

STRATEGIES THAT EMPHASIZE MANAGEMENT OVER MEDICATION IN EXTENSION SWINE PRODUCTION

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OBJECTIVE

The proposed research aimed to determine the factors contributing to the increase in antibiotic use in MI swine production, compare MI trends in AB use with national trends, and develop and evaluate a program for MI pork producers that promotes evidence-based herd management techniques over medication. An electronic survey was administered to swine veterinarians in seven states to gather data regarding AB use in swine production, on-farm disease incidence and severity, and non-AB-dependent disease management strategies.

EDUCATIONAL OUTREACH

The MSU Extension Pork Team has produced a series of articles and fact sheets for Michigan pork producers and swine veterinarians. They have also created a resources section titled "Management over Medication" on their website, which includes short videos explaining practical applications of the approaches described in the articles and fact sheets.

Video Topics Include:

- Ventilation systems for indoor, mechanically ventilated barns
- Alternative cooling systems for outdoor and niche barn systems
- Developing a herd health plan with a veterinarian
- Rodent and pest control for swine facilities
- Parasite control for your swine herd
- Secure Pork Supply plans for small swine farms
- Vaccination tips for your swine herd
- Herd health surveillance with oral fluid testing
- Small herd animal well-being

GRANT INITIATIVES

Year 1 of grant: Survey small swine producers and vets through paper and online.

Year 2 of grant: Assess program outcomes by measuring the adoption rate farm impact on swine health and performance using a follow-up questionnaire.

SITUATION STATEMENT

The Veterinary Feed Directive (VFD) banned the use of medically necessary antibiotics in feed/water to improve growth and feed efficiency in livestock. Sales of feed grade AB for swine production declined by 43% in 2017 but rebounded by 17% in 2018 and continued to increase by 9% in 2019. This proposed project will survey swine veterinarians and MI pork producers to determine if the uptick in AB use is a measured response to health issues that could be addressed effectively using non-AB-dependent approaches. The project will develop educational programming based on survey results emphasizing evidence-based strategies that favor management over medication.

PROJECT SUMMARY

- The project successfully got the targeted number of small swine producers and small herd veterinarians within Michigan.
 - Michigan producers noted they wanted more information on alternative disease management options and how to optimize biosecurity on non-conventional farming operations.
 - Michigan veterinarians wanted to know more about cleaning and disinfection strategies, emphasized using vaccines and dewormers, and understood environmental factors.
- 9 videos were professionally published, targeting the concerns and information needed from the producers and veterinarians.
 - Per MediaSpace analytics from September 2023 until January 2024, the average of 837 Player Impressions of all the videos, with an average of 48% Completion Rate and reaching over 40 counties.
- 15 articles and factsheets were published via the MSU Extension Pork team and picked up by other swine media outlets that were shown as a knowledge gas from the surveyed audience.
- Further research and outreach are being done to further this educational project.

SURVEY RESULTS

Survey Results: 100% of the target numbers of swine veterinarians and small swine producers were reached for this survey. Results include:

Table 1. Key findings from the Swine Producer and Veterinarian Survey explore changes in herd health, antimicrobial use, and other disease management strategies since VFD implementation in 2017.

Survey questions	Swine Producers (n = 25)
Size of operation (# head typically on farm)	• <100 (72%), >1000 (20%)
Farms using feed-grade antimicrobials that require VFD	• 52%
Change in use of feed-grade antimicrobials since VFD	• no change (72%), use less (24%)
Diseases treated using feed-grade antimicrobials	• cough (56%), scours (40%), labored breath (40%), fever (25%)
Use of injectable antimicrobials	• use more (20%), no change (68%)
Use of vaccines	• no change (76%), use more (24%)
Diseases vaccinated against	• PCV2 (52%), PLE, M.hyo (44%), SIV (40%), PRRSv (28%)
Other feed or water additives used to prevent disease	• probiotic (32%), org acid (20%), carbadox (20%), zinc (16%)
Health of herd since VFD	• no change (96%)
On-farm biosecurity measures practiced/recommended	• individual pig care (56%), vaccines and dewormers, isolate sick (52%)
Knowledge of and compliance with VFD guidelines	• state they understand and comply with VFD guidelines (36%)

Table 2. Veterinarian survey responses exploring changes in herd health, antimicrobial use, and other disease management strategies since VFD implementation in 2017.

Survey questions	Veterinarian Response* (n = 16)
Size of operation (# head typically on farm)	• < 100 (56%) • > 1000 (44%)
Farms using feed-grade antimicrobials that require VFD	• 56%
Change in use of feed-grade antimicrobials since VFD	• use less (63%) • no change (31%)
Diseases treated using feed-grade antimicrobials	• respiratory condition (69%) • scours (63%) • repro issue (13%)
Use of injectable antimicrobials	• use more (69%) • no change (25%)
Use of vaccines	• use more (44%) • no change (50%)
Diseases vaccinated against	• PLE (82%) • M.hyo (63%) • PVC2, SIV, E.coli, and Clostridium (56%)
Other feed or water additives used to prevent disease	• carbadox (56%) • zinc (50%) • probiotic (38%) • ionophore (25%)
Health of herd since VFD - clients report increased incidence	• respiratory (50%) • scours (38%)
On-farm biosecurity measures practiced/recommended	• pig sourcing (94%) • disinfection (88%) • vaccines and dewormers (81%)
Statement about client's knowledge and compliance with VFD guidelines	• varies greatly (38%) • have little interest (38%)

*Veterinarian responses about the practices of clients they work with.



MSU Extension Management over Medication Website

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