



# MASTER GARDENER PROGRAM THINKING SAFE AND GREEN



**AGRICULTURE AND NATURAL RESOURCES  
ENVIRONMENTAL HEALTH AND SAFETY**

**#15**

## **HEARING PROTECTION**

*Information given here is intended for use by program representatives, master gardeners, and those they train.*



According to information from the National Institute for Occupational Safety and Health (NIOSH), 25% of employees age 55 or older have developed significant hearing impairments when exposed long term in the workplace to an average noise level of about 90 decibels (dBA).

**English and Spanish language safety videos on hearing protection are also available for loan from the ANR Environmental Health & Safety Library at <http://safety.ucanr.org>.**

### **Noise Hazards**

- Noise can damage hearing when it is continuously at about 90 dBA or greater.
- Noisy work areas can elevate anxiety, hypertension, and fatigue in employees.
- Noise-induced hearing loss is permanent and occurs progressively over time.
- The following table lists recommended exposure times without hearing protection for noise hazards and levels routinely encountered in agricultural settings:

<u>Noise Hazard</u>	<u>Level of Noise</u>	<u>Recommended Exposure Time</u>
Dynamite blast, gunshot	140 dBA	None
Chainsaw	115 dBA	15 minutes or less
Barn fan, combine	110 dBA	30 minutes
Table saw, grinder, tractor	100 dBA	2 hours
Shop vacuum	98 dBA	3 hours
Lawn mower	90 dBA	8 hours
Idling tractor	85 dBA	Damage can occur if exposure >8 hours

### **Preventing Hearing Damage**

- Always use hearing protection (i.e., acoustic ear muffs or ear plugs) when working in an environment where noise levels are continuously at about 90 dBA or higher.
- Warning signs for overexposure to noise include ringing in the ears (called tinnitus) and temporary loss of hearing sensitivity (called temporary threshold shift).
- Select and use hearing protection with an appropriate noise reduction rating (NRR) to reduce ambient noise to below 90 dBA.
- Be aware that the manufacturer's NRR was derived under ideal conditions and therefore, a more realistic rating for use in the field is about one-half the manufacturer's NRR.
- Hearing protection worn incorrectly may not adequately reduce noise exposure.
- Cotton balls do not effectively provide hearing protection.
- Noise levels follow the inverse square law and can be reduced by 25% if you double your distance from the noise source (i.e., moving from 5 to 10 feet from a 100 dBA source will reduce the noise level to 75 dBA).



**Protect Your Ears**