



ALL-IN-ONE SWINE PRODUCTION SYSTEMS PRIMER

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ENVIRONMENT STRESS IMPACTS PIG PRODUCTIVITY

Chapter 1



The swine industry comes with its own unique set of needs.

To run at peak efficiency, barns have to be set up to constantly provide the animals with the optimum environmental conditions and feed scenarios. By keeping an eye on these factors, AP can develop systems to mitigate the stressors that can specifically impact production.



Environmental Stress Impacts Overall Pig Health

Pigs don't have a functional sweat gland to help them cool down, so extreme heat can have a significant impact on production. Heat stress negatively impacts daily weight gain, feed conversion efficiency, growth rates, milk production and fertility. A grower may not see any issues in the first few days after a heat stress event, yet the impact of heat stress can be significant.

There are three major ways that hogs will exhibit heat stress - panting, decreased feed intake and increased water consumption. Heat can also impact an animal's immune system, making them more susceptible to disease.

Cold temperatures create a different kind of stress for pigs. The cold temperature causes the animals to eat more to stay warm, but also reduces their feed efficiency, so they struggle to maintain production and body condition. This excessive eating and huddling are the primary signs of cold stress. The animals work hard to stay close together and stay warm negatively impacting their productivity.



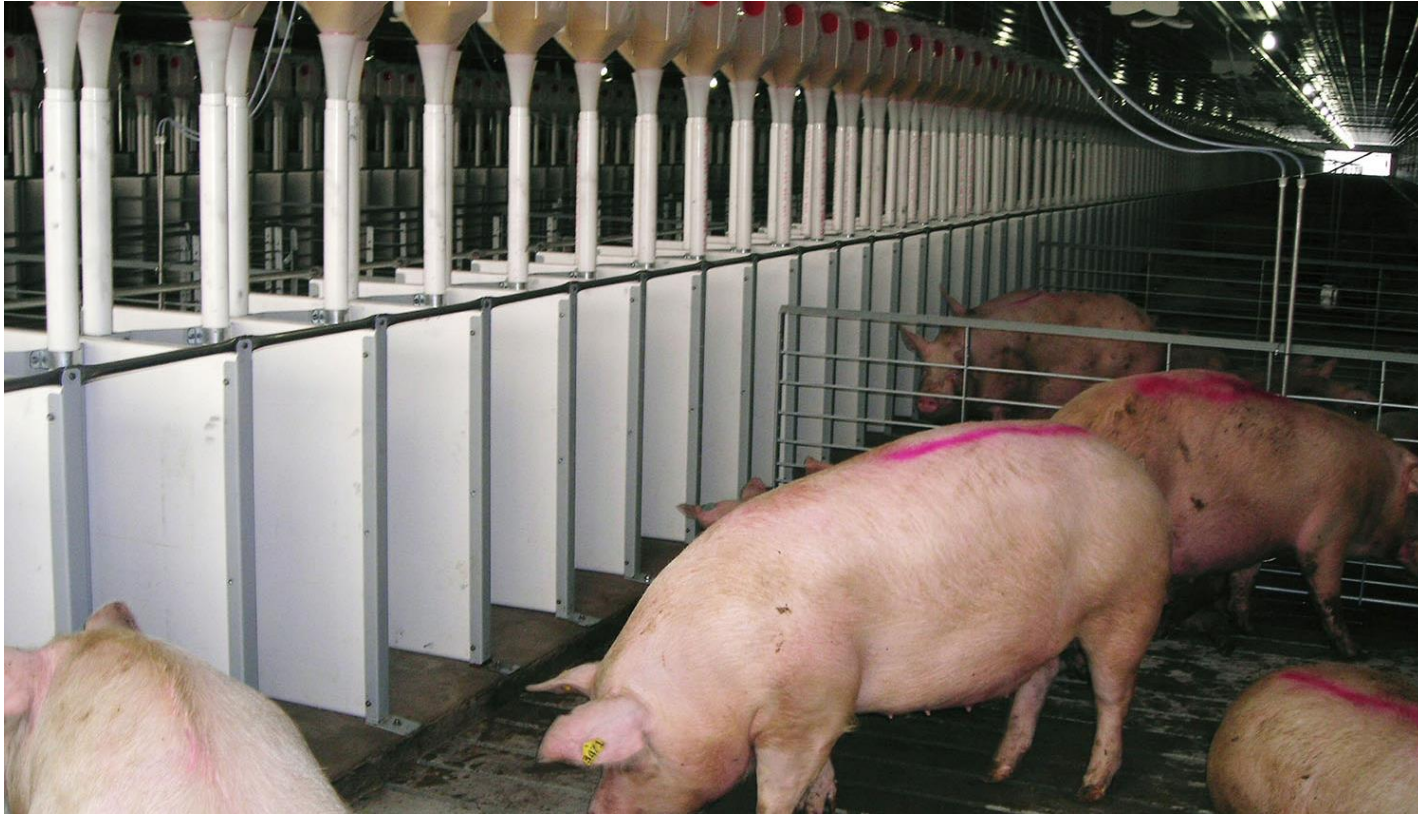


EVENTUALLY EITHER OF THESE CAN LEAD TO ANIMAL MORTALITY IF NOT ADDRESSED.

Moisture can be an issue as well. Air that's too wet or too dry can make it difficult for the animals to do the vital function of breathing - causing them to burn unnecessary calories.

FEED BOTTLENECKS AND ANIMAL-SPECIFIC RATIONS DISRUPT PIG GROWTH

Nutrition is key for pigs at every stage of development. From sows to finish hogs, a variety of rations are needed to develop optimum growth at the right stages. Some hogs may need high protein or high energy rations, more or less feed depending on size or increased nutrition throughout their life cycle. Understanding these needs is important for successful production.



For example, when pigs are fed an incorrect ration from the previous herd - due to not properly reclaiming the rations in the bulk bin, pigs average 2 lbs. lighter at closeout.

Hogs are very sensitive to out-of-feed events. Even the smallest events can have a significant impact on overall production.



OUT-OF-FEED EVENTS

Every time an out-of-feed event occurs, it adds a full day to a hog's time to slaughter. For each event, the overall cost per animal is \$1.85*. While that may not sound like much, multiplied across 2,500 hogs in the barn, this means one instance makes for a loss of \$4,625!

Pigs that run out of feed are more likely to exhibit pen aggression and to develop ulcers or succumb to hemorrhagic bowel syndrome. Producers will also notice increased backfat depth and less muscle mass conversion.

CONNECTED SYSTEMS TAILORED FOR SWINE PRODUCTION

Chapter 2

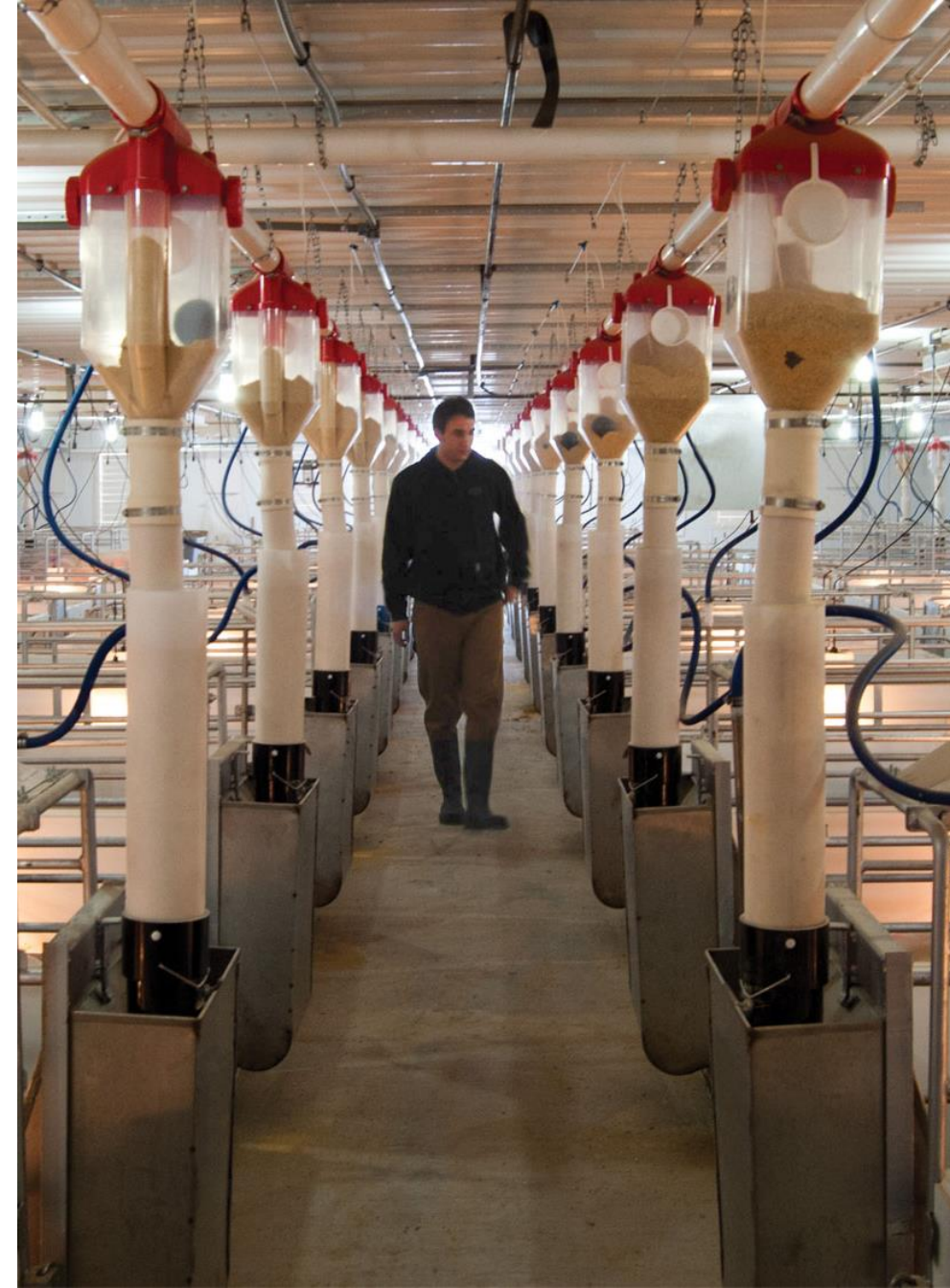


AP's level of expertise in the field of swine production means we understand the importance of building connected systems that meet the needs of every operator. Excellent ventilation and feeding systems are vital to an operation's success. As the technology needed to maintain an ideal swine environment continues to evolve, there are a plethora of options to keep your hogs comfortable, well fed and productive.

KEEPING FEEDERS FULL

AP's Feed Management System gives producers the ability to easily monitor feed inventory and consumption. The system can predict when feed bins will be empty, preventing out of feed events and cutting back on wasted deliveries. The system can help producers better plan for feed deliveries, alerting a producer ahead of time that he or she needs to place a feed order and reducing the chance of feed having to be recovered.

Today's sow feeders can feed sows based on their unique nutritional needs, no matter their growth stage. Using an RFID tag, the feeder knows which sow is in the feeder and can dispense just the right amount of feed based on weight, health or gestational stage. This helps keep each sow in her proper body condition. Some feeding systems can provide top dressing with additional nutrients needed by the individual animal.



VENTILATION

Barn ventilation has come a long way in the past 20-30 years. In a time when good labor is hard to come by, it's important to keep up to date on how ventilation processes can be connected and automated to save money on time and labor and to ensure that everything is running in perfect order. Fans, curtains, inlets, heaters and an evaporative cooling system all play a key role in keeping your pigs in a temperature neutral environment, no matter what it looks like outside the barn.

Fans drive air through the barn, providing fresh air, removing excess heat and keeping a breeze running across the animals - ideally at 400-700 feet per minute. Ceiling inlets help distribute the air effectively, especially during the winter.



HOG VENTILATION CHECKLIST

- ☐ Make sure your hog barn shutters are clean.
- ☐ Blow the dust out of your fans and heaters.
- ☐ Clean your air inlets.
- ☐ Evaluate your actuators.
- ☐ Ensure your curtains are opening and closing properly.
- ☐ Tighten fan belts.
- ☐ Make sure your evaporative cooling / misting system is clean.

AUTOMATION AND CONNECTIVITY CHANGE THE GAME

Chapter 3



The EDGE 2 system provides producers with access and data from barns at multiple sites, and growers can easily see set points and current temperatures. Ventilation connectivity makes it easier to develop programs that provide your herd with an ideal climate. A producer can move from winter to summer settings, adjusting fans and curtains at the touch of a button. Controllers can also connect to weather stations, meaning data coming from outside the barn helps you make smarter ventilation decisions for your pigs. The system can also help you address

potential issues. By collecting data from your AP EDGE 2 controller, the system can tell you when to perform maintenance you may not have known you needed.

On the feed management side, the system can tell you when to order more feed or alert you to any concerning consumption patterns, letting you address challenges before they start. It can also automate the process of delivering that information directly to the feed mill, streamlining your processes and taking a little work off your plate.



HOW THE EDGE 2 CONTROLLER IS BRINGING PEACE OF MIND TO PRODUCERS IN ILLINOIS

Clare and Drew Schilling are a brother-sister team from Illinois that manage their family's hog operation.

The Schillings have found that the EDGE 2 lets them keep an eye on their whole operation, across multiple barns at multiple sites. They can see set points, average temperatures, number of animals and days in the barn, all in one location. The ability to create programs and easily use the system in a bilingual format has created a lot of confidence within their team that everything is set up and running as it should be. And its remote accessibility brings peace of mind to operators who simply can't be everywhere at once. *Check out their [testimonial](#) on our YouTube channel.*

LEARN MORE ABOUT AP

AutomatedProduction.com