



# Respirator Fit Testing Demonstration & Resources

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# Prior to fit testing, instruct growers to:

- Complete chemical label inventory
- Determine what type(s) of respirators are needed and under what conditions they will be used
- Determine who handlers are and have them complete the OSHA Respirator Medical Evaluation Questionnaire
- Complete medical evaluation for each handler with physician or other licensed healthcare professional and obtain written opinion for respirator use



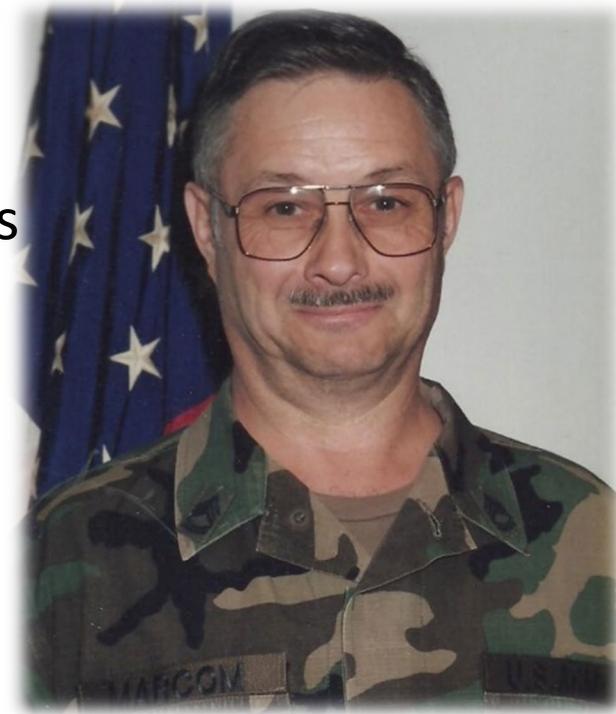
# Pre-test instructions for individuals being fit tested:

- Do not eat, drink anything other than water, smoke or chew gum for at least 15 minutes prior to fit testing
- Bring respirator if they have one but otherwise not to purchase before completing medical clearance and fit testing
- Provide evidence of completed medical evaluation at time of fit testing
- Shave if they have facial hair that will interfere with respirator function
- Bring other PPE that will be worn with respirator (e.g. safety glasses, goggles, hearing protection)



# Conformity Assessment Interpretation Notice August, 2018

When a respirator is required, an employer is prohibited from allowing respirators with tight-fitting facepieces to be worn by employees who have “facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function. Facial hair is allowed as long as it does not protrude through the respirator seal, or extend far enough to interfere with the device’s valve function.



# Respirator Fit Test

- Must be done in accordance with OSHA respirator fit test protocol
- Can be quantitative or qualitative



# Quantitative Fit Testing



- Conducted by occupational health companies or clinics
- Machines are in the \$15-18,000 price range
- Training required prior to use

# Qualitative Fit Testing



- Fit test kits range in price from \$100-\$500
- Used for filtering facepiece and half-face respirators
- Pass/Fail based on subjective response of individual
- Uses
  - isoamyl acetate, which smells like bananas;
  - Saccharin, which leaves a sweet taste in your mouth;
  - Bitrex, which leaves a bitter taste in your mouth; or
  - Irritant smoke, which can cause coughing (not recommended)

# Qualitative Fit Testing



- Fit testing is as much an art as an activity due to individual facial differences and differences in respirators
- Recommend training prior to farms conducting fit tests on their own

# Respirator Selection & Sizing

Different sizes and types of respirators from at least two different manufacturers

- Manufacturers will depend on what is most commonly available in the area (ease of obtaining respirators and replacement filters/cartridges)
- Types (e.g., N95, half-face, full-face) will depend on chemicals most commonly used in the area

## Example

- 3M half-face (small, medium, large)
- North half-face (small, medium, large)
- Sperian/Honeywell N95 (small, medium/large, extra large)
- P100/OV cartridges for 3M and North



# Respirator Selection & Fit

## Trial fit

- Position of mask on nose
- Room for eye protection
- Room to talk
- Position of mask on face and cheeks
- Chin properly placed
- Correct strap tension; not too tight
- Fit across nose bridge
- Respirator proper size to span distance a from nose to chin
- No tendency for respirator to slip
- Individual observation in mirror to evaluate fit and respirator position



# Seal Checks



## **Negative Seal Check**

Respirator should collapse to face



## **Positive Seal Check**

Respirator should lift slightly away from face

# Helping You Wear it Right

## Wearing Your Filtering Facepiece Respirator

1



Place the respirator over your nose and mouth. Be sure the metal nose clip is on top. With models 8210 or 07048, pre-stretch the straps before wearing.

2



Pull the top strap over your head until it rests on the crown of your head above your ears.

3



Pull the bottom strap over your head until it rests just below your ears.

4



Using both hands starting at the top, mold the metal nose clip around your nose to achieve a secure seal.

Filtering Facepiece  
Valved Respirator



Filtering Facepiece  
Non-Valved Respirator



## Check the Seal of Your Filtering Facepiece Respirator Each Time You Don the Respirator.



### Positive Pressure User Seal Check

#### For Non-Valved Respirators

Place both hands completely over the respirator and *exhale*. The respirator should bulge slightly. If air leaks between the face and facesal of the respirator, reposition it and readjust the nose clip for a more secure seal. If you cannot achieve a proper seal, **do not** enter the contaminated area. See your supervisor.



### Negative Pressure User Seal Check

#### For Valved Respirators

Place both hands over the respirator and *inhale* sharply. The respirator should collapse slightly. If air leaks between the face and facesal of the respirator, reposition it and readjust the nose clip for a more secure seal. If you cannot achieve a proper seal, **do not** enter the contaminated area.

# Helping You Wear it Right

## Wearing your 3M™ Half Facepiece Reusable Respirator

1



Place the respirator over your nose and mouth with bottom straps unfastened.

2



Pull the top strap over your head, placing the head cradle on the crown of your head.

3



Hook the bottom straps together behind your neck.

4



Adjust strap tension to achieve a secure fit.



3M™ Half Facepiece Reusable Respirator 6000 Series with Filters

3M™ Half Facepiece Reusable Respirator 6000 Series with Cartridges

## Check the seal of your 3M™ Half Facepiece Reusable Respirator each time you don the respirator

**Note:** Before assigning any respirator to be worn in a contaminated area, a qualitative or quantitative fit test must be performed per U.S. OSHA standard 29CFR 1910.134 or local requirements.

**Note:** Perform a positive and/or negative pressure user seal check each time the respirator is donned. If you cannot achieve a proper seal, do not enter contaminated area. See your supervisor.

### Positive Pressure User Seal Check



Place the palm of your hand over the exhalation valve cover and *exhale* gently. The facepiece should bulge slightly. If air leaks between the face and the faceseal of the respirator, reposition it and adjust the straps for a more secure seal.\*



### Negative Pressure User Seal Check

#### Using Particulate Filters



Place your thumbs over the center of the filters and *inhale* gently. The facepiece should collapse slightly. If air leaks between the face and the faceseal of the respirator, reposition it and adjust the straps for a more secure seal.\*

#### Using Cartridges



Place the palms of your hands over the cartridges and *inhale* gently. The facepiece should collapse slightly. If air leaks between the face and the faceseal of the respirator, reposition it and adjust the straps for a more secure seal.\*

### WARNING

These respirators help reduce exposures to certain airborne particulates. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards 284 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Misuse may result in sickness or death. For proper use, see package instructions, supervisor, or call 3M UNRESO Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.

\* If you cannot achieve a proper seal, do not enter contaminated area. See your supervisor.

# Sensitivity Test

- Have the individual put on the test hood
- Ask them to:
  - Breathe through a slightly open mouth with tongue extended; and,
  - Tell you when they detect sensitivity solution
- Using the nebulizer marked 'sensitivity', spray the sensitivity solution into the enclosure in the front of the hood. To produce the aerosol, squeeze the nebulizer bulb firmly so that the bulb collapses completely and then release so it fully expands
- Give an initial 10 squeezes, repeating rapidly. If the individual senses the sensitivity solution, the screening test is completed and the taste threshold is noted as 10 regardless of the number of squeezes actually completed (e.g., anything between 1 and 10 is recorded as 10).



# Sensitivity Test



- If the first response is negative, give more 10 squeezes, repeating rapidly
- Again, ask the individual to tell you when they detect the sensitivity solution
- If the individual reports sensing the sensitivity solution during the second 10 squeezes, the screening test is completed and the taste threshold is noted as 20 regardless of the number of squeezes actually completed (e.g., anything between 11 and 20 is recorded as 20)

# Sensitivity Test

- If the second response is negative, give more 10 squeezes, repeating rapidly
- Again, ask the individual to tell you when they detect the sensitivity solution
- If the individual reports the sensitivity solution during the third 10 squeezes, the screening test is completed and the taste threshold is noted as 30 regardless of the number of squeezes actually completed (e.g., anything between 21 and 30 is recorded as 30)
- If no sensitivity after 30 squeezes, the test cannot be completed. Use an alternate qualitative method or refer for quantitative testing.
- If the individual has sensitivity, ask them to take note of it for reference during the fit test.



# Fit Test Steps

- Using nebulizer marked 'fit test', spray the same number of squeezes of fit test solution into the opening on the front of the hood as recorded for the sensitivity test (e.g., 10, 20 or 30)
- To maintain an adequate concentration of aerosol during the test, inject  $\frac{1}{2}$  the number of squeezes (5, 10 or 15) every 30 seconds for the duration of the test procedure
- Squeeze the bulb to fully collapse it and then release to fully expand between each squeeze. Hold bulb upright to ensure aerosol generation.



# Fit Test Steps

Have the individual stand in a normal position and do each of the following for 1 minute:

- Normal breathing: without talking
- Deep breathing: breathe slowly and deeply, taking caution not to hyperventilate
- Turn head side to side: pause at shoulder on each side to breathe in
- Move head up and down: pause when looking at ceiling
- Talk out loud slowly and loud enough to be heard: preferably read Rainbow Passage; can count to 100 or recite memorized poem or song
- Bend over: bend at waist as if touching toes; jogging in place can be substituted
- Normal breathing: same as first exercise



# Fit Test Steps

If the test fails:

- Wait 15 minutes and perform sensitivity test
- Repeat respirator fit test after re-donning respirator and doing seal checks
- A second failure may indicate that a different size respirator or model/manufacturer is needed.
- Check the nebulizer to be sure that it is not clogged; clean and retest



FIT TEST RECORD

Employee Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Employee ID Number: \_\_\_\_\_ Job Title: \_\_\_\_\_  
Employer: \_\_\_\_\_ Location: \_\_\_\_\_  
Medically Cleared: YES NO  
Respirator Type Selected: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_ Size: \_\_\_\_\_

CONDITIONS WHICH COULD AFFECT RESPIRATOR FIT:

Clean Shaven \_\_\_\_\_ Facial Scar \_\_\_\_\_  
Facial Hair \_\_\_\_\_ Dentures Absent \_\_\_\_\_  
Glasses \_\_\_\_\_ Other \_\_\_\_\_

COMMENTS: \_\_\_\_\_

FIT CHECKS:

Negative Pressure PASS \_\_\_\_\_ FAIL \_\_\_\_\_ NOT DONE \_\_\_\_\_  
Positive Pressure PASS \_\_\_\_\_ FAIL \_\_\_\_\_ NOT DONE \_\_\_\_\_

FIT TESTING:

Quantitative FIT FACTOR \_\_\_\_\_

Qualitative ISOAMYL ACETATE PASS \_\_\_\_\_ FAIL \_\_\_\_\_  
                  IBANAMA OIL  
SACCHARIN (1/2 of squeeze) PASS \_\_\_\_\_ FAIL \_\_\_\_\_  
BITREX (1/2 of squeeze) PASS \_\_\_\_\_ FAIL \_\_\_\_\_  
SMOKE PASS \_\_\_\_\_ FAIL \_\_\_\_\_

COMMENTS: \_\_\_\_\_

EMPLOYEE ACKNOWLEDGEMENT OF RESULTS:

Employee Signature: \_\_\_\_\_  
Test Conducted By: \_\_\_\_\_  
Date: \_\_\_\_\_

Respirator Fit Test Card  
Name: \_\_\_\_\_ Test Date: \_\_\_\_\_  
ID #: \_\_\_\_\_ Next Test Due: \_\_\_\_\_  
Respirator Make/Model: \_\_\_\_\_  
Protocol: 29CFR 1910.134  
Pass or Fail: \_\_\_\_\_

Fit test conducted by \_\_\_\_\_

# Qualitative Fit Test Record & Sample Pocket Card

CERTIFICATE OF FIT TESTING

THIS IS TO CERTIFY THAT: **JOHN DOE**

In accordance with 29CFR1910.134, Respiratory Protection has successfully completed qualitative fit testing and instructed in the use, limitations and maintenance with the following respirator:

Make: 3M Model: 6300 Size: LARGE

Date: 04-20-2016 Expires: 04-20-2017

Technician: \_\_\_\_\_

# RESPIRATOR FIT TEST RECORD

Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_  
 State: \_\_\_\_\_ Zip: \_\_\_\_\_ Tel: \_\_\_\_\_

Date: \_\_\_\_\_

Name of Fit Tester: \_\_\_\_\_

Fit testing conducted in compliance with OSHA Standard 1910.134(F).   
 If other local, state or federal regulations apply (such as MSHA), you may list them here: \_\_\_\_\_

Signature: \_\_\_\_\_

Type of OSHA accepted fit test protocol used: (Qualitative): \_\_\_\_\_ Saccharin \_\_\_\_\_ Bitrex™ \_\_\_\_\_ Isoamyl Acetate \_\_\_\_\_ Irritant Smoke

(Quantitative): Portacount Model \_\_\_\_\_ Occupational Health Dynamic Model #: \_\_\_\_\_

Name (please print)	Signature	Date of Medical Clearance	Respirator Fit Tested (Make, Model, Style, Size) (Ex. 3M 6800, full-face, medium)	Fit Test		Could not be fit tested due to:
		Cleared with limitations (indicate Y=yes or N=no)		Pass	Fail	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	

Comments: \_\_\_\_\_  
 \_\_\_\_\_

# Resources



- OSHA Respiratory Protection eTool

[https://www.osha.gov/SLTC/etools/respiratory/respirator\\_basics.html](https://www.osha.gov/SLTC/etools/respiratory/respirator_basics.html)

- OSHA Respirator Fit Testing Video

[https://www.osha.gov/video/respiratory\\_protection/fittesting.html](https://www.osha.gov/video/respiratory_protection/fittesting.html)

- Guide to Using 3M Qualitative Fit Test Kit

<http://multimedia.3m.com/mws/media/4739600/guide-to-using-the-3m-qualitative-fit-test-kits.pdf>

- 3M Respirator Fit Test Video

[https://www.youtube.com/watch?v=Syj\\_zeNtLGI](https://www.youtube.com/watch?v=Syj_zeNtLGI)



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