



Protecting Agricultural Workers from Wildfire Related Concerns Panel Discussion

Moderator:

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Presenters:

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AgReserves, Inc.

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Grimmway Farms



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Assistant Professor Epidemiology

Specializing in environmental and occupational health relating to a changing climate and at-risk populations



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Cal/OSHA Emergency Regulation



Requirements by employer

1. Monitor AQI
2. When AQI ≥ 151 , employer must:
 - Inform workers of AQI & protective measures available
 - Implement modifications, if feasible, to reduce exposure (e.g., provide enclosed structures with filtered air, N95s)
 - Implement practical changes to work schedules
3. Provide effective training, including:
 - How to determine AQI
 - Identifying health effects of wildfire smoke exposure
 - How to use NIOSH-approved respirators
4. Establish worker protection procedures, including a plan to reduce worker exposure to wildfire smoke (e.g., provision of respirators)
5. Communication of above procedures between staff and employees is bidirectional
6. When AQI ≥ 500 , respirator use is required

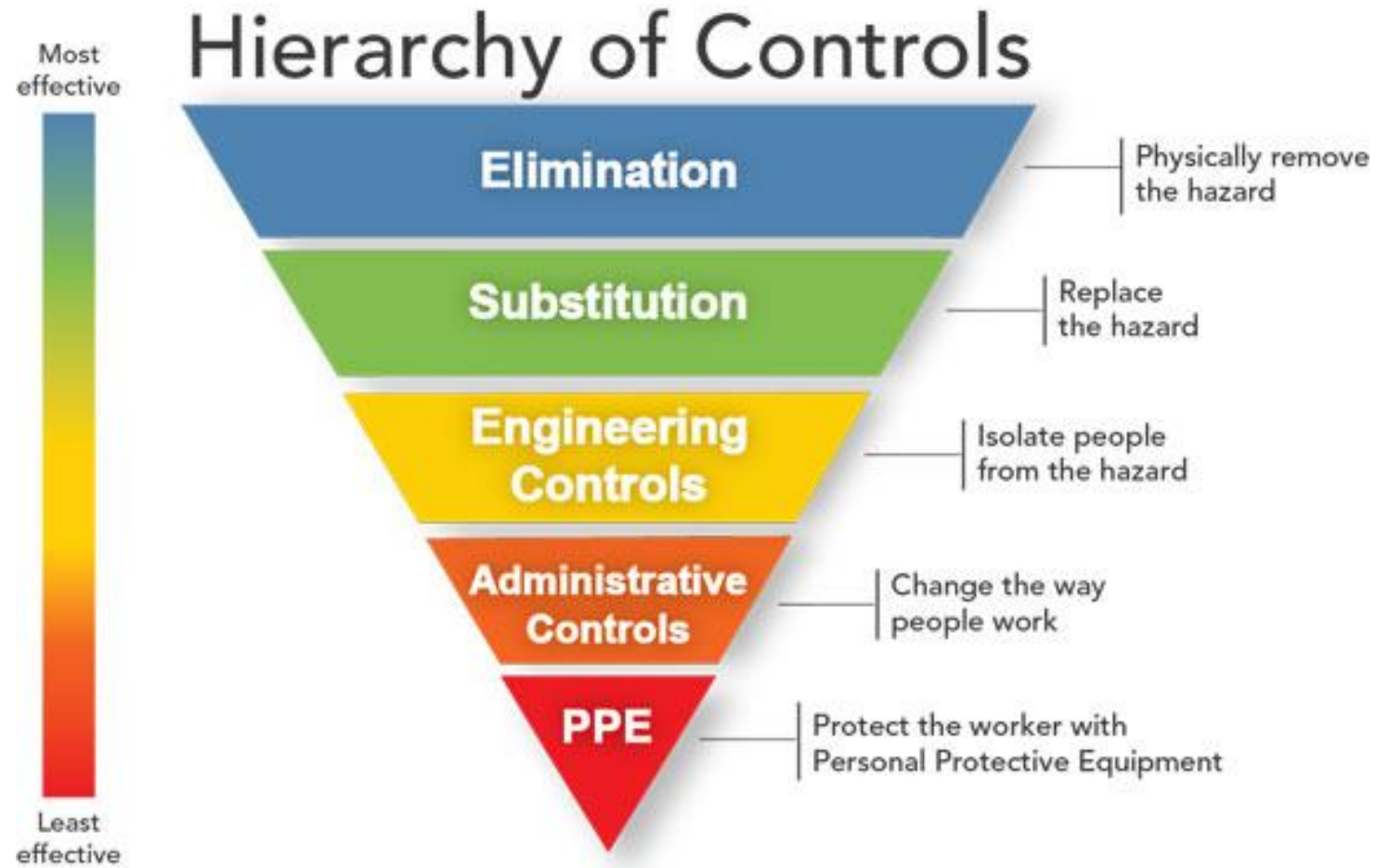
Cal/OSHA Emergency Regulation



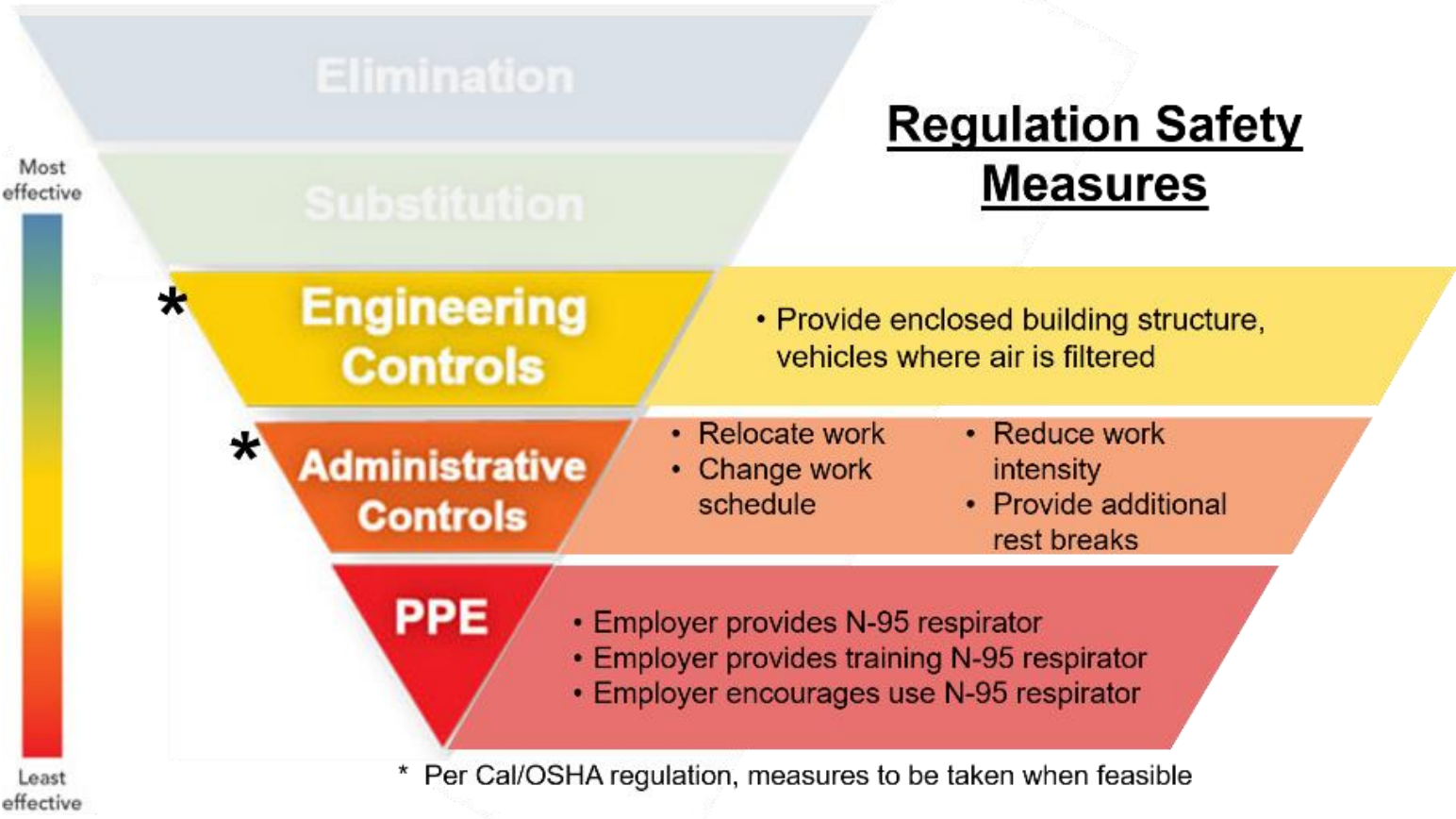
Exemptions, workplaces / operations where:

- Enclosed buildings with mechanical ventilation
- Enclosed vehicles where air is filtered; employer ensures openings are kept closed
- Employer demonstrates $PM_{2.5}$ doesn't exceed AQI 151 by measuring worksite
- Employees exposed to $PM_{2.5} > AQI 151$ for 1 hour or less during shift
- Firefighters engaged in wildland firefighting

Reducing Occupational Hazards



Reducing Occupational Hazards

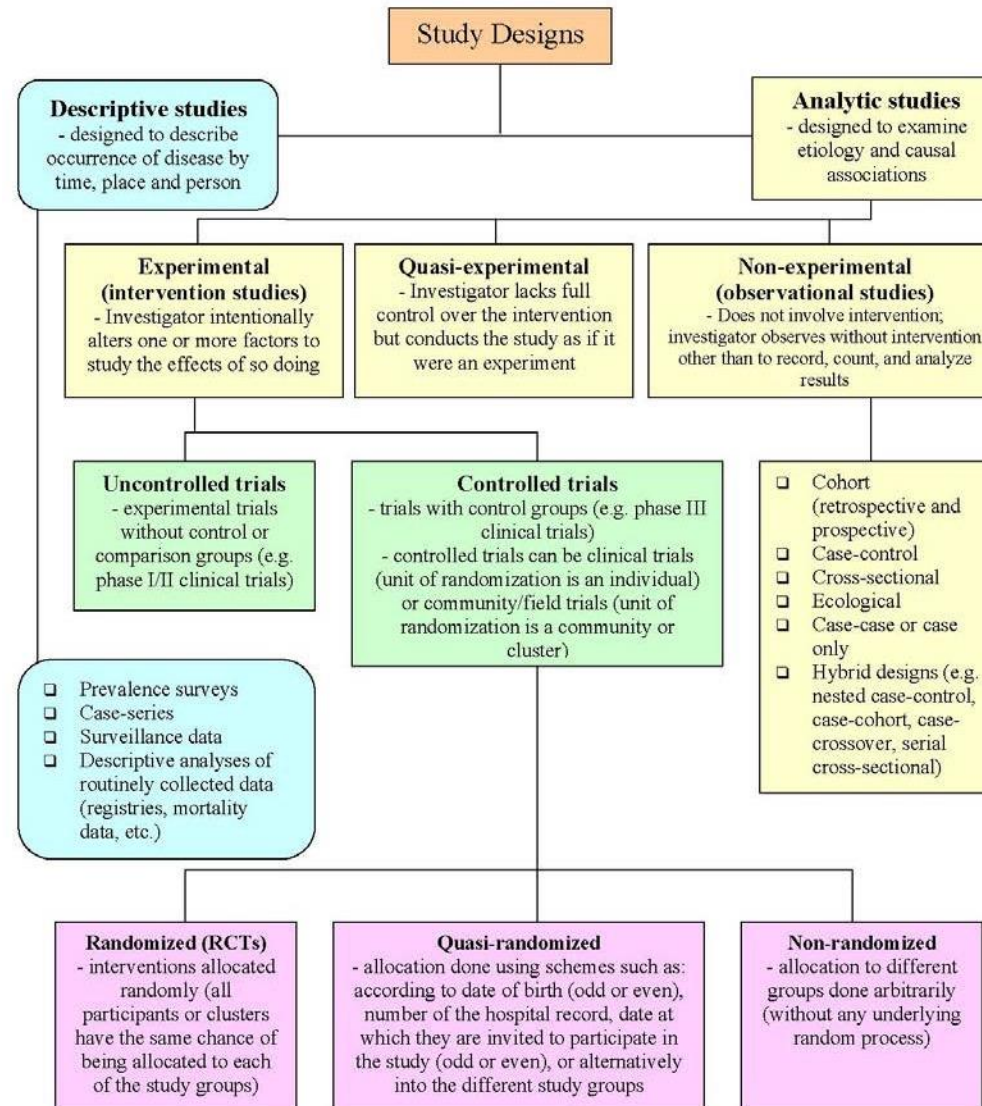


Occupational Epidemiological Studies

Key Characteristics

1. Distributions, determinants of health status in populations;
 - Looking for statistical associations between: exposure/dose and effect/disease
2. Aim to identify whether there is an association between exposure and outcome
 - Classifying individuals or groups as (i) exposed or (ii) non-exposed
 - Often: low, medium, high exposure categories
3. Estimating exposure is critical
 - Magnitude – Ex: What is the pollutant concentration?
 - Duration – Ex: How long does the exposure last?
 - Frequency – Ex: How often do(es) the exposure occur?
4. Exposure estimation approaches
 - Direct Assessment: Point-of-contact measures
 - Biological Markers: Measures biological materials from individuals
 - Indirect Assessments: Environmental monitoring, modeling, questionnaires

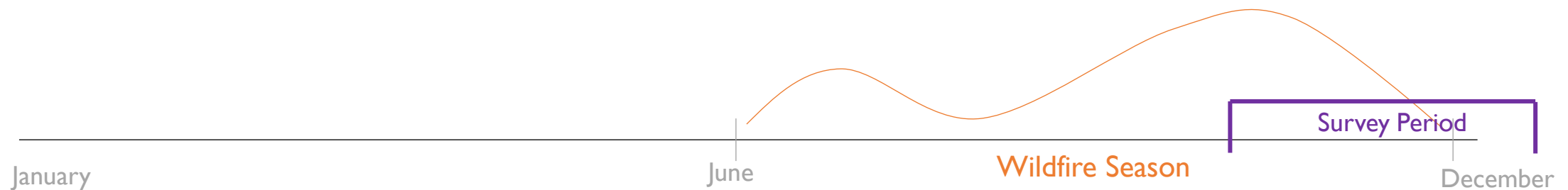
Epidemiological Studies – Types



Pilot Project – *Farmworker Survey*

Qualitative Study Design

- Two (maybe three) study sites in California
- Survey design using CBPR approach
- Facilitated by promotores, current, former farmworkers
- Seek to evaluate
 - Risk perceptions of wildfire smoke
 - Prioritization of current concerns
 - Knowledge of regulation
 - Behaviors taken if/when wildfire smoke event occurs



Formal Communications Materials – Checklist



Wildfire Smoke Exposure – Employer Checklist

The newly adopted regulation, §5141.1 "Protection from Wildfire Smoke," uses the local air quality index (AQI) for PM2.5 to determine when worker protections are needed. If you are an employer and you reasonably anticipate that employees may be exposed to wildfire smoke, review the following action items.

- Monitor the Air Quality Index (AQI) for PM2.5**
 - Have you determined how the AQI for PM2.5 will be monitored (via website, airnow.gov, or direct-reading)?
 - It is a best practice to assign responsibility to monitor the AQI for PM2.5 before each shift and when workers will be onsite.

- Train Workers**
 - Do workers know how to determine if the AQI is worsening due to wildfire smoke?
 - Can workers identify health effects that may be the result of wildfire smoke exposure?
 - Have you informed workers about the voluntary use of NIOSH-approved respirators and do you have a respirator distribution plan if the AQI for PM2.5 reaches 151 or higher?
 - Have you trained workers to properly use a respirator and explained the limitations of the respirator?

Establish Worker Protection Procedures

- Have you created a plan for reducing worker exposure to wildfire smoke?
 - Provide enclosed structures or vehicles where air is filtered, if feasible.
 - Relocate the work, change schedules, reduce work intensity, or provide additional rest periods, where practicable.
- Do you know your local emergency services phone number?
- Consider creating an emergency evacuation plan.

Communicate Workplace Procedures

- Have you informed workers how they will receive updates regarding the AQI for PM2.5 while working?
- Do workers know that they are encouraged to report when they are experiencing symptoms of wildfire smoke exposure?
- Have you informed workers about your plan for reducing exposure during wildfire smoke events, which may include worksite procedures to relocate/reschedule work, reduce work intensity, and/or to take additional rest periods or seek medical attention if needed?



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Western Center for
Agricultural Health and Safety

For more information: aghealth.ucdavis.edu/wildfires

Per updates to Subchapter 7, General Industry Safety Orders, Group 16,
Control of Hazardous Substances, Article 107, Dust, Fumes, Mists, Vapors and Gases,
Section 5141.1 Protection from Wildfire Smoke adopted on July 29, 2019.

Communications Materials – *Employer Training Guide*



Wildfire Smoke Exposure – Employer Training Guide

This guide, in conjunction with the training poster, will help you to provide training on wildfire smoke exposure to your workers. The training is designed to be in compliance with Section 51411, "Protection from Wildfire Smoke," which became law on July 29, 2019.

1. Health Effects of Wildfires

Say: Wildfires affect air quality. This is true even if the fire does not seem close by.

Say: Your health can be affected by breathing in wildfire smoke.

2. Monitoring the AQI for PM2.5

Say: Air quality is reported to the public using a scale called the Air Quality Index or AQI.

3. Respirators

Say: We can take steps to protect ourselves from poor air quality.

Say: For a respirator to work, it must be worn properly.

- *(Demonstrate the following instructions, then distribute respirators and allow workers to try themselves.)*

Say: We are giving you disposable respirators that should be discarded after each use.

4. The Worksite & Reminders

Say: If you feel the symptoms of wildfire smoke exposure that we discussed earlier:

Say: When the AQI is 151 or greater due to wildfire smoke, we may implement the following:

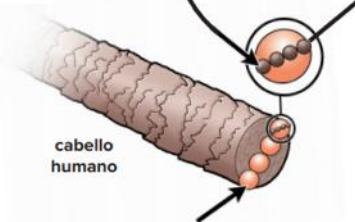
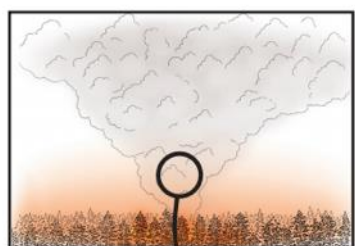
- Relocate your work to *(Describe)*.
- Modify your work schedule *(Describe)*.
- Reduce your work intensity by *(Describe: for example, slow work pace)*.
- Schedule additional rest periods *(Describe: preferably in a building, structure, or vehicle where the air is filtered)*.

Say: Do you have any questions?

Communications Materials – Training Posters

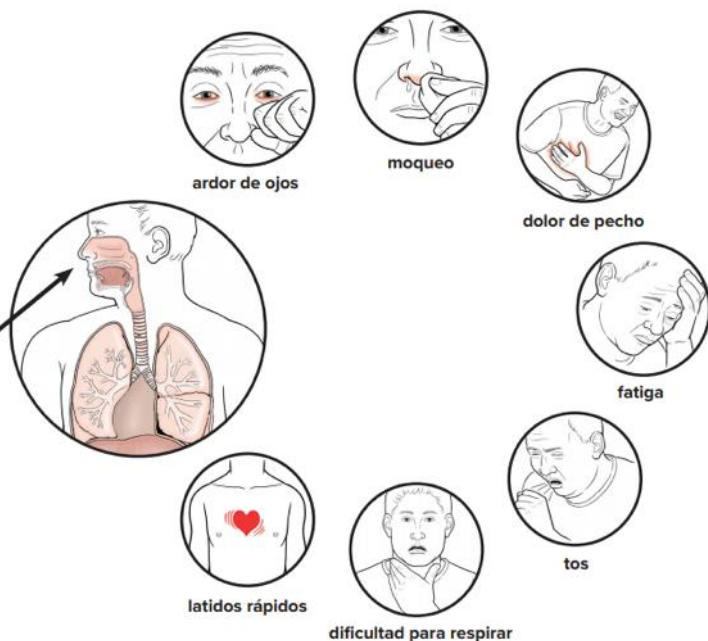


Efectos de los incendios en la salud



cabello humano

partículas pequeñas



Monitoring the AQI for PM2.5

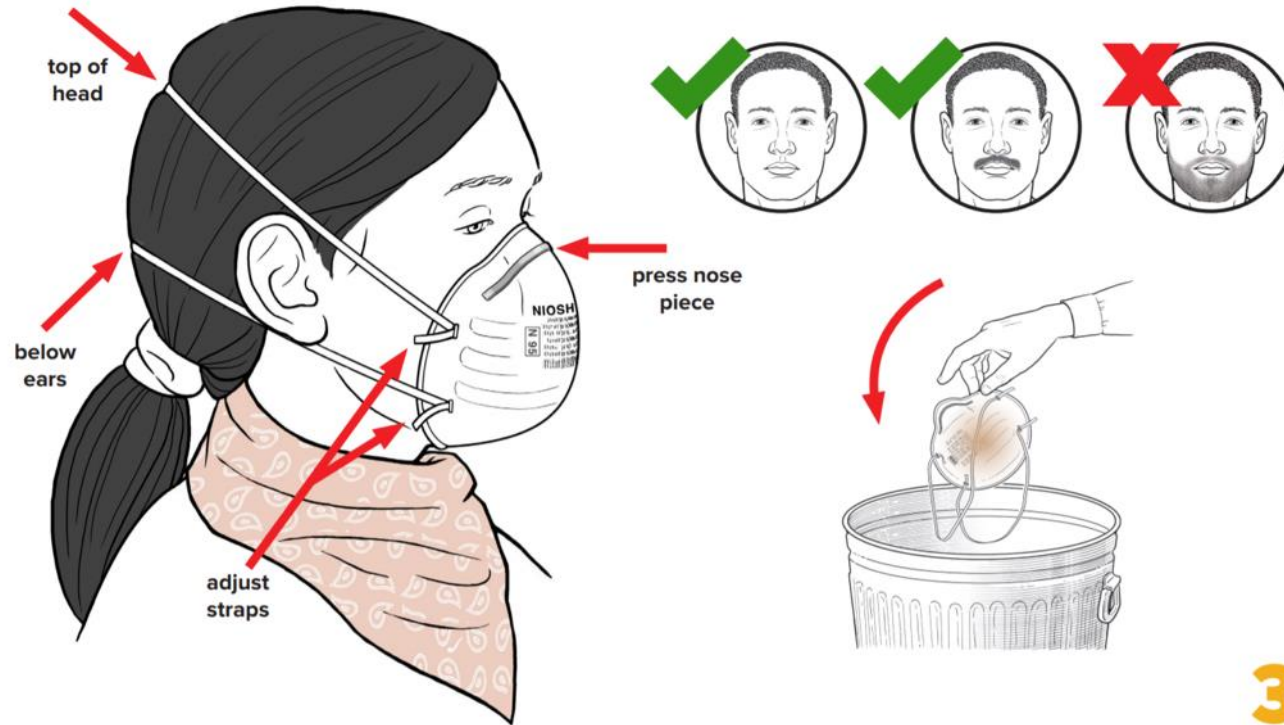
Air Quality Index	
301–500	Hazardous
201–300	Very Unhealthy
151–200	Unhealthy
101–150	Unhealthy for Sensitive Groups
51–100	Moderate
0–50	Good



Communications Materials – *Training Posters*



Respirators



Paul Riley, CSP, MBA - Director of Safety & Health, AgReserves, Inc.



- 28 years of Occupational Safety & Health experience in Mining, Construction, Electrical, General Industry, and Agriculture
- B.S. in Occupational Safety & Health
- Masters in Business Administration
- AgReserves, Inc. is a diversified multinational private agriculture company. Primary crops include beef, milk, potatoes, onions, corn, wheat, soy, olive oil, almonds, walnuts, pistachios, prunes, and pecans.

Wildfires – Paul's Talking Points



Safety Policies & Training



- Important to address wildfires in safety policies and emergency preparedness plans



- Train supervisors to use www.airnow.gov



- Use Cal OSHA as Best Practice
- Air Quality Index (AQI) above 150 – Protect Workers
- AQI above 500 – Respiratory Protection Required
- Communication, Training, & Controls (HVAC, PPE)

Wildfires – Paul’s Talking Points



AgriNW (Potatoes) – Washington Sept. 11-18, 2020



- AQI between 160 and 460



- Sept 11 – Normal harvest hours with voluntary N-95s
- Sept 12-14 – Postponed main potato harvest – only critical ops
- Sept 15-18 – Harvest resumed minus 2 hrs. with voluntary N-95s



- 5-day use on N-95's due to shortage from pandemic
- Lesson's Learned
 - Be ready to allow for less hours/rotation – even during harvest
 - Plan to have sufficient surplus of N95's during fire season



Joel Sherman, VP, Safety & Corp. Affairs, Grimmway Enterprises

- 40+ Years of Occupational Safety & Health Experience in various industries
- 20 Years experience with Grimmway Enterprises, Inc.
- Grimmway is the largest producer of carrots, baby carrots, carrot products and organic vegetables in the United States. Employing more than 5,000, it has operations in California, Oregon, Washington, Colorado, Arizona, Georgia and Florida

Wildfire Smoke - Joel's Talking Points

- Approximately 80% of Grimmway operations occur in locations that have been or could be affected by wildfire smoke (California, Oregon, Washington & Colorado)
- As a first step, strongly recommend identifying the potential for exposure at all locations
- Review State & local regulations (if any) for affected areas
- Develop company procedures and control measures that will both protect employees and meet regulatory requirements (Elimination, Substitution, Engineering, Administrative, PPE)

Wildfire Smoke - Joel's Talking Points

Grimmway Experience

- Wildfire smoke issues developed in August of 2020.
- Affected operations in Washington, Oregon, California (Central Valley & Southern Desert Regions)
- Highest AQI in Northwest but sustained periods exceeding 150 in California in September and even into October
- Implemented program meeting California standards at all affected locations (including voluntary usage of N95 masks and stoppage of operations if AQI exceeds 500)

Wildfire Smoke - Joel's Talking Points

Grimmway Program

- Cal/OSHA Regs are our national guidelines
- Employee & supervisor training on affects of wildfire smoke
- Morning email/text blast to all affected supervisors if AQI projected to exceed 150
- Supervisors responsible to monitor air quality during shift and to make N95 masks available if requested when AQI exceeds 150
- Suspend operations if AQI exceeds 500 (per Cal/OSHA guidelines)



Questions and Discussion

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