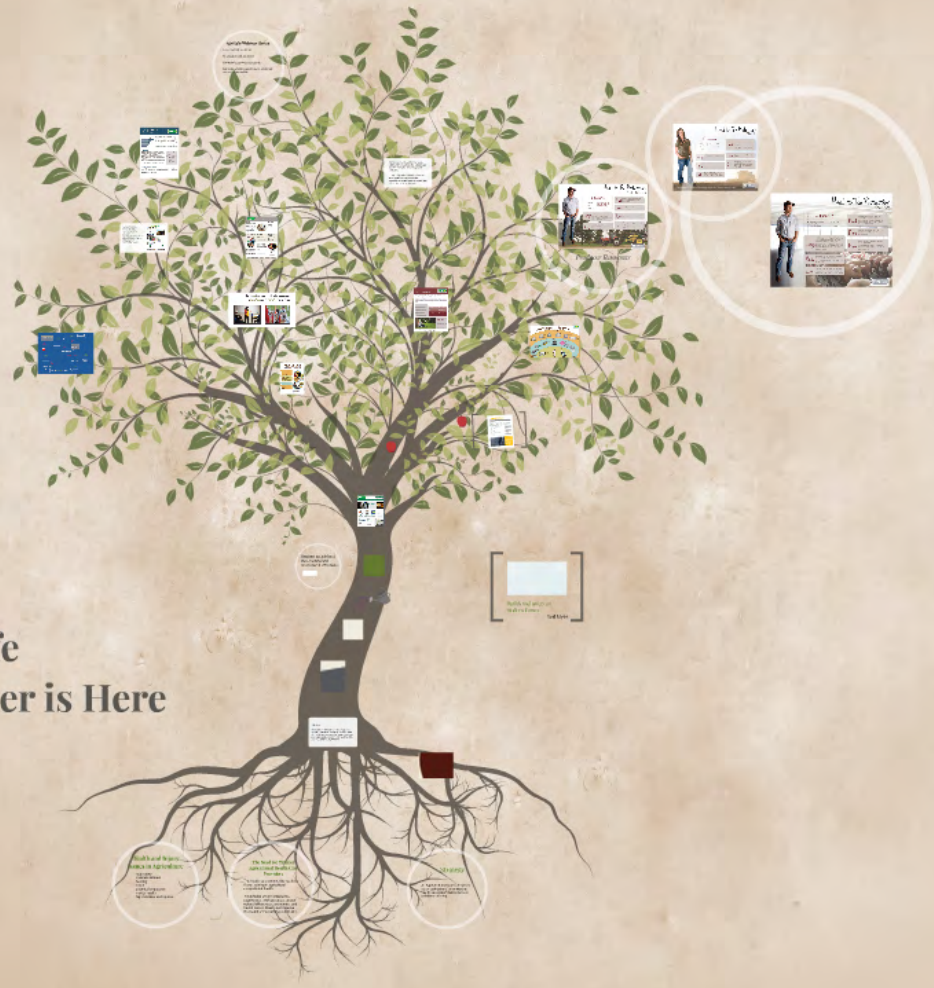

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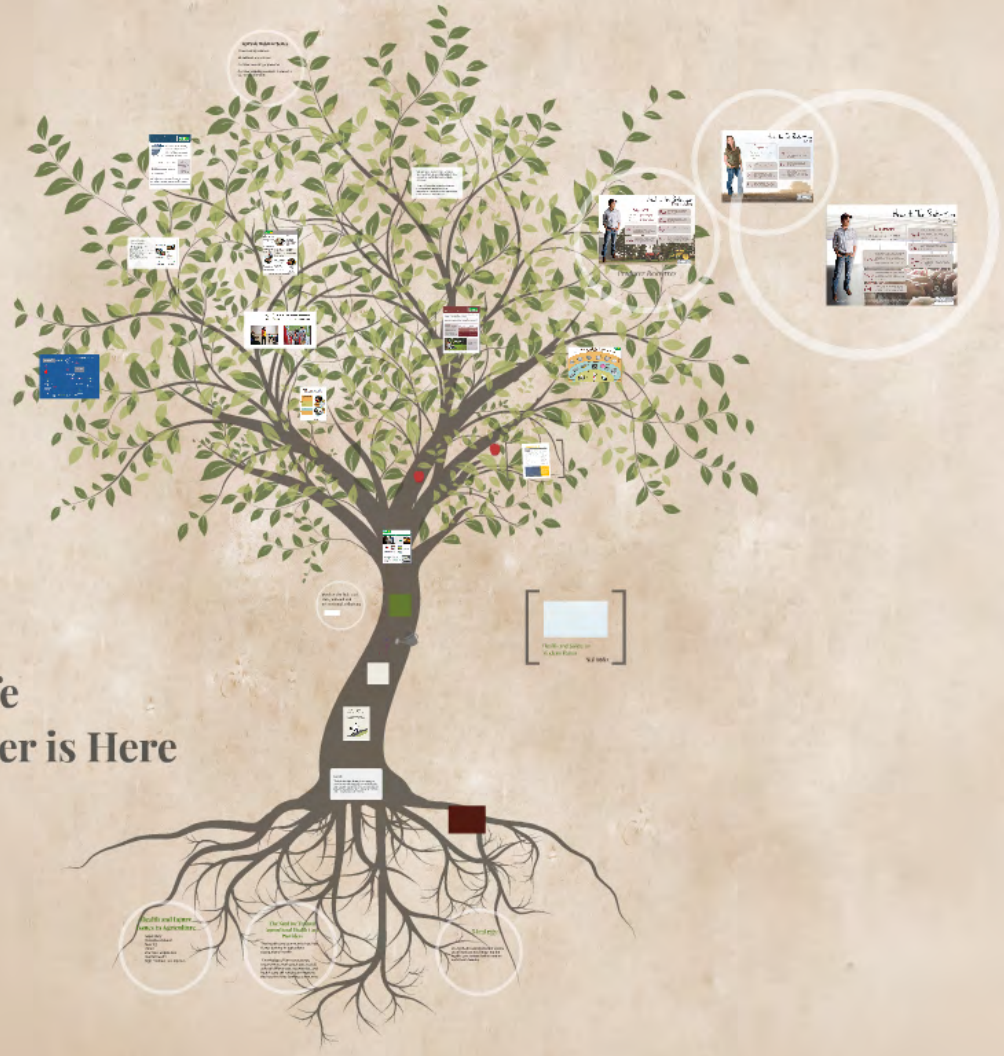

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Health and Injury Issues in Agriculture

respiratory
musculo-skeletal
hearing
vision
chemical exposures
mental health
high fatalities and injuries

The Need for Trained Agricultural Health Care Providers

The health care community has little, if any, training in agricultural occupational health.

Knowledge of farm exposures, ergonomics, work practices, social/ cultural differences, economics, and health care utilization can improve the health of the farming community.

Strategy

An AgriSafe trained provider serves as an early point of entry into the health care system before serious conditions develop.

Agricultural Health and Safety Impact

Goal: develop and implement programs for each age group in the continuum of life.

- Identify Risks
- Identify Needs
- Develop programs
- Collaborate
- Partner
- Implement
- Evaluate

Continuum of Life

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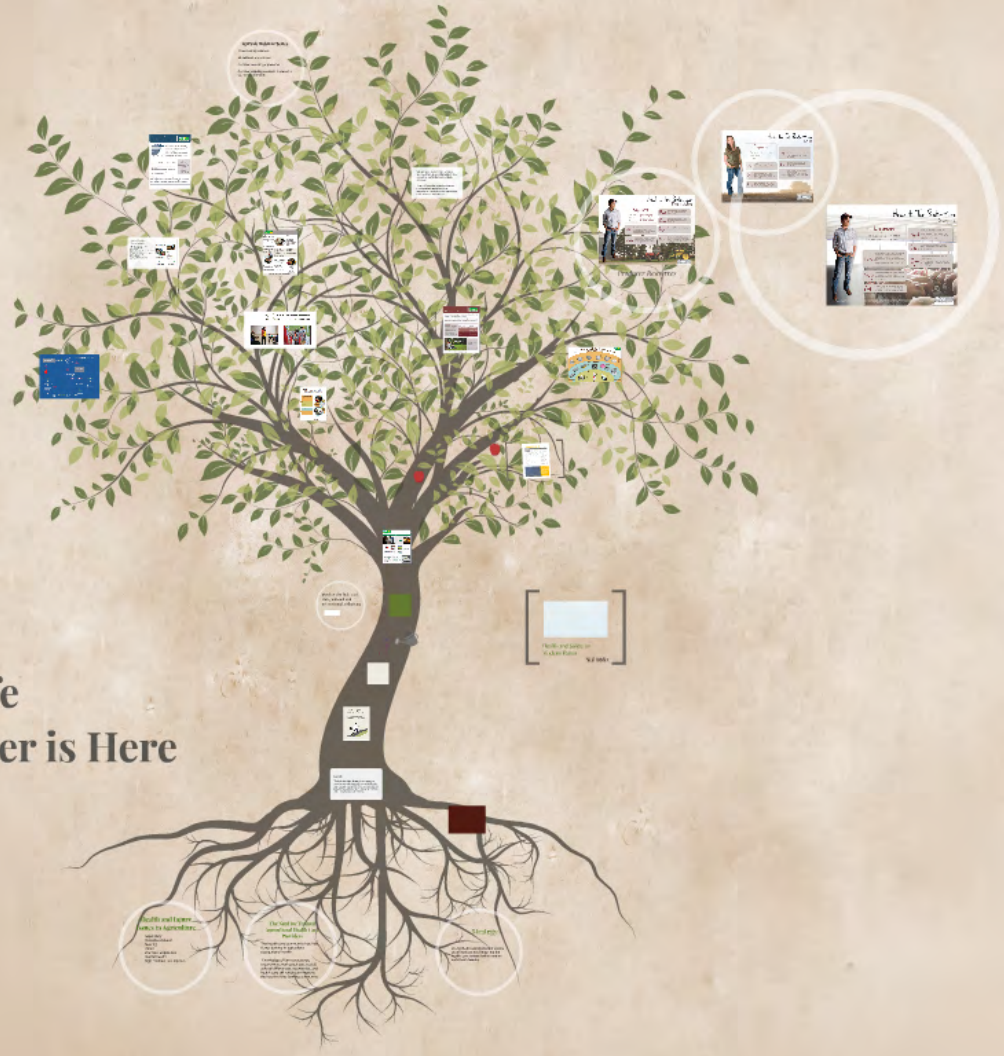

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Mission

The Mission of the Network is to support a growing network of trained agricultural health and safety professionals that assure access to preventive service for farm and ranch families and the agricultural community.

Challenges

Challenges for health care providers serving rural/agricultural communities:

- nurses in rural communities are often the front line care for work related injury / illness
- few businesses have identified safety managers
- strong dependence on local health care provider
- health care providers may have limited access to professional development in agricultural medicine

Support

AgriSafe's role is to overcome these challenges through a collaborative approach. Network initiatives prepare a workforce of rural providers in the field of occupational agricultural health. Membership options are diverse and include:

- state affiliate level
- organization level
- certified level
- individual

Members include local, state, national and international affiliations

AgriSafe Australia

AgriSafe® Network of North Carolina

Impact

AgriSafe shifts the quality of health care towards an occupational approach so that farmers can receive the same occupational health care afforded to other industries. Core components of AgriSafe's innovative occupational health initiatives are:

- clinical resources
- advanced training programs
- outreach services
- distance education
- Ag Health Risk Assessment
- college health curriculum

Home | About Us | Contact Us | Member Landing Page

AgriSafe® Network

Protecting the People who Feed America

Become A Member | Member Login

Search our site...

College Health » | Safety Store | Ag Producer Resources » | Training » | Professional Resources » | Become a Member »

Access trainings when the time is right for you.

Read More

Explore AgriSafe's Impact

News & Features

NFSHW

Join us & other Ag Heath & Safety organizations Sept.21-25, for National Farm Safety and Health Week. read more...

Avian Influenza

AgriSafe and NIOSH Ag Centers collaborated to create this important avian flu resource. read more...

Ag Medicine Course

VT. Farm Health Task Force announces their 2015 Agricultural Medicine Training read more...

Sign Up for News and Updates

Don't miss AgriSafe's latest news and events!

Sign up to get our latest news and events sent directly to your inbox.

Sign Up for Email Updates

For Email Marketing you can trust

Get Involved

Call for MRASH Abstracts

Abstracts are being accepted until **August 10, 2015** for all rural and agricultural health and safety research, surveillance, education, outreach, and intervention presentations.. read more...

Become a Presenter

Consider presenting your work through AgriSafe's Webinar Series. Please contact Stacey Jenkins at sjenkins@agrisafe.org

Upcoming Events

Prevention Strategies to Protect Women Working in Agriculture
Tue Aug 18, 2015 12:00 PM

Fall Prevention for Agricultural Producers
Thu Aug 27, 2015 12:00 PM

Learning to Use the "Stand T.A.L.L." Instructional Materials: A train the trainer webinar
Mon Sep 14, 2015 3:30 PM

Member Locator Map

Heat related illnesses

Farmers and agricultural workers perform work in a wide range of environmental conditions. The severity of symptoms will vary, but knowing the warning signs of heat related illness can save lives. According to a 2008 Centers for Disease Control (CDC) study, during 1992-2006, a total of 68 crop workers died from heat stroke. This represents a rate nearly 20 times greater than all U.S. civilian workers.

Special populations within the agricultural community may have elevated risk for complications from the heat. Older workers may have more difficulty regulating body temperature. Young children sweat less and quickly produce more heat than adults. Farmworkers may be working far from water or shade, may be compensated in a way that discourages taking a break, and may be fearful of reporting any symptoms of heat related illness to supervisors.

Prevention

To prevent heat related illness and fatalities:

- Drink water every 15 minutes, even if you are not thirsty.
- Rest in the shade to cool down.
- Wear a hat and light-colored clothing.
- Learn the signs of heat illness and what to do in an emergency.
- Keep an eye on fellow workers.
- "Easy does it" on your first days of work in the heat. You need to get used to it.

(Source: OSHA's Water, Rest, Shade, campaign)

Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning
91°F to 103°F	Moderate	Implement precautions and heighten awareness
103°F to 115°F	High	Additional precautions to protect workers
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures

Resource: https://www.osha.gov/SLTC/heatillness/edresources.html

Worker resting in the shade wearing sun safe clothing.

Factors associated with heat related illness

- Outdoor temperature
- Length of sun exposure
- Dehydration
- Workloads and speed of work
- Age
- Preexisting health conditions
- Acclimatization (how new the person is to the heat and the job)

Producer Resources

Producer Resources

Head to Toe Protection
Grain
Exposures
• Flying objects
• Grain Dust
• Mold
• Noise
• Sun
Head
When exposed to impact and penetration hazards wear a safety helmet or hard hat that fits appropriately and meets the (ANSI) Z89.1-2009 standard.
For sun exposure wear sun safe hat or sunscreen.
Lungs
NIOSH approved air purifying 2-strap N95 or N100 respirator or canister respirator with N100 filter
Ears
Hearing protection plugs or muff when exposed to noise above 85 decibels (dB)
Body
Sun safe clothing with UPF of at least 30 or use a broad spectrum (UVA/UVB) sunscreen with an SPF of 30 or higher
Eyes
Safety glasses that meet ANSI Z87.1 NIOSH Standard
When exposed to sun - Sunglasses that block 99 to 100 percent of UVA and UVB light.
Feet
Choose work shoes for the job and hazard that meet the ASTM F-2412-2005 and ASTM F-2413-2005 standard
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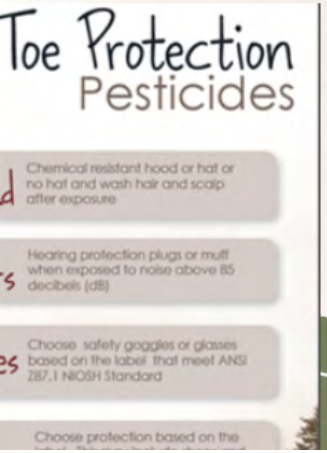
Toe Protection
Pesticides
Chemical resistant hood or hat or no hat and wash hair and scalp after exposure
Hearing protection plugs or muff when exposed to noise above 85 decibels (dB)
Choose safety goggles or glasses based on the label that meet ANSI Z87.1 NIOSH Standard
Choose protection based on the

Head to Toe Protection
Grain
Exposures
• Flying objects
• Grain Dust
• Mold
• Noise
• Sun
Head
When exposed to impact and penetration hazards wear a safety helmet or hard hat that fits appropriately and meets the (ANSI) Z89.1-2009 standard.
For sun exposure wear sun safe hat or sunscreen.
Lungs
NIOSH approved air purifying 2-strap N95 or N100 respirator or canister respirator with N100 filter
Ears
Hearing protection plugs or muff when exposed to noise above 85 decibels (dB)
Body
Sun safe clothing with UPF of at least 30 or use a broad spectrum (UVA/UVB) sunscreen with an SPF of 30 or higher
Eyes
Safety glasses that meet ANSI Z87.1 NIOSH Standard
When exposed to sun - Sunglasses that block 99 to 100 percent of UVA and UVB light.
Feet
Choose work shoes for the job and hazard that meet the ASTM F-2412-2005 and ASTM F-2413-2005 standard
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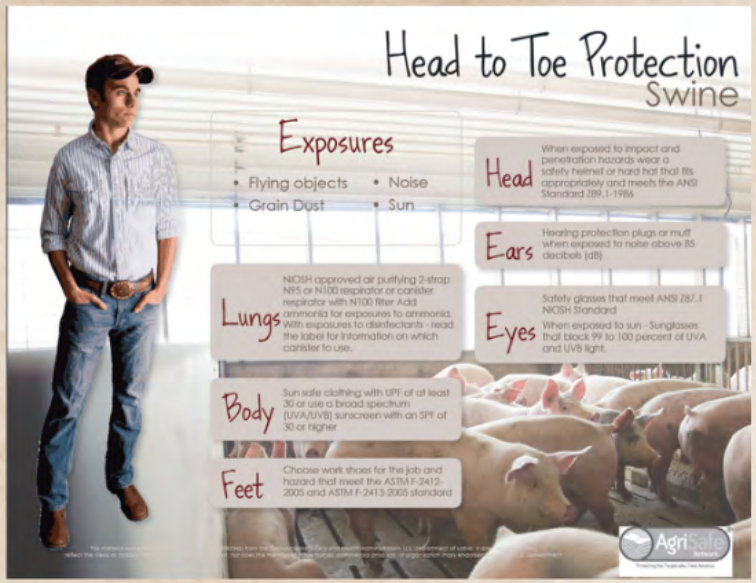
Head to Toe Protection
Swine
Exposures
• Flying objects
• Grain Dust
• Noise
• Sun
Head
When exposed to impact and penetration hazards wear a safety helmet or hard hat that fits appropriately and meets the ANSI Standard Z89.1-1986
Ears
Hearing protection plugs or muff when exposed to noise above 85 decibels (dB)
Lungs
NIOSH approved air purifying 2-strap N95 or N100 respirator or canister respirator with N100 filter Add ammonia for exposures to ammonia. With exposures to disinfectants - read the label for information on which canister to use.
Eyes
Safety glasses that meet ANSI Z87.1 NIOSH Standard
When exposed to sun - Sunglasses that block 99 to 100 percent of UVA and UVB light.
Body
Sun safe clothing with UPF of at least 30 or use a broad spectrum (UVA/UVB) sunscreen with an SPF of 30 or higher
Feet
Choose work shoes for the job and hazard that meet the ASTM F-2412-2005 and ASTM F-2413-2005 standard
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Agricultural Respirator Selection Guide

Use Only NIOSH Approved Respirators

Two Strap Air Purifying Respirators

3M 8210 N95
- Grain
- Hay
- Hogs
- Pesticides (solids)
- Poultry
- Sanding
- Woodworking

3M 8511 N95
Exhalation Valve
- Grain
- Grinding
- Hay
- Hogs
- Pesticides (solids)
- Poultry
- Sanding
- Woodworking

3M 8247 R95
Charcoal Filter
- Hog Odors
- Poultry Odors
- Nuisance
- Odors

3M 8271 P95
Full Seal
- Grain
- Grinding
- Hay
- Hogs
- Poultry
- Sanding
- Woodworking

3M 8577 P95
- Oil and non-oil based aerosol particles
- Nuisance levels of organic vapors
- Solvents
- Degreasers
- Resins

3M 8233 N100
- Grain Dust
- Grain Handling
- Grinding
- Hay
- Mold
- Pesticides (solids)
- Solid Pesticides
- Spores
- Welding

Half Mask Air Purifying Respirators

Ammonia
- Anhydrous Ammonia
- Hogs
- Poultry

Acid Gas
- Disinfectants
- Bleach

Cartridge Face Piece
Use with Cartridges and Particulate Filters

Particulate Filter P100
- Feed or Grain Dust
- Hogs
- Mold
- Organic Dust
- Poultry
- Spores
- Welding
- Wood working

Filter Holder

Filter Cover

Particulate Filter N95
Use as Pre Filter with Cartridges

Other Types of Respiratory Protection

Organic Vapor
- Paint
- Pesticides

Powered Air Purifying
Use Appropriate Filter/Cartridge
- Grain Handling
- Livestock & Poultry Confinement
- Pesticides
- Woodworking

*Not for use in an oxygen deficient environment

Supplied Air
- Carbon Monoxide
- Fumigation (enclosed areas)
- Hydrogen Sulfide
- Methane
- Manure Pits
- Paint

Self Contained Breathing
- Carbon Monoxide
- Hydrogen Sulfide (manure pits)
- Methane
- Silo entry

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Airborne (or Respiratory) Hazards may result from either an oxygen deficient atmosphere or breathing air contaminated with toxic particles, vapors, gases, fumes or mists. The proper selection and use of a respirator depend upon an initial determination of the concentration of the hazard or hazards present in the workplace, or the presence of an oxygen deficient atmosphere.

TAKE FIVE 5

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Next Time You Visit Your Health Care Provider Take Five Minutes to Talk About Your Farm Work

If your health care provider wasn't raised on a farm, chances are they know very little about your agricultural risks and occupational exposures. Educate your health care provider on what tasks you perform on the farm.

The following activities are especially important:

- Heavy lifting
- Handling of pesticides
- Unloading grain
- Operating machinery
- Handling livestock in a confined space
- Sleep patterns
- Off the farm work

Sample Questions to Ask Your HealthCare Provider

- "I am exposed to loud noise from machinery and/or livestock; should I get a baseline hearing test?"
- "What over the counter medications can interfere with operating machinery? How about prescriptions?"
- "How can I help prevent agricultural illness and injuries?"

Encourage Friends and Family to Communicate Health Concerns

Talking to Your Teen's Health Care Provider

Teenagers often feel they are invincible and are capable of performing all farm tasks regardless of the risk.

Teach your teen how to talk to the health care provider so together they can prevent farm related illness & injury.

Invest in Your Health

Our goal is to empower students to recognize agricultural health and safety risks, and become their own health advocates. AgriSafe provides customized educational and preventive screening services for students at two year or four year agricultural college programs.

Educate

The following educational topics are covered:

- Agricultural Hazards
- Ergonomics
- General Health and Wellness
- Hearing Loss
- Injury and Illness Prevention
- Respiratory Hazards
- Pesticides and Human Health
- Skin Cancer

Prevent

Each student will receive the following:

- BMI
- Blood Pressure Screening
- AgriSafe Health Risk Assessment
- Respirator Fit Test

Optional Add-On Services:

- Basic Lung Function Screening and Review of Results
- Dermascan to Screen for Sun Damage
- Hearing Screening

Protect

Each Student Will Receive the Following:

- AgriSafe Head to Toe Personal Protective Equipment Packet (Chemical Gloves, Ear Plugs, Goggles, and Respirators)
- Direction on Use and Care of Personal Protective Equipment

Sustain

Each Student Will Receive the Following:

- AgriSafe Membership
- Educational Materials
- Follow Up Behavior Survey
- Web-Based Health Tools
- Web-Based Trainings

Contact Us

For more information on adopting this program at your college or university contact:

Carolyn Sheridan
AgriSafe Network Clinical Director
csheridan@agrisafe.org
866.312.3002

Our *goal* is to help your business maintain a *healthy* and *productive* workforce.

Understanding OSHA Agricultural Standards

Objective: Review the six OSHA standards and other agency directives related to production agriculture.

Introduction

Understanding Occupational Safety and Health Administration (OSHA) as it relates to agricultural producers is a critical component of occupational health nursing.

Because of the diverse nature of work and myriad occupational exposures for workers in production agriculture, there remains a great deal of confusion and misunderstanding related to OSHA standards and exemptions. In many of our rural and agriculture dependent communities, hospital and clinic nurses find themselves on the front line of caring for those work related injuries and illnesses.

Twenty-five states, Puerto Rico and the US Virgin Islands have occupational health and safety programs. State programs can supersede the federal OSHA guidelines (state standards must be equal to or can be more stringent than federal standards).

OSHA Agricultural Specific Standards

29 CFR 1928

Purpose & Scope

Applicability of Standards

1. Roll over protective structures for agricultural tractors
2. Protective frames for wheel type agricultural tractors
3. Guarding of farm field equipment, farmstead equipment, and cotton gins
4. Protective enclosures for wheel type agricultural tractors
5. Field sanitation
6. Cadmium

Examples of Applicable Standards

29 CFR 1910 – General Industry

Storage and handling of anhydrous ammonia
Temporary labor camps
Hazard communications
Hearing conservation & noise exposure
Eye & face protection
Respiratory protection

General Duty Clause

OSH Act Section 5(a)(1)

Requires employers to furnish each of his/her employees a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm.

The General Duty Clause is used to cite employers for recognized hazards where there is no direct standard that applies to the operation. If there isn't a standard that applies directly to agricultural operations, OSHA would utilize the General Duty Clause, referencing the applicable standard.

OSHA Standards Should be Followed Regardless of Exemption Status

Although Occupational Safety and Health Administration (OSHA) cannot inspect or cite farms with 10 or fewer employees, in a court of law OSHA rules and regulations can be used to identify and prosecute for unsafe conditions that could lead to worker injury or death. If no other standards apply, the OSHA General Duty clause is a frequent reference point.

Recommending Personal Protective Equipment (PPE) in the Clinical Setting

Guidelines for appropriate PPE are found in the OSHA PPE standards, NIOSH guidelines, EPA regulations and on the labels of most agricultural products. Contact AgriSafe, a manufacturing safety director in your region, or your extension agent for additional help.

Other Important Federal Agencies

National Institute for Occupational Safety & Health (**NIOSH**) – an agency of the Center for Disease Control and Prevention that performs research and provides guidelines related to exposure levels and personal protective equipment. www.cdc.gov/niosh

Environmental Protection Agency (**EPA**) – writes and enforces regulations that work to protect human health in the environment. For agriculture, the EPA enforces the Worker Protection Standard for agricultural pesticides. www.epa.gov/agriculture

Useful OSHA Resources Available at www.osha.gov

- OSHA Training Education Centers
- Quick Start Compliance Assistance
- OSHA Small Business Handbook -2209-02R 2005
- OSHA Heat Stress Smartphone Application

www.agrisafe.org
info@agrisafe.org
866.312.3002

NOTE: These standards are only a few examples of OSHA standards that an employer must consider. It is the responsibility of the employer to review, understand and implement the standards that apply to their workplace.

This material was produced under a grant (SH24891SH3) from the Occupational Health and Safety Administration, U.S. Department of Labor.
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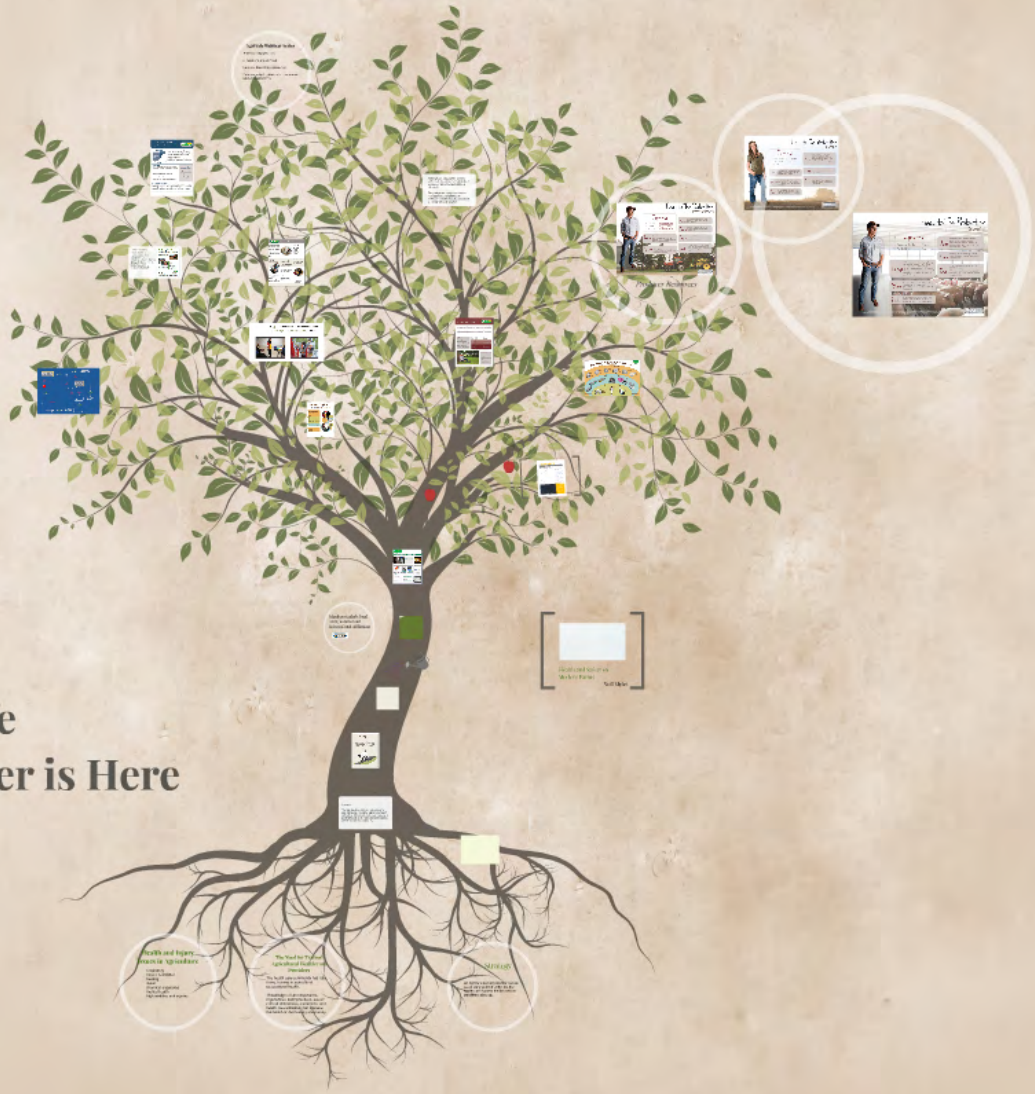

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Health and Safety on Modern Farms

Neil Mylet

AgMed Training Topics Include:

- Agricultural Respiratory Hazards
- Acute Agricultural Injuries
- Skin Diseases
- Physical Factors Affecting Health in Agriculture
- Behavioral Health Issues
- Musculoskeletal Diseases and Ergonomics
- Health Effects of Pesticides
- Zoonotic Diseases
- Cancer in Agricultural Populations
- Agricultural Health Care Delivery

Save the Date - June 10-14, 2013

Agricultural Medicine:

Occupational and Environmental Health for Rural Health Professionals
The Core Course

Iowa's Center for Agricultural Safety and Health and the Great Plains Center for Agricultural Health will host a training program for health care professionals who treat and help prevent occupational illnesses and injuries on the farm. ***Agricultural Medicine: Occupational and Environmental Health for Rural Health Professionals*** will be offered June 10-14, 2013 in Iowa City, Iowa.

Topics include:

- Agricultural Respiratory Hazards
- Acute Agricultural Injuries
- Skin Diseases
- Physical Factors Affecting Health in Agriculture
- Behavioral Health Issues
- Musculoskeletal Diseases and Ergonomics
- Health Effects of Pesticides
- Zoonotic Diseases
- Cancer in Agricultural Populations
- Agricultural Health Care Delivery

Training sessions will be led by recognized experts in the various topic areas.

Physicians, nurses, nurse practitioners, physician assistants, veterinarians, health educators, and others with interest in rural and agricultural health care are invited to participate. The training program may be taken for three graduate credit hours from the University of Iowa, College of Public Health, and application will be made for continuing education credits.

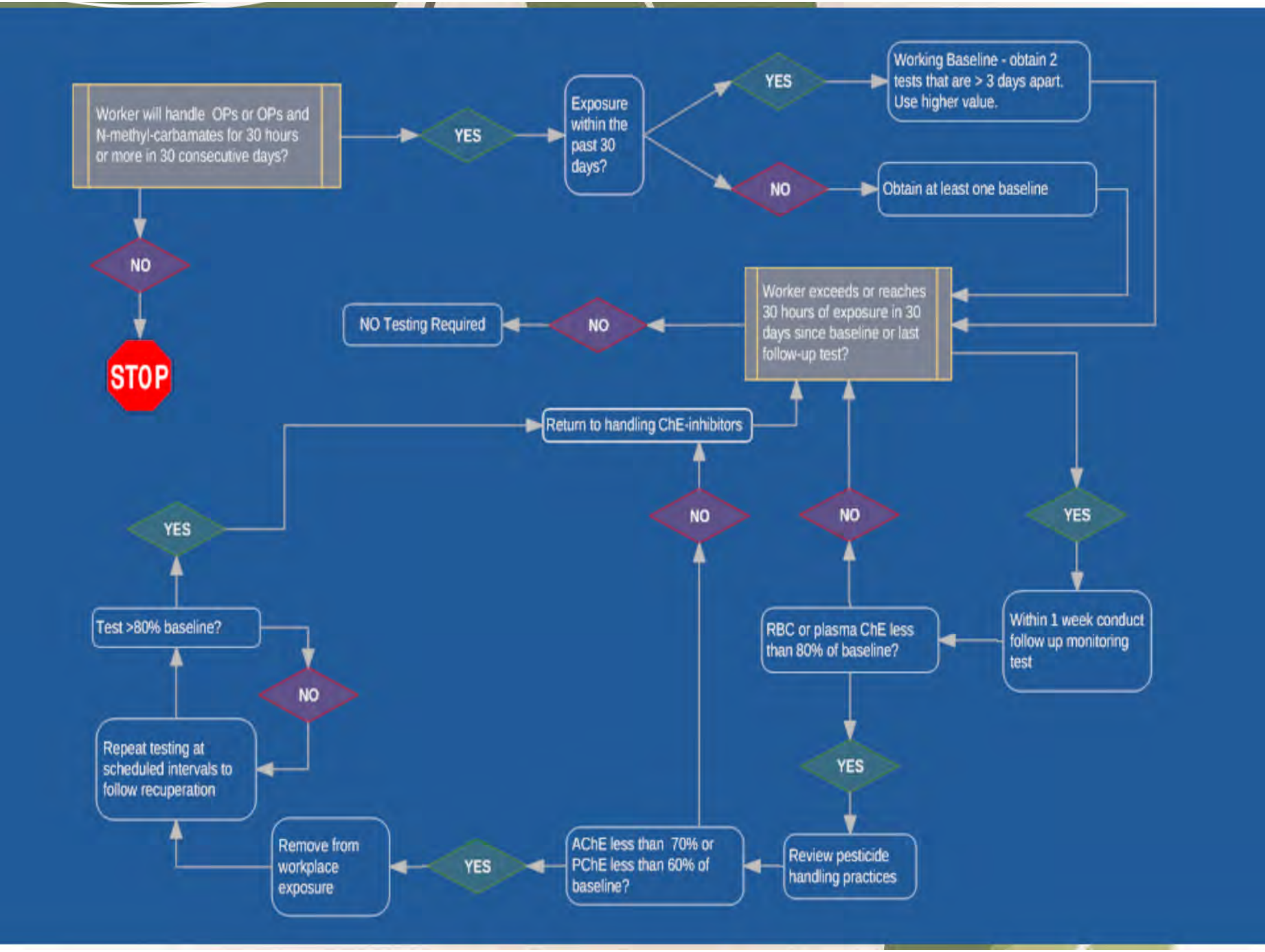
GREAT PLAINS
Center for Agricultural Health

I-CASH | Iowa's Center for
Agricultural Safety and Health

www.public-health.uiowa.edu/gpcah

www.public-health.uiowa.edu/icash

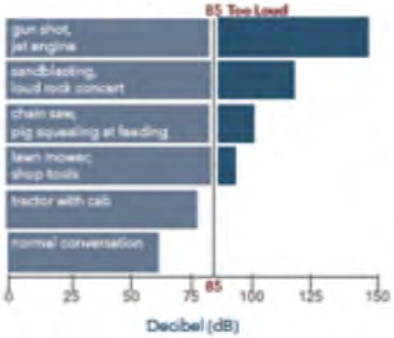
For additional information contact Kay Mohling at 319/335-4219 or kay-mohling@uiowa.edu


Worker will handle OPs or OPs and N-methyl-carbamates for 30 hours or more in 30 consecutive days?
YES
Exposure within the past 30 days?
YES
Working Baseline - obtain 2 tests that are > 3 days apart. Use higher value.
NO
Obtain at least one baseline
NO
STOP
Worker exceeds or reaches 30 hours of exposure in 30 days since baseline or last follow-up test?
NO
NO Testing Required
Return to handling ChE-inhibitors
YES
Within 1 week conduct follow up monitoring test
RBC or plasma ChE less than 80% of baseline?
NO
NO
YES
Review pesticide handling practices
AChE less than 70% or PChE less than 60% of baseline?
YES
Remove from workplace exposure
Repeat testing at scheduled intervals to follow recuperation
NO
Test >80% baseline?
YES

Hearing Loss Prevention

Adapting the Hearing Conservation Program for Agriculture

Decibel Levels of Everyday Sounds



Noise exposure in agriculture impacts all age groups from youth to older adults – not just the typical workforce age population. The agricultural worksite may also be a home, exposing non-working family members to noise that is loud enough to cause hearing loss.

Noise Induced Hearing Loss (NIHL): permanent impairment resulting from exposure to high levels of noise. NIHL can result from either a one-time exposure to noise (burst) or from repeated exposure to loud noises over time.

According to the American Hearing Resource Foundation, one in ten Americans has hearing loss that affects his/her ability to understand normal speech. Hearing loss can be caused by illness or biological issues, but can also result from exposure to noise that is too loud.

Terms to Know:

→ A **decibel** is the measurement used to describe the loudness of a sound.

→ Sounds above the 85 decibel mark, or **permissible exposure limit**, will cause hearing loss over time. The **OSHA Action Level** is 85 decibels – the level that requires initiation of a Hearing Conservation Program.

→ A **hertz** is the frequency or number of sound vibrations per second.

→ **NRR or Noise Reduction Rating** is a measurement of how effective hearing protection devices (like ear plugs or muffs) are at reducing noise exposure.

→ **TWA or Time Weighted Average** is the decibel or sound level over a given period of time, usually 8 hours.

→ **A Hearing Conservation Program (HCP)** is a designed intervention program to prevent hearing loss. An HCP is required when noise levels measure at 85 dB or higher (OSHA's Action Level).

OSHA's Permissible Noise Exposure Table

OSHA standards for permissible exposure (29 CFR 1910.95)

Sound Level dBA Slow Response	Permissible Exposure Time
90 dB	8 hours
95 dB	4 hours
100 dB	2 hours
105 dB	1 hours
110 dB	30 min.
115 dB	15 min. or less

(from standard sound level meter)

OSHA Hearing Conservation Program

OSHA Hearing Conservation Program requirements do not apply to all of the agricultural workforce, but can be used to guide best management. If you work in the agricultural industry and have 11 or more employees, you could be cited under the General Duty Clause, with the General Industry standard, 29 CFR 1910.95 used as a reference. The rule states an employer must administer a continuing and effective hearing conservation program and make hearing protection available whenever employee noise exposures are at or above **the action level**. Reference: 29 CFR1910.95(c)(2)

AgriSafe Webinar Series

Free monthly webinars

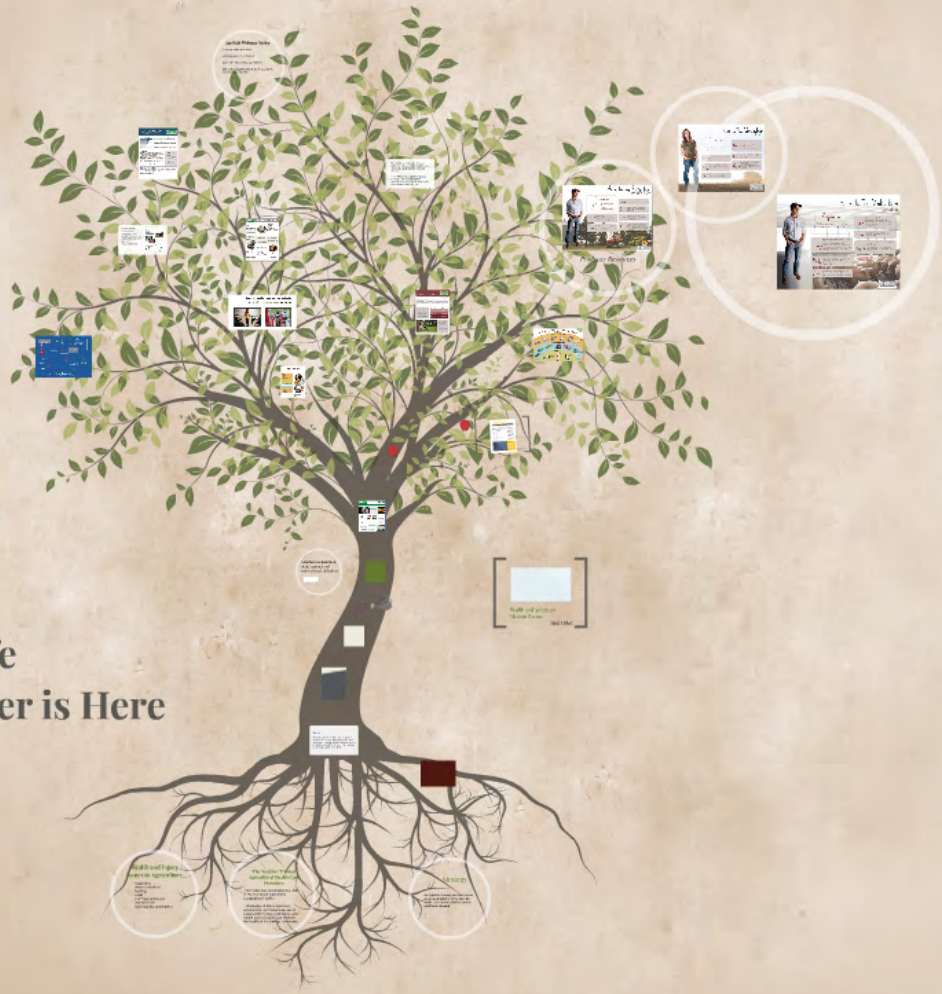
All sessions are archived

Consider becoming a presenter

Consider adapting webinars in academic course requirements

We envision a day when farmers and ranchers across the nation have access to highly trained AgriSafe clinicians.

They will provide superior disease management and prevention services to match specific exposures of the farmer and rancher.



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