pigs were ranked based on BW and randomly allotted in a randomized complete block design to 1 of 4 dietary treatments fed in 3 phases (Table 205). Phase 1 diets contained 38 g/MT tiamulin, Phase 2 diets contained 440 g/MT chlortetracycline, and Phase 3 diets contained 55 g/MT mecadox. Phase 1 diets were typical nursery diets consisting of corn and soybean meal base, and included whey, fish meal, and plasma. Phase 2 and 3 diets were primarily corn and soybean meal. Feed and water were provided ad libitum throughout the study. Analysis of variance and orthogonal contrasts to determine linear, quadratic, or cubic responses to LFP inclusion were performed using Statistix. Pigs and feeders were weighed on d 0, 10, 20, and 34 to determine BW, ADG, ADFI, and G:F. During Phase 1 there was a significant quadratic response in ADG (76.6, 98.0, 98.0, and 87.1 g/d for Control, LFPLow, LFPMid, and LFPHigh, respectively; $P < 0.05$) and net return over feed cost ($P < 0.05$) with greater ADG and economic return observed in LFPLow and LFPMid compared to Control and LFPHigh. During Phase 3 there was a linear improvement in ADG (473.1, 481.7, 494.0, and 508.9 g/d for Control, LFPLow, LFPMid, and LFPHigh, respectively) and ADFI ($P < 0.05$) as the level of LFP inclusion increased. Additionally, there was a linear increase in ADFI ($P < 0.05$) and a tendency for a linear increase in ADG (303.9, 320.2, 323.4, and 326.1 g/d for Control, LFPLow, LFPMid, and LFPHigh, respectively; $P < 0.08$) in the overall 34 d study period as the level of LFP increased. On d 34 there was a numerical improvement in net return over feed cost ($8.15, 8.55, 8.68, and 8.60 for Control, LFPLow, LFPMid, and LFPHigh, respectively; $P = 0.24$). In conclusion, providing LFP improved ADG, ADFI, and net return compared to control-fed pigs.

Key Words: growth performance, *Lactobacillus acidophilus* fermentation product, weaned pig
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Table 205. Dietary treatments

	Lactobacillus acidophilus fermentation product inclusion/MT		
	P1 (d 0-10)	P2 (d 10-20)	P3 (d 20-34)
Control	0	0	0
LFPLow	0.5 kg	0.5 kg	0.25 kg
LFPMid	1.0 kg	1.0 kg	0.5 kg
LFPHigh	1.5 kg	1.5 kg	0.75 kg

206 Impact of ractopamine hydrochloride (Paylean®) on performance of heavy finishing pigs using a 3-cut marketing strategy.

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The objective of this study was to evaluate growth and carcass performance of heavy finishing pigs fed ractopamine hydrochloride (RAC) (7.4mg/kg) in a 3-cut marketing strategy. Two thousand one hundred and fifty-eight pigs were utilized in 88 pens of approximately 25 pigs per pen in a commercial finishing barn. Sixteen percent of the total pig population were marketed during the first marketing period, 40% were marketed in the second marketing period, and the remaining 44% were marketed during the third marketing period. Data were analyzed as a randomized complete block design (blocking factor was d of start on test) with 2 treatments and 44 replications per treatment. There were no differences ($P = 0.98$) in start weight between pigs fed RAC (121.00 kg) and pigs fed the control diet (120.99 kg). Overall, RAC carcasses (111.68 kg) were 3.92 kg heavier ($P < 0.0001$) than the control (107.76 kg), carcass dressing percent was improved ($P < 0.0001$) 0.67 (% points), loin depth was 4.95% greater ($P < 0.0001$), estimated lean was 0.99% points greater ($P < 0.0001$) (57.18 vs. 56.19) and fat depth was 6.3% lower ($P < 0.0001$) compared to the controls. Overall, RAC pigs had 0.16 kg/d increased ($P < 0.0001$) ADG (1.01 vs. 0.85 kg/d), and improved ($P < 0.0001$) G:F (0.344 vs. 0.278) while ADFI (2.96 vs. 3.06 kg/d) was lower ($P < 0.0001$) compared to control pigs. After the first 7 d of feeding, RAC pigs had increased ($P < 0.0001$) ADG (1.03 vs. 0.72 kg/d) and improved ($P < 0.0001$) G:F (0.359 vs. 0.261) compared to control pigs. Loin depth increased ($P < 0.01$) and HCW from RAC carcasses tended ($P = 0.08$) to be heavier than control carcasses (106.02 kg vs. 104.41 kg). At the end of the second marketing period (21d), RAC carcasses were 4.46 kg (112.17 vs. 107.71) heavier ($P < 0.0001$), leaner ($P < 0.0001$), and yielded more ($P < 0.0001$) than the control carcasses. RAC increased ($P < 0.0001$) ADG, improved ($P < 0.0001$) G:F, and reduced ($P < 0.0002$) ADFI compared to the controls. At the end of the third marketing period (35d), RAC carcasses were 4.15 kg (113.05 vs. 108.9) heavier ($P < 0.0001$), leaner ($P < 0.0001$), and had greater ($P < 0.0001$) dressing percent compared to the controls. RAC inclusion improved G:F ($P < 0.0008$) and reduced ($P < 0.0001$) ADFI compared to the controls. These results suggest that while improvements in growth performance from feeding RAC will generally decline after 21 d of feeding, carcass traits, particularly carcass yield and lean content, will continue to improve until d 35.

Key Words: 3-cut marketing, heavy finishing pig, Paylean
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207 A mixture of organic acids and botanicals improves the intestinal barrier functionality in vitro.

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Organic acids and botanicals are widely used in animal nutrition as antibiotic replacers or adjuvant and recent studies have highlighted their possible role as "intestinal health enhancers" via

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