

On-Farm Demonstrations Quench Thirst for Water Knowledge

By Geoff Geddes, for Swine Innovation Porc

Water is something that's easy to take for granted...unless you're the one footing the bill. As pork producers grapple with razor-thin margins, cutting costs is critical.

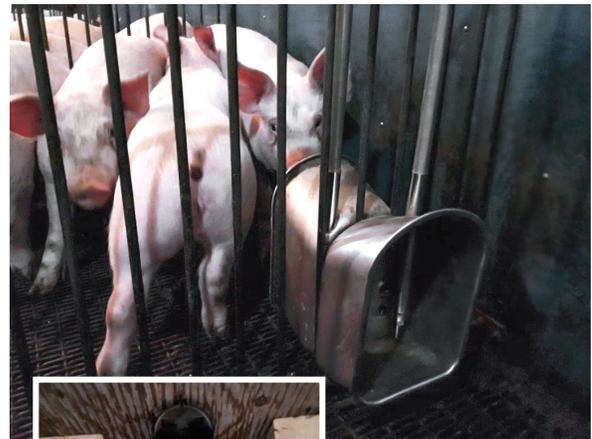
Reducing Water Consumption in Nursery Barns

With a name like that, the objective of the first on-farm demonstration is pretty clear. Based on research results, the project team went on farm to determine if replacing conventional nipple drinkers with water bowls could reduce water disappearance.

Focusing on eight batches of nursery pigs, they equipped eight pens with bowls and eight with nipple drinkers. Using a water meter, the project team tracked the animals over nine months and found that water bowls reduced water disappearance by 33% compared to conventional nipple drinkers. Perhaps most importantly, the move to water bowls had no negative effects on pig growth performance.

Reduced water wastage from the bowls led to a substantial reduction in manure production. Such changes must be well managed, of course, to avoid the production of more solid manure and complications in manure removal that could result.

Still, the results are significant, and the use of an on-farm assessment to gather data makes the findings instantly relevant in the real world. For the producer involved in the testing, the outcome



Water bowl and usage meter.

Source: CDPO

prompted the farm to continue using the water bowls after the project.

This demonstration and its implications are timely to say the least. From a cost standpoint, less water wasted means lower manure application costs at a time when every dollar saved is critical for producers.

Beyond cost savings, however, there is the big picture to consider. Agriculture today faces tremendous pressure to lessen its environmental footprint, and for good reason. By reducing water wastage, pork producers can also shrink the area needed to spread manure, thereby demonstrating the industry's commitment to sustainability.



The potential of these results is intriguing, and it all begins in the barn. Additional on-farm assessments are needed to test bowl performance over a longer period and during different seasons, and to allow for documentation of the results.

Effective Water Conservation

Just as there is more than one way to skin a cat (but we won't go there), there are other options worth exploring to reduce water wastage on farm. This on-farm demonstration looked specifically at finishing barns to see if a trough with side panels and an integrated nipple drinker would prove effective.

In a research setting, the trough option reduced wastage and offered impressive water savings of 60% over conventional nipple drinkers. Like the first demonstration, there was no adverse effect on pig performance. Given recent findings at 24 Canadian hog farms, it was found that two-thirds of nipple drinkers measured (in finishing barns) provided higher than recommended flow rates. The project team then put the trough set-up to the test on a commercial farm.

After 24 weeks, the trough with side panels and integrated nipple drinker had reduced water disappearance by 20%. Though the results are interesting from a scientific standpoint, the priorities for producers are grounded firmly in reality: What will it cost to install? How much money will it save? How long until I get my investment back?

With material and labour, the trough configuration can be up and running for approximately \$167 per pen. An average farm can expect to save \$28.05 in water use per pen and \$57 per pen in manure disposal costs. Though each farm is unique, the site

involved in the on-farm demonstration is looking at 2 - 3.5 years to recoup their investment.

As for drawbacks, the trough must be washed regularly and there is greater potential for water contamination.

In weighing the pros and cons, the producer in this study was attracted to the substantial water savings and drop in manure volume offered by the trough with side panel setup. He may also have been motivated by the consequences of not making the change. Though critical for pig growth, water is frequently overlooked in pig production, resulting in an average wastage of 25% from nipple drinkers and up to 40 – 60% on commercial farms in Canada.

These two on-farm demonstrations present viable options for saving water, cutting costs and aiding the environment. In doing so, they both revealed the importance of on-farm demonstrations in regard to testing new technology and hastening its adoption by industry.

Oh, and if you still think water is an overrated issue, imagine your life without it. ☹️

For more information...

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This work was part of national on-farm demonstration project that took place in 2016-2018 titled *From Innovation to Adoption: On-Farm Demonstration of Swine Research*.