

# Air Quality Regs and Requirements

December 8, 2015





**Gabriele Ludwig,  
Almond Board**



# 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

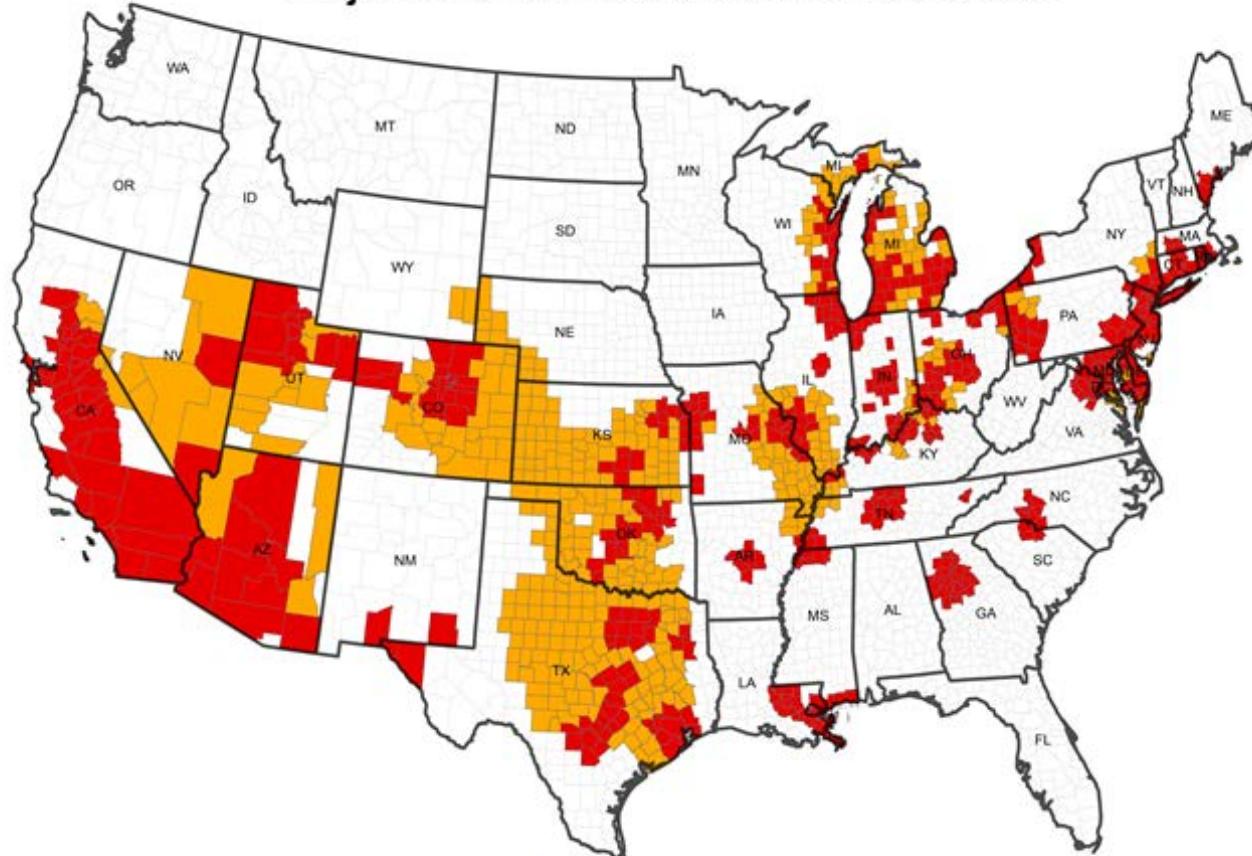
Roger A. Isom  
President/CEO  
Western Agricultural Processors Association



## New Ozone Standard

- 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.





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# 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

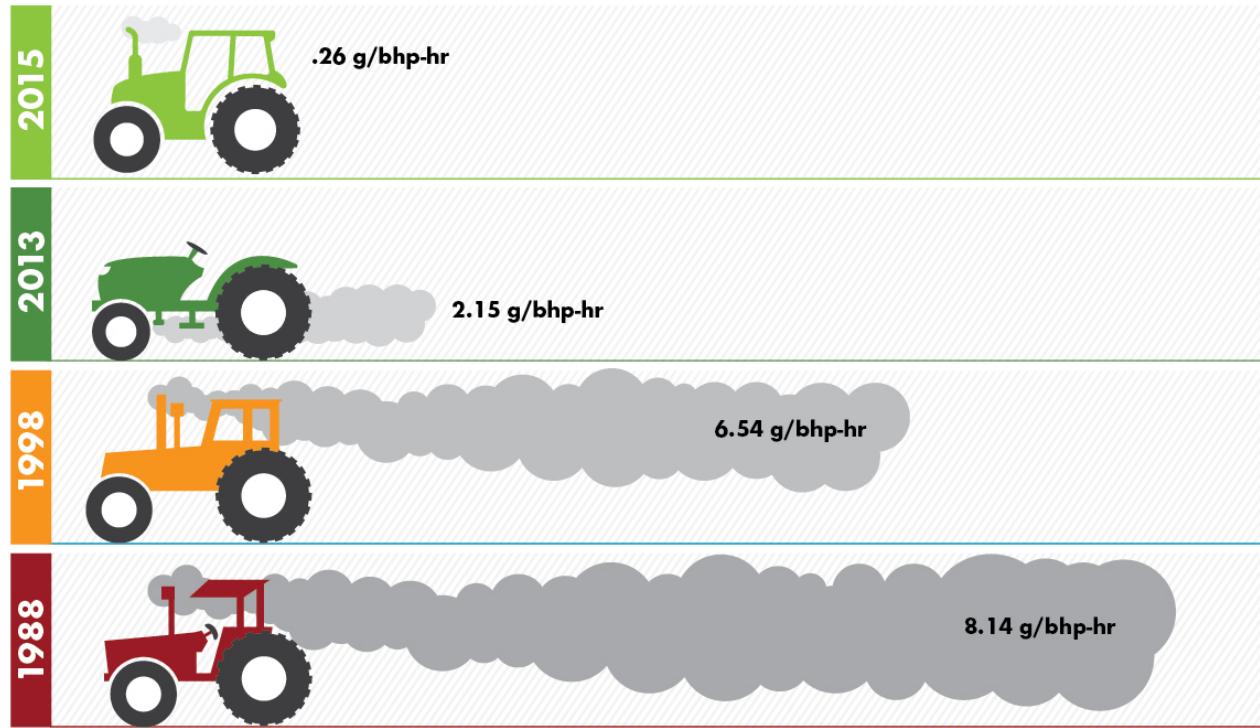


# Farm Equipment Regulation

- 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



**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

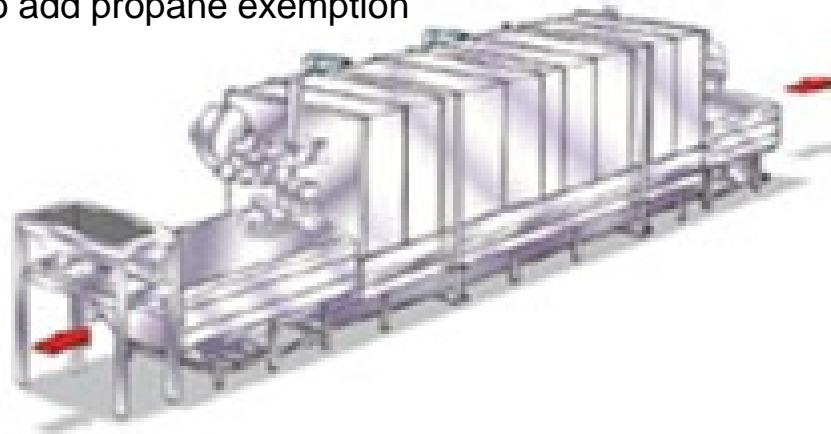


## PPO Chambers

- 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?





■ Michelle Buffington,  
California Air Resources Board





# Agriculture and Air Quality

*December 8<sup>th</sup>, 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



# 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



California Environmental Protection Agency  
Air Resources Board



California Strategic Growth Council

# Have Questions?

Michelle Buffington

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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 harvester



# Managing Dust at Harvest Quick Guide



## 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 all dust management practices easier. Clean floors help you reduce suction fan speed on pickup machines. That can knock a lot of dust out of the process without 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 optimum level. Don't set heads any lower than is necessary to recover the crop. Often, wire tines can be set to as high as 0.5° off the ground and still do a good job sweeping. If set too low, the sweeping head will move an excess amount of dirt into the windrow, increasing dust from the pickup machine substantially.

### Use wire tines.

If possible, only use wire tines on sweeper heads. Sweepers that use wire tines without rubber flaps can help reduce dust.

### Avoid extra sweeper passes.

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



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### Fine-tune settings.

Often, extra attention to blower spout 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 berm 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 cuts dust by 50% compared to 3 miles per hour. Note how conditions change from orchard to orchard and from early to late harvest. Adjust ground speed to match conditions. In loose soil conditions, slower ground speed lets gravity do more of the work by separating dirt from the crop meaning harvester fans produce less dust.

### Slow fans down, too.

Scaling back the rpm's 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 over dust control practices before harvest. Discuss and agree beforehand on the expected balance of speed, productivity, and protecting workers, neighbors, and the environment from excessive almond harvest dust.
- Manage dust on unpaved roads. Reducing speeds, spreading gravel and using products like Dust-Done decrease road dust.
- In dry years, take into account that harvest activities will likely result in increased dust due to lack of stored soil moisture, and that a reduced tree canopy will filter less dust.

For more information on reducing dust during almond harvest,  
visit [Almonds.com/HarvestDust](http://Almonds.com/HarvestDust).

Faulkner, W.B., D. Devney, D.K. Giles, and S.C. Capelenda. 2011. Evaluation of particulate matter abatement strategies for almond harvest. Journal of the Air and Waste Management Association 61: 409-417.



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## CÓMO CONTROLAR EL POLVO EN LA RECOLECCIÓN

Todos los que intervienen en la cosecha y la recolección de almendras de California deberían saber que el polvo afecta a todos los presentes en la recolección, tanto a los trabajadores como a las personas y la comunidad. Para reducir el polvo en la cosecha, siga los siguientes pasos, basados en las conclusiones de investigaciones financiadas por la Almond Board of California.

**Comience con un huerto limpio.**  
Un huerto con terreno limpio facilita todas las medidas de control del polvo. Si el terreno está limpio, podrá polvo generado sin reducir la eficiencia de la cosecha.

**Plíquifíquese la ruta.**

Simplifique que pueda, dirija el polvo de regreso al huerto usando las copas de los árboles como filtro natural. Tenga en cuenta que los árboles y sus copas pueden contribuir a capturar el polvo antes de que alcance las camionetas, los camiones y las casas. Plíquifíquese la ruta y la trayectoria de modo que el polvo alcance a las personas, de los coches y de lugares sensibles como escuelas, hospitales, guarderías y residencias para adverte a los automovilistas de las taras de recolección en curso.

**Límite la altura, pero no demasiado.**  
Pida los cuchillos de la barredora a la altura óptima. No los fije a una altura menor de lo necesario para recuperar la cosecha. En muchas ocasiones, las piezas de alambre pueden tocar correctamente inclinada a medida pulgada (más de un centímetro) del suelo. Si se fija a una altura demasiado baja, el cuchillo barredor arrastrará una cantidad excesiva de tierra a la helera y aumentará mucho el polvo generado por la recollectora.

**Use más piezas de alambre.**  
Siempre que sea posible, utilice solo piezas de alambre en los cuchillos de la barredora. Las barredoras con piezas de alambre, sin tapas de goma, pueden ayudar a reducir el polvo.

**Evide realizar pasadas de más cerca la barredora.**  
Siempre que pueda, reduzca el número de pasadas de la recollectora. Una pasada en lugar de tres podría reducir a la mitad la cantidad de polvo producido.



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# 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.



HOW DO YOU  
MEASURE SUCCESS?

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.

california almonds [AlmondToolKit.com](http://AlmondToolKit.com)



DUST MANAGEMENT STEPS

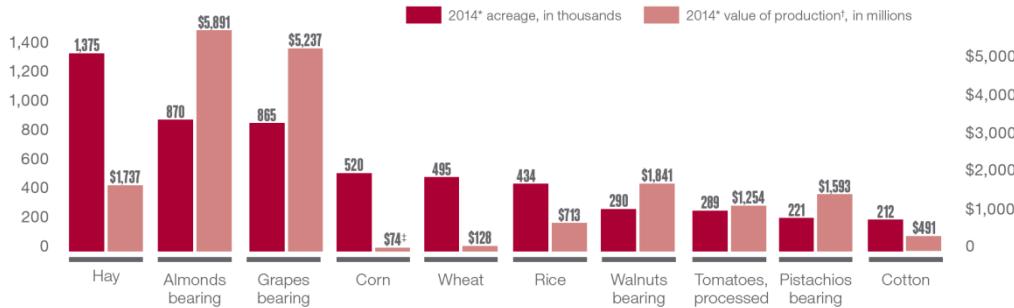
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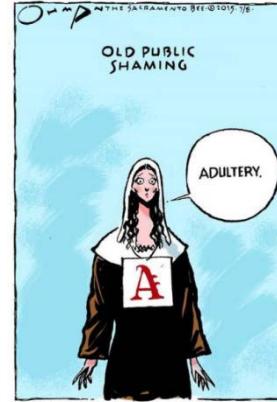
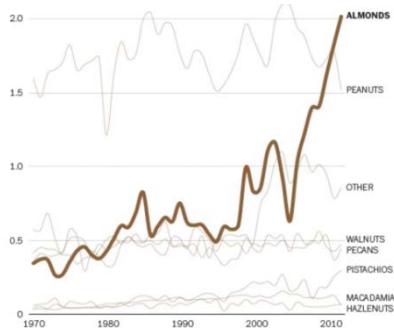
Available downstairs  
at Almond Board booth  
and upon request.

# With Success Comes Attention and Scrutiny

## TOP TEN CALIFORNIA CROP ACREAGE



Almonds surpass peanuts in popularity



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LETTERS TO THE EDITOR OCTOBER 22, 2013

Martin Sullivan: Almond harvest too dusty



Regarding "Tolerate the dust because almonds are gold" by Dick Hagerty (Opinions, Sept. 18): Almonds are more like gold than Dick Hagerty seems to realize.

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 miners under control.

Currently, almond farmers completely externalize the cost of harvesting to everyone by filling the valley with dust, dirtying all surfaces and causing respiratory issues for most of us. If people want to be outdoors during almond harvest, currently they just have to accept the unpleasantness.

If the harvesters' dirt stayed on their property or at least close by, it would be no big deal, but the dust fills the whole valley.

It is especially outrageous if they are making so much money that they don't modernize, since technology allows much cleaner harvesting.

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LETTERS TO THE EDITOR AUGUST 27, 2013

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 monetary,

With this status quo, I think we all know

That the dust will continue to grow!

KRISTA SMITH, OAKDALE

MORE LETTERS TO THE EDITOR



## 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

