Kit

4 Key Strategies:

1) Maintain clean orchard floors.

2) Blow into the orchard when working near field edges and use the trees and their canopies to naturally filter dust.

3) Set sweeper head height to optimum level and use fewer blower passes when possible.

4) Reduce harvester ground speed to allow more time for gravity separation.

Available downstairs at Almond Board booth and upon request.
With Success Comes Attention and Scrutiny

TOP TEN CALIFORNIA CROP ACREAGE

Almonds surpass peanuts in popularity

Martin Sullivan: Almond harvest too dusty

Regarding "Dust, the cost of doing business" (Opinion, Sept. 28), almonds are more like gold than Dick Tracy's money to me.

During the Gold Rush, hydraulic miners had little consideration for the effects on other citizens or wildlife. They filled streams and rivers with silt and caused big problems for farmers and others downstream. It took years to bring the mines under control.

Currently, almond farmers completely exterminate the cost of harvesting to everyone by filling the valley with dust, Battalion uniformed and causing respiratory issues for many of us.

If people want to be outdoors during almond harvest, currently they just have to accept the consequences.

Krista Smith: Where there's dust, making money's a must

Almonds are a dusty business we all know.

"That's OK," says the Almond Board, "Because it helps our economy to grow!"

When dust control during harvest is voluntary.

And dust control cuts profits, that's money.

With this status quo, I think we all know

That the dust will continue to grow!

KRISTA SMITH, CAMERON
Why to Reduce Dust

• The California Almond industry is larger than ever — both in size and value to our communities and the state as a whole.

• Continued drought means little soil moisture to aid in reducing dust.

• Dust at harvest is part of growing almonds but it’s also a visible reminder of the presence of farming in our communities.

• Harvest dust impacts those who live, work, play and drive nearby.
  – Neighboring homes and communities
  – Farmworkers in neighboring crops
  – Schools and daycares