

Frank's Note

For swine caregivers, the daily priority is to be aware of the animals' needs and provide food, water and a proper environment. While there is some variation in management, depending on the animals' age, facility design and equipment, the key is to check the barns, the animals and their surroundings twice a day.

By training personnel to better know your hogs, it becomes easier to identify what isn't right, what actions are needed and which ones will work out best.

We embrace a similar approach at *Farmweld* as well. We take great pride in training our employees to ensure that our culture and values of producing high-quality products ring true. Our daily priority is to meet the needs of customers all the way from the gestation barn to the finisher.

Just as you walk the barns to train your eyes, ears and nose to better know what's going on with your hogs, we quality-check our products through every step of design and manufacturing to ensure that only the highest quality products go out the door.

While manufacturing is a more static, repeatable process, managing pigs requires more fluid reactions. There rarely is one right answer when it comes to designing facilities, selecting equipment or managing your pigs. Rather, there are guidelines and it's up to you to determine what works, for your animals and with your management style.

Farmweld is ready and available to be your partner – to work through those decisions, and recommend the right equipment in the right layout. Just call us at 1-800-EAT-PORK (328-7675) or visit farmweld.com.



Frank Brummer
President
Farmweld, Inc.

Learn the Sights, Sounds, Smells of a Normal Wean-to-finish Barn

Key in on these three senses during your daily walk-throughs to ensure the pigs' needs are being met.



Standard operating procedures may differ between production sites, but within those details are universal elements required to meet the pigs' needs to keep them healthy and growing. Certainly, feed, water and air top the list. Monitoring pig health and providing timely treatment and care are other daily priorities.

That's why it's important to train your eyes, ears and nose to key in on deviations from the norm. But what is normal? Simply put, it's the baseline of what is typical or expected for your pigs and facilities, according to Dale Ricker, Ohio State University swine program specialist.

Having conducted numerous production-site assessments, Ricker suggests using these senses to monitor animal and barn conditions:

- **Sight** — Look at the pigs' activity level, mobility, alertness, eyes, comfort, gut fill, hair coat, body injuries and feces. For equipment, check feeder adjustment, water flow

rate and water monitor, slat condition, ventilation, heaters and misters.

- **Sound** — What do the pigs sound like before and after you enter the barn? Also, pay attention to the sounds of equipment such as motors and fans.
- **Smell** — How does the room's environment feel and smell to you? This primarily targets gas levels such as ammonia and hydrogen sulfide.

"Through daily observations and keeping a record, anyone walking through the barns should be able to understand what these three senses can tell you and what needs to be addressed further," Ricker says.



Dale Ricker, *Ohio State University*
swine program specialist

Break It Down Further

Twice-a-day walk-throughs are your most valuable tools and should focus on the pigs, equipment and environment. The morning needs to be thorough and make the pigs a priority.

Ricker's rule of thumb is to spend 2 seconds per pig and view each one from head to toe and snout to tail. For a 2,400-head wean-to-finish barn, that's 1 hour and 20 minutes. "Two seconds doesn't seem like enough time, but once your eyes are trained, that seems adequate," he says.

Unless there are health issues, the evening walk-through can be quicker and conducted from outside the pen. Focus on water, feed, ventilation and a general check of the pigs. "Look for obvious things that can't wait until morning," says Jeff Feder, DVM, Swine Vet Center, St. Peter, Minnesota.

The key in both instances is to clear your head and really observe the surroundings. "It's easy to daydream and fail to make the right conclusions," Ricker notes.

His advice is to develop a systematic approach to the observations. Start by viewing pigs from the outside through a window or curtain, if possible, before you enter the building. This will tell you a lot about their comfort level, because once you enter the room the scene changes dramatically.

Focus on the Pigs

Enter the barn slowly and quietly, so as not to excite the pigs because this is a good time to note the air quality, odors and humidity. Observe how the pigs are lying. If they're next to each other but not crowded, they're comfortable. If they're on their bellies or bunched up, it suggests they are chilled. Check temperatures at various locations, especially at pig level. Humidity readings can signal why they're not comfortable.



**Jeff Feder, DVM, Swine Vet Center,
St. Peter, Minnesota**

Enter the pens, get each pig up and watch it walk. Now is the time to treat pigs in need. "Be organized; have everything you need — the right needles, syringes, appropriate medications," Feder says. "Some people use a toolbelt or tote with these items." Carry a marking stick or spray to identify treated pigs. Use a different color each day to tell you when that pig was treated.

Active, alert, curious pigs are normal pigs, which is the goal. Pigs with obvious signs of problems such as coughing, loose stools or wet flanks, lameness or swollen joints, head tilt, paddling, skin lesions or biting of the tail, ears or flank all need to be addressed.

"It's the ones that fall in between, with more subtle signs of a poor-doing pig and listlessness that cause concern," Ricker says. "By the time we notice, it may have been off feed for 24 hours or more."

Look for a flat or gaunt belly, rough hair coat, pronounced hips or backbone, a hunched back or hanging head. If a pig is lying off by itself and not responding, you need to check it out. Of course, you need to look for and remove dead pigs as soon as possible, even if it interrupts your schedule.

"It's important to have a 'sort plan' in place and dedicated pens for pigs that need to be removed for health or welfare reasons," Feder says. It needs to be a warm, dry and draft-free space. He points out that some producers divide up pens to provide isolation areas. "Multiple small pens are better than one large sort pen so that pigs can be separated from other pigs if necessary."

Evaluate these pigs every day, and if any pig cannot walk to get feed or water or it is declining severely, timely euthanasia is the humane action to take. Pigs making progress can move from the sort/sick pen to the recovery pen to be held with a smaller group of similar pigs.

Monitor the Environment

When you enter a facility you can tell a lot about the environment, especially the temperature, humidity and odors. Inside the building, some of the equipment to monitor are the fans, stir fans, curtains, drippers/misters, heaters and controller settings, the pit level and ventilation. Some are more dependent on daily checks than others.

Pig size will dictate the room's temperature setting. For wean-to-finish facilities, give extra consideration to just-weaned pigs. "Generally, newly weaned pigs should be housed at temperatures of 80° F to 85° F," says Rayan Samuel, South Dakota State University Extension swine specialist. He notes that large rubber mats placed over slatted floors and radiant-heat brooders or heat mats offer supplemental heat during the 5- to 6-week nursery phase as needed. However, this will require a bit more management to ensure temperatures are on target. Other options for broader room coverage are zone heating and supplemental gas or electric heaters.

But remember, you need to determine what's happening at the pig level, which is about 1 foot up from the floor. Hang thermometers to record temperatures in the building center and at one-third intervals down the length of the barn. Avoid taking temperatures near inlets and direct heat sources.

A few tools can help you monitor environmental conditions. An infrared thermometer, about \$100, lets you take temperature readings from a variety of surfaces, such as the pig's skin, floor, heat mats, even fan belts/motors. "You

Thermal limits for swine

Production phase	Lower critical limit	Upper critical limit	Preferred range
Nursery, 30-75 lbs.	40° F	95° F	65°-80° F
Growing, 75-150 lbs.	25° F	95° F	60°-75° F
Finishing, 150 lbs.-market	5° F	95° F	50°-75° F

Source: PQA Manual, National Pork Board; table adapted from NRC.

may not need to carry it with you every day but have it handy,” Ricker advises.

Another option is an anemometer. For about \$150, it can measure air speed, room temperature and humidity. Note that in swine barns the ideal relative humidity is 40 percent to 60 percent.

Odors and gasses are tied together, with ammonia the most common challenge. Others to note are hydrogen sulfide, carbon dioxide, methane and carbon monoxide. Measuring gasses can be tricky, and Ricker uses a Sensidyne pump, which costs about \$450. The accompanying tubes can measure gas levels within a few minutes. Passive-diffusion tubes are another option but will take an hour or more to get a reading.

Ammonia levels need to be under 25 parts per million, and it’s best to measure at pig height and at various locations down the length of the barn. When observing the pigs, look for watery eyes and staining, and difficulty breathing.

Check the Ventilation

The building’s environment is influenced by ventilation, so some daily checks are needed. “Check the controller settings and make sure fans and air inlets are working every day,” Feder says.

If a fan isn’t working properly, it’s under-ventilating. If shutters are missing, it becomes an unintentional inlet and compromises uniform and consistent air flow. Worn fan belts can drop fan speed by as much as 20 percent. “That’s like shutting off a fan on a hot day,” Ricker points out. “Also check the pulley; if it’s around 7° F warmer than the room temperature, the belt is slipping.” An infrared thermometer is useful here as well.

Ensure that air inlets are unobstructed and working correctly for the current room temperature. The air-speed goal

is 800 to 1,000 feet per minute for proper air flow and mixing before it reaches the pig level. This is especially important during cold months.

For hot-weather months, Feder advises having a cooling system, with drippers or misters. “You want big droplets. You want to get the pig wet but not the feed, so the nozzle position and function are very important,” he notes. For naturally ventilated buildings, adding stir fans helps move air to cool pigs.

Check that manure-pit fans are working and there’s at least 1-foot clearance under the slats for air movement. For other manure systems, determine whether the pull-plug manure pit needs to be emptied. If there’s an under-floor manure scraper, ensure that it’s working.

Keep Feed, Water Flowing

Feeders and waterers are essential daily checks. While there are a variety of feeder sizes and designs, one thing is universal: to have an accessible supply of clean feed. Check the feed system and bulk bins to ensure the feed supply is flowing. At the feeder level,

Farmweld Shelf Feeder

OPTIMAL FEED ACCESS MINIMAL WASTE

Farmweld’s elevated feeding-shelf design allows feed to flow evenly to enhance feed consumption and reduce waste for pigs from 10 pounds to market weight. The feeder performs well with various types of rations and other irregular feed particles. The 36” height of the *Farmweld Shelf Feeder* allows for greater hopper capacity. The extra height also limits pigs from eating from the top and keeps them away from the drop tubes.



both Ricker and Feder cite Kansas State University's recommendation of 30 percent to 50 percent feed coverage in the feeder pan. "Check the feeders in every pen every day," Feder says. "Make sure there's no blockage, and adjust them to ensure good intake but prevent wasted feed."

Water is essential because pigs that don't drink, don't eat. Never assume that the water flow or pressure in one pen is the same throughout the room. Look at each waterer to make sure they're not plugged. Water pressure should be no more than 20 psi.

Water consumption is influenced by hot weather and temperatures, but general

rates are shown in the accompanying table.

Water requirements by phase

Production phase	Water requirement (gal/pig/day)	Flow rate (cups/min)
Nursery	0.7	1 to 2
Growing	2 to 3	2 to 4
Finishing	3 to 5	2 to 4

Source: PQA+ Manual, National Pork Board.

Although it's an inexpensive input, wasted water will cost you on the output side. Ricker offers an example: 90 drips of water per minute equals 7.6 gallons per day and 11 cents per day in added manure-disposal costs. If there's a medicator running, add another 10 cents per gallon.

Water meters are a helpful tool. Not only can they signal a leak but also flag health challenges before symptoms appear. The important thing is to read and record amounts daily, but also track intake over 24 hours. "Water consumption should increase steadily every day as pigs grow, barring extreme temperature fluctuations," Feder says. "A dip, or even a flatline, is pretty predictive that a health challenge is coming."

In the end, it boils down to learning the sights, sounds and smells of your wean-to-finish barns and providing pigs with the basics of feed, water and a dry, comfortable place to sleep. **F**



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