BMP Ag Compliance Updates- Noise Control

# I Noise Control

## Farm Equipment

As much as practical, operate farm machinery when it will least likely result in noise levels that may be offensive to neighbors. Use appropriate mufflers and other noise-reducing features when operating equipment within hearing distance from neighbors. The sound generated by stationary farm equipment reduces by the square of the distance from the equipment.
Good planning before installing stationary farm equipment is the best way to avoid possible future noise nuisance complaints. Where appropriate:

- Discuss with neighbors why you must install noisy equipment;
- Locate equipment as far as possible from neighbors;
- Consider the effects of topography, the predominant wind direction and whether neighbors will be able to see the equipment;
- Use a decibel meter to determine sound levels at critical locations; and
- If necessary, contact a professional engineer with expertise in noise abatement from farm equipment.

Resources:
1. **Keeping Noise Down on the Farm**
**https://www.noisyplanet.nidcd.nih.gov/parents/keeping-noise-down-on-the-farm.**
**2. How Do I Know If Farm Noise Is Too Loud?**
**http://senecacountycce.org/resources/how-do-i-k-now-if-farm-noise-is-too-loud.**
**3. Noise prevention**
**https://farmerhealth.org.au/2014/03/21/noise-prevention.**
**4. How Can Farmers Protect Themselves From Dangerous Noise On Farms?**
**http://www.battlefordshearing.com/blog-view/how-can-farmers-protect-themselves-from-dangerous-noise-on-farms.**
**5. Safe Clothing - Noise and Hearing**
**https://nasdonline.org/7026/v001559/safe-clothing-noise-and-hearing.html.**
**6. Hearing Loss Protection for Agricultural Workers**
**http://agrilife.org/agsafety/files/2011/06/HEARING-LOSS-PROTECTION3.pdf.**

## 1.Irrigation Pumps

- Minimize night-time operation, if possible.
- Locate pumps away from noise-sensitive areas.
- Install noise buffers where and when necessary.
- Place the pump in a steel enclosure lined with sound-absorbent material, if possible.
- Provide regular pump inspections and maintenance to preclude excessive noise from worn or improperly functioning pump parts.

- Use engine vibration isolators and a priming exhaust muffler if applicable.
- Determine that water flow speed settings are appropriate to the crop need.

Resources:
**1. How to Soundproof A Noisy Water Pump In A Few Simple Steps**
**https://soundproofcentral.com/soundproof-water-pump/.**
**2. Noise in Pumps and Systems**
**https://www.ksb.com/centrifugal-pump-lexicon/noise-in-pumps-and-systems/191140/.**
**3. Selecting an irrigation pump**
**https://www.dpi.nsw.gov.au/agriculture/water/irrigation/systems/selecting.**

**2.Grain Dryers**

- Place dryers in areas that use existing structures to shield or mask the sound.
- Orient in-bin dryer fans or overhead batch bin dryer fans away from neighbors.
- Use centrifugal fans instead of axial flow fans, and use fans with the lowest possible sound levels.
- Install silencers where practical.
- Minimize chatter from grains moving in augers, pneumatic transfer pipes, drying and cooling aeration fans.
- Install sound absorbent and barrier materials and/or enclosures around the dryer, e.g., a heavy, flexible, weather and heat resistant sound blanket panel.
    - Absorbent materials include mineral and glass wools, felts, and foams, as fibrous materials absorb more sound than dense materials.
    - Barrier materials should be placed as close as possible to the noise source, and include dense materials, e.g., wood, metal, concrete, thick plastic, or any dense material – the denser, the better.

Resources:
1.**Understanding and Reducing Noise Nuisance from Stationary Farm Equipment**
**http://www.omafra.gov.on.ca/english/engineer/facts/12-029.htm.**
**2.What's Wrong with My Pump: Six Common Pump Problems That Cause Noise and What to Do About Them**
**https://www.vertisys.net/circulating-pump-noise-and-how-to-fix/.**
**3.Quiet, Please! Challenges and Solutions for Working in Areas Where You Need to Keep Noise at a Minimum**
**https://mwipumps.com/2016/05/31/quiet-please-challenges-solutions-working-areas-need-keep-noise-minimum/.**

**3. Noise Cannons**

- Use only during daylight hours
- Operate only when birds are present
- Follow recommended setbacks

- Operate only when the crop is economically impacted by birds
- Use in conjunction with other scare tactics
- Use at the lowest effective decibel setting
- Communicate with neighbors the hours of operation, reasons for their use and respond to any questions that might come up

Resources:

**1.Cannons and Other Bird Scare Auditory Devices**.
http://whatcom.wsu.edu/ipm/manual/blue/docs/BirdScare.pdf

**2.Using Propane Fired Cannons to Keep Birds Away in Vineyards**
https://www.ontario.ca/page/using-propane-fired-cannons-keep-birds-away-vineyards