

Antibiotic Free Production of Pork.

M. Terry Coffey, PhD



In the United States (US), the momentum for livestock producers to shift toward antibiotic-free production began to accelerate in 2014 with the announcement by Chick-fil-A of its intention to source only products raised without antibiotics within five years. Up until that time, antibiotic- free production was usually part of other product categories like organic meat and sold in high- end retailers like Whole Foods or specialty shops. Over the following two years, numerous fast food chains, fast casual restaurant chains and grocery retailers publicly announced plans to procure some or all of their meat supply from systems with modified use or total elimination of antibiotics.

The transition within the broiler industry has been dramatic with the majority (>50%) of US production being raised without antibiotics (RWA) today. Within the swine industry, there have been changes in regulations that have eliminated using antibiotics for growth promotion of pigs that are important to human health. Regulations also require increased veterinary oversight.

These changes have lowered the total use of antibiotics, still only a relatively small percentage of the industry is RWA. Examining some of the factors that have influenced where the swine industry is today will provide insight into what the future might hold for antibiotic-free pork production.

With regard to antibiotic use, there are three issues from a regulatory and/or a consumer perspective to consider. First, from a human health/regulatory perspective, the concern is that use of antibiotics in food animal production could lead to the development of resistant organisms and therefore diminish the usefulness of important antibiotics to treat disease. Of particular concern is the use of drugs that are classified for human health that are used for the purpose of growth promotion in pigs. Another issue is that the improper use of antibiotics in food animal production could result in antibiotic residues in the meat. Finally, there are consumers that have expectations about how their food is produced, and they simply prefer to purchase meat raised without antibiotics.

From the standpoint of human health, the US, Canada, European Union, and other countries have modified regulations to eliminate using an antibiotic important to human health for swine growth promotion. This became effective during 2018 in the US. With regard to residue avoidance, increased regulatory requirements for veterinary oversight, producer education regarding proper compliance with withdrawal requirements, and FDA inspection of feed manufacturing records, etc., have been shown to be effective. Without doubt, the regulatory



landscape will continue to evolve, but these changes have addressed to some extent the issues of antibiotic resistance, residue avoidance and have resulted in reduced use of antibiotics in swine production.

Over the last five years, food service and retailers have engaged producer organizations, producers, veterinarians, and other experts to refine their policy positions on antibiotic use. There are obviously differences in the production and life cycle of poultry, swine and cattle. For instance, the poultry industry was able to more rapidly shift to RWA production because the life cycle of broilers is much shorter and the health and biosecurity advantages of hatcheries (in ovo vaccination) compared with sow farms. Today, restaurants and grocery store chains have developed separate antibiotic use polices specifically for each species (pork, beef, and poultry) based upon these types of differences. For swine production, the policies address topics such as management of antibiotic use, restrictions on the use of certain antibiotics, and use reduction targets. Most do not require the elimination of antibiotic use or RWA production.

In pig production, the judicious use of antibiotics remains an important tool for ensuring animal well-being and food safety. These factors must be considered in balance with the goal to reduce or eliminate antibiotic use. Also, in addition to the requirement to care for their animals and to produce safe and wholesome food, swine producers are committed to protect the environment. Healthy animals are more efficient, require fewer resources and, therefore, have a reduced environmental impact.

What does the future hold for RWA production of pork? I have worked with teams that have successfully developed and executed RWA with outstanding performance outcomes while consistently delivering volume commitments to the packer. These systems require high health status farms that are relatively isolated from other pigs, modifications of feed additives use, and changes in wean age, housing and the feeding regime. So, in the right system and in the right location, animal health and well being can be successfully managed with reasonable performance. However, cost of production is significantly higher and RWA programs struggle to be economically sustainable due to the inability to extract enough price premium to cover the added cost of production.

There are other factors that raise the cost of RWA programs. Some retailers and restaurant chains stack additional requirements, unrelated to antibiotic use, onto



the RWA product

specifications. For example most require that the RWA product be sourced from pigs from sows housed in gestation pens vs gestation crate systems. The use of animal byproducts such as rendered fat, meat meals, and, in some cases, whey in feed are not allowed and result in higher cost of feed. Another disadvantage is that cost effective alternative feed ingredients like DDGs can't be fed because antibiotics are used in the fermentation processes that they come from. In my experience, the added cost of RWA production versus conventional production is elevated more by additional feed ingredient and production restrictions than animal performance impacts.

Obviously, the packer must pay the producer a premium for the added cost of RWA production. The challenge then is for the packer to recover enough premium from the products of the hog carcass to support the higher price. Thinking about the products that come from the pig carcass, which ones can logically support a premium price to recover the added cost?

From fresh meat, loins and tenderloins can't be sold at a large enough premium to cover the cost of the entire RWA carcass. The belly is the highest value prime cut. Maximum value realization depends upon conversion to bacon, and that's not a product that will command significant price premium for RWA vs conventionally raised product. The same is true for the other prime cuts (hams, picnics and butts), organ meats, sausage, hot dogs, etc. Therefore, a limitation to expansion of RWA swine production is the inability to attract enough price premium from the products of the pig carcass to pay for the added cost of RWA production.

As the industry moves forward, there are some ways to think about how to produce RWA product more efficiently. The most obvious is to eliminate some of the production requirements that add significant cost but have nothing to do with antibiotic use. Advancements in feed additives and improved preventative health technologies such as more effective vaccines and vaccines for new diseases will also be important to lower the cost of RWA production.

There is also work to be done to find ways to extract more value from RWA pork. Conversion of fresh pork to further processed packaged products is the key to profitability of conventionally raised pork especially for the lower value cuts like ham This is the same for RWA pork. More of the RWA carcass needs to be converted to high value products, such as deli meat, that can potentially demand



premiums in the market place.

Because of the importance of antibiotics to human health, there will continue to be scrutiny on swine and other livestock producers about their use of antibiotics. To significantly expand RWA production, producers and animal health experts will need to work together to develop

production systems that provide improved biosecurity, support better animal health and result in RWA production at a competitive cost. At the same time the packing industry will need to develop new products and markets that feature RWA premium products.

