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Progressive Pork

Winter/Spring 2022

Frank's Note

As we move into a new year, it presents a natural opportunity to take stock of where we've been and where we're headed. It's a time to re-evaluate our business and personal goals. Needless to say, the last year-plus has been unprecedented and challenging.

Sudden high feed costs pressured your bottom line. Supply chain issues created unanticipated challenges and reached into all corners of our lives. This was especially evident for folks in the process of any type of construction project but also for manufacturers, parts and service providers, and equipment using computer chips. It definitely has opened our eyes to interdependencies and the vast reach of computers and electronics within pork production enterprises.

Additionally, the supply and demand equation has reinforced that the general public likes their protein – including pork. The strong hog prices that materialized in 2021 were a welcome relief from the uncertainty seen in 2020.

While there is never a dull moment on hog farms, the winter months offer an opportunity for reflection, review and redirection, if needed. Walk around and really check out your feeders, gating, waterers and other equipment in hog barns. Take some extra time to review your production records. Are any changes needed to advance efficiencies? Is it time to replace worn out equipment for productivity's and safety's sake?

All in all, we are fortunate to have so many opportunities and to be a part of an industry that produces safe, healthy, nutritious pork to feed Americans and people across the world.

In the months ahead, remember that *Farmweld* is here to offer guidance and recommend the right equipment for the right layout. Just give us a call at 1-800-EAT-PORK (328-7675) or visit farmweld.com.

Frank Brummer
President
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Wet/Dry Feeders Offer Grow-Finish Production Gains

A South Dakota State University trial reveals growth and feed efficiencies, with some carcass impact

The most basic elements to keep grow-finish pigs productive and healthy are feed and water. Providing enough feeder space and waterers to meet the pigs' needs as well as ensuring the quality and palatability of both nutrients are critical factors.

Whether the unit features wet/dry feeders or conventional dry feeders, checking to keep them functioning properly and presenting clean, fresh feed and water is a management requirement within every hog unit every day.

Feeder selection depends a bit on your management preferences, and feeders fall within two main types:

1) Conventional dry feeders, which provide only feed with separate water access.
2) Wet/dry feeders that deliver feed and water within the same unit.

With wet/dry shelf feeders, the feed drops onto a shelf below the feed hopper with nipple waterers in the feed-pan area providing the water. The pig can determine whether to eat dry feed from the shelf or knock it into the pan to mix with water.

"Regardless of feeder type, it's important to manage and adjust feeder-pan coverage to provide adequate access to feed and to prevent feed waste," says Ryan Samuel, assistant professor and swine specialist at South Dakota State University (SDSU) Extension. For both feeders, he recommends applying Kansas State University's guidance of about 50 percent pan coverage.

A Comparative Trial

In a recent trial conducted at SDSU's wean-to-finish facility, Samuel and his team looked at conventional dry feeders and wet/dry feeders for grow-finish pigs. For the trial, two rooms of 20 pens each were fitted with stainless-steel, wet/dry feeders in half of each room, and dry feeders were

installed in the other half. The feeder designs were equivalent at 60 inches wide and 40 inches tall with divided feed pans. All of the wet/dry feeders were adjusted to the same shelf position. All pens had two cup waterers.

Nearly 500 pigs of the same genetics stocked the pens, with up to 15 pigs each, providing approximately 9 square feet of floor space per pig. Samuel acknowledges that's a bit more space than typically found in commercial settings but that the results and trends they saw were consistent with previous studies. Also, the trial was conducted from winter through Memorial Day, so hot weather was not an influencing factor.

Pigs entered the wean-to-finish barn at 21 days of age and averaged 12 pounds. For the first 6 weeks after weaning, the water nipples in the wet/dry feeders remained off so all pigs consumed dry feed and accessed water through the cup waterers. This step was to ensure that the feed remained fresh during the transitional nursery phase.

"We didn't want young pigs to lie in the feeder or play with the waterer, flood the feed and waste it," Samuel adds. It's also expensive feed that you don't want to get wet and spoil.

For this nursery period, feeder type did not affect the pigs' growth performance, he notes. Pigs gained an average of 0.8 pounds and consumed 1.2 pounds of feed per day.

researchers turned on the water nipples in the wet/dry feeders but kept the cup waterers open. In the field, the cups would likely be shut off, which "may produce additional growth performance gains," Samuel says.

For this grower phase, the pigs' starting weight averaged 80 pounds, and researchers weighed them and measured feed disappearance every 3 weeks.

A Snapshot of Real World Water Use

Feed tends to get all the attention, but water is equally critical because water intake influences feed intake. Of course, many factors influence water intake, such as animal health, stress, diet composition, temperatures, water quality, accessibility and flow rates. Some of these are more easily controlled than others, namely access and flow.

To gain perspective of what's happening on hog farms, Katelyn Zeamer, a South Dakota State University (SDSU) swine nutrition graduate student, conducted a survey in 2019 of grow-finish barns across the state. The survey involved an on-site visit to collect water and feed samples, as well as a review of in-barn temperatures. A total of 23 barns were surveyed, with approximately 60 percent using a rural water source. The others accessed well water.

Most interesting was that water flow rates for nipple waterers varied greatly. Industry guidance cites water flow for pigs < 60 pounds should be 1 to 2 cups per minute and 2 to 4 cups per minute for pigs > 60 pounds. The SDSU survey showed a range of 3.3 cups per minute to 17.2 cups per minute, with an average of 6.2 cups. Notably, 68 percent of barns exceeded those levels, while just two had ≥ 50 percent of the pens that met flow rate recommendations.

That's a waste that will increase manure-management costs, and it underscores the importance of checking waterers daily. A more detailed water flow check, including water lines, should be conducted monthly or quarterly, at minimum.

Another rule that can get overlooked as productivity increases over time and more pigs stock a barn is the recommendation of one waterer for every 10 to 15 pigs. In the SDSU survey, the average pig-to-waterer ratio was 13:1, with one barn as low as 7.8:1 and one as high as 16.6:1. Limiting water access will limit growth performance. Fortunately, it can be easily rectified by adding more waterers.

The survey also analyzed water samples for pH, total dissolved solids, total hardness, calcium hardness, *Escherichia coli* coliforms and total coliforms. For the most part, there were no significant differences between rural- and well-water sources.

The take-home messages are that adjustments to the water flow rate in barns may improve pig performance or reduce water waste and the associated costs. Also, depending on your region, water quality issues can vary and are worth periodic checks.

The Findings

Pigs in the wet/dry-feeder pens were heavier on weigh days compared to pigs using the dry feeders. Based on average feed disappearance, pigs in the wet/dry-feeder pens consumed 0.3 pounds more feed per day. Their average daily gain averaged 0.09 pounds per day greater than pigs from the dry-feeder pens, with no difference in feed efficiency.

The pigs were marketed on a fixed date, not by weight, through a commercial packer. The hot-carcass weight for pigs on wet/dry feeders was 209 pounds versus 202 pounds for dry feeders. Backfat thickness was 0.74 inches versus 0.69 inches for the respective pigs. Percent lean tended to be lower — 55.6 percent for pigs that had wet/dry feeders versus 56.7 percent for those using dry feeders. However, the carcass loin depth was not different between the groups, Samuel says.

Whether those carcass differences are something to be concerned about depends on your packer's grading

Ryan Samuel, *assistant professor and swine specialist, South Dakota State University Extension*

system; if backfat is part of the equation then final payments or bonuses might be affected.

From a long-term perspective, it's worth thinking about the interrelationship of your genetics, nutrition and feeder type, Samuel says. "If you wanted to capture the potential gains of wet/dry feeders but not have the backfat impact, perhaps a slight change in diets could help with that."

Other Considerations

Among the recommendations that surfaced from the trial is to ensure the wet/dry feeders are adjusted so the feed drops onto the shelf properly and the pigs can access it. Also, for a period following weaning, it's wise to open up the feeder a bit more to increase the pigs' interest and access. "The shelf is a bit different for the pigs, so be mindful of feeder adjustments," he says.

Wet/dry feeders aren't any more finicky to manage than dry feeders; however, if the water nipples get blocked open or fail, water can flood the pan and waste feed. Or, if blockage limits water intake, performance will suffer. So, daily feed and water checks and a quick response are key.

For both types of feeders be sure to clean the corners and keep feed fresh and flowing.

SDSU researchers fed typical ground corn/soybean meal grow-finish diets and didn't have any flow or build-up issues. "There may be situations where a diet might not work as well with wet/dry feeders," Samuel says, "but that can be addressed."

The trial didn't look at water use, but overall, it's confirmed that wet/dry feeders use less water than with dry feeders. One caveat is the move from cup waterers to wet/dry feeders will have a more limited water savings than if transitioning from nipple waterers.

Depending on the barn, wet/dry feeders may require extra waterlines, which could increase the set-up costs. Other than that, it's important to ensure that the water pressure and flow are correct at every feeder throughout the barn.

Also consider the manure-management impact, because as wet/dry feeders reduce water usage, it can translate to reduced costs for manure slurry removal. That's especially beneficial if you contract out your manure hauling.

There are pros and cons to every feeder choice. Wet/dry feeders offer the potential to capture additional growth. "With feed, you always want to try to capture as much as possible," Samuel says, "regardless of feed costs."

The con side is that feed and water are tied together. "If you have a nipple or waterer issue, it may be more difficult to get in and fix it in a timely manner. Then you might lose some growth potential," he points out. "If feed and water are separate, and the waterer breaks, water will go into the pit but doesn't impact the feed."

In the end, differences in pig performance are important regardless of the equipment you are considering. Wet/dry feeders have been shown to promote feed intake and bodyweight gain in grow-finish pigs compared to dry feeders, but carcass lean can be reduced.

There is no one right answer; rather there are many considerations to think through when selecting and ultimately managing wean-to-finish feeders. F