Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 10 *Swine Day (1968-2014)*

Article 193

1982

Value of rhinitis vaccination of young pigs

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Abstract
A study was conducted using 57 pigs from 10 litters to evaluate the value of rhinitis vaccination on performance, carcass quality, and health status. Pigs vaccinated with bordetella vaccine had fewer (P<.05) days to market and weight gains were superior (P<.05) to the non-vaccinated control group. Carcass quality and turbinate atrophy were not different among treatments. Turbinate scores were not related to growth rate.; Swine Day, Manhattan, KS, November 11, 1982

Keywords
Swine day, 1982; Kansas Agricultural Experiment Station contribution; no. 82-614-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 422; Swine; Rhinitis; Young pigs; Turbinate atrophy

Value of Rhinitis Vaccination of Young Pigs

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Summary

A study was conducted using 57 pigs from 10 litters to evaluate the value of rhinitis vaccination on performance, carcass quality, and health status. Pigs vaccinated with bordetella vaccine had fewer ($P<.05$) days to market and weight gains were superior ($P<.05$) to the non-vaccinated control group. Carcass quality and turbinate atrophy were not different among tretments. Turbinate scores were not related to growth rate.

Introduction

Many swine producers have been forced to vaccinate for atrophic rhinitis. Organisms commonly associated with rhinitis are bordetella and pasteurella. Vaccines containing both, however, are usually more expesive. Therefore, the purpose of this study was to evaluate the effects of AR-Pac® (only bordetella), AR-Pac-P® (bordetella + pasteurella) and combination vaccine (bordetella + pasteurella + erysipelas).

Experimental Procedures

Pigs within 10 litters were randomly assigned one of the four treatments: 1) control (no vaccination), 2) AR-Pac[1] (only bordetella), 3) AR-Pac-P[1] (bordetella + pasteurella), and 4) combination vaccination[2] of bordetella + pasteurella + erysipelas. The vaccines were given intraperineally in the rear flank of pigs at 7 and 21 days of age. Sows had been previously vaccinated with AP-Pac-P and an erysipelas vaccine.

Litters were weaned at approximately 21 days of age and placed in conventional nursery. Grain-milo-soybean meal (20% protein) diet containing ASP-250® was fed until about 40 pounds. Pigs were then moved to dirt lots and fed a 16% protein diet until approximately 100 pounds.

A 14% protein diet was fed until market weight. The number of days to market (date slaughtered - date of birth) and weight per day of age (slaughter weight divided by days to market) were recorded.

Pigs were slaughtered at approximately 220 pounds to evaluate the effects of the treatments on carcass quality (backfat, loin-eye area, % muscle, and dressing %) and health status. Lungs and turbinates (scroll-like, mucous membrane-covered structures in each nostril) were evaluated. A turbinate score of 0 to 3 was given with 3 being the worst based on the severity of degeneration.

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[1] Burns-Biotec product

[2] Salisbury product

Results and Discussion

Effect of the rhinitis vaccination on performance and carcass quality is shown in Table 1. There were 12 to 16 pigs per treatment. At 8-weeks of age, pigs receiving the AR-Pac or AR-Pac-P weighed more (P<.05) than the control pigs. Pigs vaccinated with AR-Pac had fewer (P<.05) days to market than the control pigs, but the number of days to market was similar between the control pigs and pigs vaccinated with AR-Pac-P. Weight per day of age was greater (P<.05) for the pigs vaccinated with AR-Pac than the control pigs.

Hot carcass weight, loin eye area, percent muscle, and dressing percentage were not affected by the vaccinates, although pigs vaccinated with AR-Pac tended (P<.05) to have more backfat.

Turbinate scores and lung lesions were not different among treatments, but the control pigs tended to have more turbinate atrophy. However, the turbinate score was not correlated with any of the performance or carcass traits. Barrows tended to have more turbinate atrophy than the gilts (.44 vs .23).

Although atrophic rhinitis has not been a serious problem in the KSU swine herd, these results suggest that the group vaccinated with bordetella is superior to the non-vaccinated control group. However, the AR-Pac-P (bordetella + pasteurella) and 3-way combination vaccine (bordetella + pasteurella + erysipelas) tends to be less effective than the AR-Pac-P.

Table 1. Effect of Rhinitis Vaccination on Performance and Carcass Quality

	Treatment			
	Control	BB-Pac[a]	BB+Pac-P[a]	BB+P+Ery[b]
No. pigs	16	14	15	12
Weight, lbs				
3-week	9.8	10.1	10.6	9.4
5-week	11.6	12.3	13.1	11.2
8-week[c]	22.5	27.0	28.4	23.4
Slaughter wt, lbs	215	221	222	2a5
Days to market[c]	195	178	194	184
Wt/day of age, lbs	1.10	1.20	1.13	1.16
Hot carcass wt, lbs	154	154	162	153
Loin-eye area, sq. inches	4.55	4.51	4.79	4.49
Backfat, inches[c]	.68	.99	.84	.80
% muscle	56.3	54.9	55.2	55.1
Dressing %	71.9	72.9	73.7	72.5
Turbinate score[d]	.48	.16	.15	.34

[a]Burns-Biotec product
[b]Salisbury product
[c]Treatment difference (P<.05)
[d]Score 0 to 3 with 3 being the worst; not correlated with any of the above traits.