

Episode Title: When is Noise Too Loud?

Summary: Make some *noise* for Dr. Tom Peters! You guessed it -- today's episode is on hearing protection. We also speak with Marsha Cheyney and as well who works for the Great Plains Center.

Expert: Dr. Tom Peters

Episode Quote:

*"You know, we live in a world where you can treat or cure most conditions, and I think that people really expect that hearing loss can be fixed too. With our current medical technology, it's still **permanent** and **irreversible**."*

– Marsha Cheyney, Great Plains Center for Agricultural Health

Transcript

00:10 A Proctor

Welcome to the FarmSafe Podcast brought to you by the Great Plains Center for Agricultural Health. In the blink of an eye, an injury can change your life and your farm forever. During each episode, we share first-hand stories and real-life tips for making safer and healthier decisions while on the farm.

A Proctor

Welcome to today's episode of the FarmSafe podcast on hearing loss prevention and sound level monitoring. Today, we get to speak with two guests affiliated with the Great Plains Center. First is Dr. Tom Peters who is the Department Chair of Occupational and Environmental Health and in the college of Public Health at the University of Iowa and has also recently named Fellow of the American Industrial Hygiene Association.

But first, let's hear some farmer's stories.

Farmer 1 Voice

Back in the summer, I worked at a shooting range, or a skeet shoot, and I forgot to bring ear plugs, and needless to say I could not hear the next few hours after that day. Thank you.

Farmer 2 Voice

So, one of the noisy jobs that we do around the farm is splitting wood and sometimes we run two wood splitters. And we have a bunch of family members, so we make sure that all of our family members and the kids and everybody's got hearing protection because it gets really loud and can be really dangerous.

A Proctor

Now, Tom, how common is loud noise in agriculture?

T Peters

So, loud noise is very common in agriculture. There's all kinds of sources. Some people are attuned to it. Some people are not.

A Proctor

How can farm workers protect their hearing from loud noises?

T Peters

I recommend having a set of earmuffs that you keep in a convenient place. If they're not in that convenient place where the noises are loud, you're not going to use them. Other options are foam plugs, and they do they do a good job as well. I don't know, I like them muffs.

A Proctor

How important is it for farm workers to use hearing protection and what are consequences of not using hearing protection?

T Peters

From surveys we've found that there's about maybe 20 or less percent of people actually use hearing protection devices. If you don't use hearing protection devices, it winds up being that there's quite a few different kinds of issues that can result. Obviously, the first one is noise induced hearing loss. The second would be even tinnitus-- is a ringing in the ears, and then there's also even cardiovascular issues can result, and sleep patterns can be disrupted and so there are quite a few long-term, adverse health effects that can result.

A Proctor

Can you describe HEARSAFE?

T Peters

Sure. We came up with a system where the main idea is to have agricultural workers be trained to better recognize those sounds that are high levels in their environment. And also, to help show people where they occur and where hearing protection devices should be stored so that if you do encounter those sound high levels again, you've got some protection there handy, you can put on immediately. The system has a smartphone and then there's a microphone that we are able to measure decibels of noise from, and we've built that. It's a \$25 system. And then that connects to the smartphone. We have the GPS in the smartphone, is also measuring your location where you are, and then we have we capture snippets of noise, not the decibels, but the actual audio when noise is high. So, there's then a website after you wear this around for a little while where the website interprets the information from the phone and you can see where you have high exposures and then you can click on the high exposure and you can hear what was going on at the time, and you can be reminded of what it was you were doing. And so that act of doing that is a behavioral act in order to try and train people to better understand noises in their environment.

A Proctor

That's perfect. Wonderful. Thank you.

A Proctor

We have linked the HEARSAFE website in the resources below. Thanks, Tom! Now, let's turn it over to another guest.

A Proctor

Today we are speaking with our very own Marsha Cheyney at the Great Plains Center for Agricultural Health. Marsha, welcome, and thank you for speaking with us today.

M Cheyney

Thanks for having me.

A Proctor

How can a farm worker know if they're being exposed to a noise that is too loud.

M Cheyney

That's a really good question. The rule of thumb that we use is if you can't talk to someone who's about 3 feet away from you without raising your voice, then it's probably too loud and you need to wear some kind of hearing protection.

A Proctor

What would you say to a farmer that can't avoid working around high noise levels on the job.

M Cheyney

Well, I guess the first thing I would say is be aware that noise exposure is cumulative throughout the day. It really depends how loud it is, how long it's going to take you to do a task and what other noises you've been around or will be around that day, whether you need hearing protection or not. If you're going to be spending a significant amount of time in a high noise environment, it's good to protect your ears with earmuffs or ear plugs. And there are so many varieties of these available today. It's really worth the time to find one that's comfortable for you, that's convenient to use when you need it, to preserve your quality of life.

A Proctor

OK, great. What are the most common loud noises in agriculture that farmers need to account for?

And what are their associated decibel levels?

M Cheyney

So smaller equipment like ATV's, push mowers and even larger implements like tractors or combines when they have a cab run around 90 to 92 decibels. And I hear a lot that the newer implements are much quieter. But if you're using older equipment, this holds true. And for that type of environment you can be, you know, for an hour and a half to up to 2 1/2 hours without hearing protection and still be safe. And then some of the items we use in the machine shop like air compressors, shop VAC type things run around 95 decibels. And you can be around that level of noise for 47 minutes without danger of hearing loss. Squealing pigs are surprisingly loud, about 100 decibels – they really are. So, if you need to be in the building with the pigs when they're being loud, 15 minutes is all you've got before hearing loss can start to occur. Riding mowers and tractors without a cab are around 105 decibels, and chainsaws are 115 decibels. So, the tractor without a cab. 4 minutes, I mean, every time you get on a tractor without a cab or a riding lawnmower, you're just going to have to wear some sort of hearing protection because those tasks always take longer than the minimum amount. And chainsaws, you know, they say less than a minute before hearing damage can occur. Nobody uses a chainsaw for less than a minute, I would guess.

A Proctor

Nuh-uh. It sounds like it varies.

M Cheyney

Yeah, it really does vary, and again, it's cumulative. Say you're on the ATV for an hour or two in the morning, you really don't need hearing protection. But, if that same day, you're gonna also be pressure washing, (Anna- mhm) which is around 102 decibels, then you're going to have to wear hearing protection the whole time.

A Proctor

OK. That makes sense. Thank you for explaining that. As well as keeping hearing protection in a place that is near the noise hazard where a farmer can easily use it, do you have any other tips for preventing hearing loss?

M Cheyney

The easiest one is when you need to buy new equipment. Pay attention to the noise levels associated with it and by the quietest one. Also be aware of the areas and equipment on your farm that have high noise levels and if you have kids or employees, maybe consider putting up a sign to remind them to protect their hearing too. And then, as much as possible, and I know it's not always possible, limit the amount of time you're in those high noise areas.

A Proctor

OK, those sound like good and simple advisement to follow. Are there any misconceptions or myths about hearing loss prevention on a farm?

M Cheyney

You know, we live in a world where you can treat or cure most conditions, and I think that people really expect that hearing loss can be fixed too. With our current medical technology, it's still permanent and irreversible. And that's the biggest one that I encounter. The only real treatment we have for hearing loss is hearing AIDS, which are, or can be quite expensive, and a lot of people are really unwilling to use them.

A Proctor

It sounds like when you have long term hearing damage, there isn't really a whole lot that can be done.

M Cheyney

No, there really isn't. I know that they're working on it, I know there's lots of research, but we're not there yet.

A Proctor

No, absolutely. Are there any resources for farmers that you would like to point out or mention or reference?

M Cheyney

You know the Great Plains Center website has a lot of information about the like the different decibel levels and how long it's safe to be in there like I was talking about earlier, but also about how noise induced hearing loss affects your life. And if you're really interested, on our hearing loss prevention web page there's a link to a simulator. And there's a lot of other simulators on like, you can just search hearing Loss Simulator on YouTube and get a lot of different videos. Sometimes it's helpful to listen to that and hear what it's like to have that kind of hearing loss as something that will help you to consider for your future. If you have an older family member or a friend that's important to you and they do have that kind of hearing loss, it helps to know what they're experiencing and maybe be a little more aware of how you can communicate with them better.

A Proctor

Oh, that's a really great resource.

M Cheyney

Yeah, I find that when I work with younger farmers, they are just amazed because I think everybody thinks that it just means that everything gets quieter, but that's really not the case. The noise induced hearing loss kind of muffles things, and you lose certain sounds before others and so it makes it hard to understand even what you can hear.

A Proctor

Sounds like that could be a really good eye opener and help people become more empathetic or at least have better understanding on what some of the long-term damages firsthand could look like.

M Cheyney

Yeah. It was certainly eye opening for me.

A Proctor

All right, great. Marsha, thank you so much again for meeting with us and talking a bit more about hearing loss and how to better preserve hearing on a farm.

M Cheyney

No problem. Thanks again for having me.

A Proctor

We linked to the Great Plains hearing loss prevention resource page and encourage our listeners to download the NIOSH Sound Level Meter app by searching "NIOSH Sound Level Meter" in your phone's app store. It is a free app that measures decibel levels in your

environment, so you don't have to guess when it comes to protecting your ears. If you have an Apple Watch Series 4 or later updated with watchOS 6, the health app also monitors your hearing over time which is easy to use while out on your farm. Like Marsha said, it is dependent on the level of sound plus the time spent within that sound. At over 85 decibels it is smart to start thinking about protecting your hearing. Check the resources below and we hope that you will consider protecting your hearing if you are not already. Thanks for listening to this episode, and tune in next time for another episode with Dr. Tom Peters! We'll take it back to pesticides and drones with another Technology on the Farm focused episode.

A Proctor

Listen in on the FarmSafe podcast to join in on the conversation about keeping safe on the farm.

We want to hear from you. Share your stories about health and safety issues on the farm, about injuries that made you change the way you work, or about the ways you keep yourself and others safe on your farm. Also let us know if there's questions you have or topics that you want to hear about on the air. You can visit our website, gpcah.org, or email us.

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Episode Resources

- [Design and Testing of a Personalized Noise Monitoring System](#), Dr. Thomas Peters
- [Hearing Protection Resources](#), GPCAH
- [Information on the Sound Level Meter App](#), NIOSH
- [Hearing Loss Simulator](#), NIOSH

Photo

