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Swine production feed grade antimicrobial use survey findings

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Introduction

The use of feed grade antimicrobials has been a widely debated topic. Although the science behind the implications of feed grade antimicrobials use to human health has been debated, there has been a deficiency in quality information gathered about the way feed grade antimicrobials are actually being used in swine production. Recently a survey was sponsored by the National Pork Board and American Association of Swine Veterinarians (AASV) to examine the actual usage amounts of feed grade antimicrobials and the various reasons for the use. The National Pork Board and AASV teamed up with Dr. Eric Bush from the USDA-NAHMS surveys to gather important information needed to accurately understand true feed-grade antimicrobial use. The main areas of importance in the survey were a more accurate understanding of the levels of antimicrobials used, duration of use (days), and reasons for use of the specific feed grade antimicrobial. This article is an opportunity to share some of the more interesting and salient points around the interaction of feed-grade antibiotic usage and swine veterinarians. The actual results of the survey and information will be published in a peer reviewed article.

Anatomy of the survey process

The survey was designed to capture feed grade antimicrobial use from wean to market. It had similarities in design to the NAHMS surveys. It was broken down in size of production site: Small = less than 2000 head, Medium = 2000-4999 head, Large = 5000 head or more. The number of days spent in the nursery and finishing phases were captured along with the average daily gain (lbs/day) in a respective phase of production. The age of the pigs arriving and departing the nursery and finishing phase was also captured. Each veterinarian would then categorize the feed grade antimicrobial use during the phase of production by dose, and days in the feed, as well as the percentage of the pigs in production using the product. Lastly, they would provide one of the following reasons for use:

1. Growth promotion
2. Disease prevention

3. Respiratory disease treatment
4. Polyserositis / meningitis treatment
5. Other treatments (specify: _____)

The veterinary participants were categorized by breadth of practice influence and geographic representation. Thirty seven veterinarians were contacted to participate. Thirty one agreed to participate initially. Twenty seven successfully completed the full survey. The survey took at least an hour of preparation prior to sitting down to complete. Many veterinarians needed to step back and determine the percentages of use represented by their practice. This required calculating the pigs represented by any given use of feed grade medication in context to all pigs at that phase of production as a percentage of all pigs in production. The survey process itself then took another one to two hours to complete via the phone. To insure accuracy, follow-up phone calls were made in order for the participants to be sure to capture the usages by production flows. One of the main challenges encountered was the differing rations and specific feed budgets between true nursery and finishing flows and wean to finish flows.

One survey was disqualified due to the inability to reconcile the feed consumptions in the various flows with the duration of the feed budgets. There were not enough days to market for the pigs to eat what was budgeted and therefore all usages or lack of feed grade antimicrobial usage were inaccurate. The four other participants that initially agreed to participate felt they either did not have the information to complete the survey, or simply did not have the time to complete the survey in the time allotted. All surveys were completed in September and October of 2009.

Reasons for feed grade antimicrobial use in swine production

Swine veterinarians often have more specific reasons for the choices in type of feed-grade antimicrobials used than previously reported. Growth promotion was just one reason and was reported less frequently than specific disease concerns. Generally, there is more diagnostic evidence of disease influencing the feed medication inclusion

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decision than growth performance. In the nursery phase of production, many of the veterinarians surveyed could clearly articulate the diagnostic basis of their decisions for the specific choice in antimicrobial used. Completion of the survey was more difficult when there had been recent adjustments of the usages due to recent diagnostics. This was also true for the finishing phase of production. There were notable pulse programs based on previous issues with specific disease concerns such as *Mycoplasma* or *Ileitis*, but the constant use of antimicrobials purely for performance appears over-stated.

Quantification of use for feed grade antimicrobial use in swine production

The overall quantity of feed-grade antimicrobials and the estimation of use by the public may be confused by a couple of important points. The levels being used are generally for a much shorter period of time than “constant.” The amounts used are often set up as a therapeutic use for specific disease pressures that have a diagnostic history of a health concern within a production flow. This means the dose levels may be higher in some instances but for a much shorter duration. The use of feed grade medication at levels above the “growth promotion” level per label were at levels specific to a “treatment” label for any given feed-grade medication. Generally any growth promotional usage appears to be in the later finishing phase of production and many of these usages are at the lowest label dosages. The most interesting finding in production flows was the absence of any antimicrobials used during the nursery and finishing phase of production. There are large portions of production systems at given periods of the growing phase that are feeding rations in nurseries and finishers with no feed grade antimicrobials.

Summary

The realities of feed grade antimicrobial use in swine production are important to the swine industry, animal welfare and the general public.

- Accurate reporting of feed-grade antimicrobial use is important for the ongoing scientific debate surrounding their current and future use in swine production.
- The reasons for use are much more focused on the health and welfare of the pig than on the performance of pig's growth.
- Pigs are not constantly on feed grade antimicrobials as they grow. There are many pigs at any given time that are *not* consuming feed grade antimicrobials.
- Veterinarians are playing a vital role in the responsible use of feed-grade antimicrobials by using diagnosis and health assurance programs to strategically use the medications.
- The willingness of veterinarians to share this information further illustrates the need for an accurate report of responsible use to reference
- The public perception will not change unless accurate information is shared with them about the responsible use of feed antimicrobials in swine production.

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