

Can You Hear Me Now?

Understanding Hearing Loss and Prevention Strategies for Farmers and Ranchers

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ABSTRACT

Farmers, ranchers and others in agriculture work daily in noisy environments. From the engine of a tractor to squealing hogs in a swine barn, sound levels on the farm present a serious danger to one's hearing. A U.S. study by the National Safety Council revealed that 92% of the farmers who participated were exposed to extreme noise levels while carrying out daily tasks. Of those participants, 78% reported suffering from hearing loss. Prevention of hearing loss has emerged as a key issue in avoiding the risks to health and safety that exist due to hearing concerns. Staff in NDSU Extension and the NDSU School of Nursing partnered to develop educational resources and outreach approaches to address the issue of hearing loss in agricultural populations.

BACKGROUND

Due to hearing loss, those in farming can become more susceptible to other hazards on the farm that can impact personal safety, including:

- **Hearing warning signals** – Hearing loss may prevent hearing the warning signal that a machine is operating in reverse;
- **Reduced concentration** – Excessive noise may adversely affect farm workers' concentration, putting them at risk for injuries from machinery;
- **Physical exhaustion** – Individuals often have to exert more energy to do tasks in a noisy environment, leading to fatigue and increased risk of injuries on the farm or ranch;
- **Decreased morale and mental health** – Loss of hearing can contribute to feelings of isolation or depression, and negatively affect overall mental health.

PROGRAM RESPONSE & RESOURCES

- **Topic:** Hearing loss and prevention strategies for agricultural populations
- **Target Audience:** Farmers, ranchers, farm workers, farm family members
- **Response:** NDSU Extension – Farm & Ranch Safety Program
- **Program Response:** Development of educational resources and outreach efforts to build understanding and prevent hearing loss
- **Resources Developed:**
 - FS-2067 – Extension publication on hearing loss
 - Social media posts
 - Materials for display booth, in-person education
- **Partners:** NDSU Extension, NDSU School of Nursing



Degree of Hearing Loss	Impact
Slight 25-40 dB	Difficulty hearing soft or distant speech in church or theater
Mild 40-55 dB	Difficulty understanding conversational speech in restaurant or group setting
Moderate 55-75 dB	Difficulty hearing normal levels of speech (at 65 dB)
Severe 70-90 dB	Cannot hear loud speech or understand speech on the telephone but can hear shouted speech
Profound >90 dB	Difficulty hearing even shouted speech

Farm Equipment	Noise Level (dB)	Max Safe Time*
*Maximum time without wearing hearing protection		
ATV, push mower	90dB	2.5 hours
Tractor/combine (with cab), grain auger	92 dB	1.5 hours
Riding mower, pressure washer	102 dB	9 minutes
Tractor (no cab), grain dryer	105 dB	4 minutes
Chain saw	115 dB	< 1 minute

PREVENTION STRATEGIES

- Identify how loud your worksite is to determine risk of hearing loss.
- Select and wear appropriate hearing protection (earplugs or earmuffs).
- Perform routine maintenance on machinery to reduce noise levels.
- Inquire about sound reducing options when purchasing equipment.
- Consult your healthcare provider or audiologist if you are concerned about your hearing.
- Educate neighbors, friends, family, and farmers and ranchers about the dangers of hearing loss and prevention strategies available to protect your hearing.



OUTREACH

Using social media and in-person interaction during the Big Iron Farm show, we reached producers and their families, to bring awareness to hearing loss on farms and ranches and how to prevent hearing loss by showcasing tools and strategies on how to select hearing protection and when to use hearing protection.



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