

Effect of Removing Market Ready Pigs on Performance of Their Pen Mates

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Summary and Implications

Results of this study suggest removing 25% or 50% of market ready pigs two weeks prior to the final marketing date does not affect test performance of pen mates. This study does not support the commonly held producer belief that removal of a percentage of market weight pigs will improve overall pen performance. If pigs are provided the space per animal utilized in this study, producers could reduce the labor associated with marketing by selling all of the pigs as a single group.

Introduction

Commercial swine producers commonly practice split marketing of finishing pigs. Very limited data currently exist in the scientific literature concerning this subject. Obtaining a better understanding of the physiological, behavioral, and production effects of split marketing would identify management practices that would contribute to a commercial producer's ability to maximize profit potential from their growing-finishing facilities. The objective of this study was to determine if split marketing at the 25% or 50% levels affected test performance of pen mates.

Materials and Methods

Data from 649 barrows and gilts were utilized to determine the effect of removing market ready pigs on performance of pen mates. Distribution of animals within each replication is shown in Table 1. Following the animal care and use committee guidelines, all pigs were provided eight square feet per pig (.73 m² / pig) of floor space. A commercial line of high health barrows and gilts, having high lean growth potential, were assigned to treatments at about 10 weeks of age. Animals were randomly assigned to one of three treatments: C (control) consisting of 26 pigs / pen that were marketed as a single unit; SP25 (split marketed - 25%) consisting of 26 pigs / pen in which the heaviest 25% of pigs were marketed two weeks prior to their pen-mates; or SP50 (split marketed - 50%) consisting

of 26 pigs / pen in which the heaviest 50% of pigs were marketed two weeks prior to their pen-mates. Animals were weighed on test at 10 weeks of age and at all marketing dates. Individual tenth rib backfat (BF10) and loin muscle area (LMA) measurements were ultrasonically evaluated on all pigs one week prior to marketing. Pen feed intake was calculated by feed weigh-back to determine group feed intake, feed efficiency (feed / gain), and efficiency of lean gain (feed / lean gain). Average daily gain (ADG), days to market (AGE), and average daily lean growth (LGOT) were calculated from the data collected on individuals. A mixed linear model was used for individual and pen traits. Pen was the experimental unit of measurement in this study. For all traits, treatment and replicate were included as fixed effects in all models. On test weight was used as a covariate in the analysis of ADG, LGOT, group feed intake, feed efficiency, and efficiency of lean gain while off test weight was used as a covariate in the analysis of AGE, BF10, and LMA. Total pig days per pen was used as a covariate for group feed intake, feed efficiency, and efficiency of lean gain. Pen within treatment was included in all models as a random effect.

Results and Discussion

No treatment differences were found for BF10, LMA, ADG, DAYS, and LGOT (Table 2). No treatment differences were detected for pen feed intake, feed efficiency, or lean efficiency (Table 2). These results are not in agreement with those of Bates and Newcomb (1997) and Woodworth et al. (2000), who demonstrated that removal of the heaviest 50% of the animals within a pen two weeks prior to marketing of pen mates resulted in significant weight gains and increased feed intake in the remaining animals. However, feed efficiency did not improve in their study. Similarly, DeDecker et al. (2002) found no response when the heaviest 24 percent of pigs were removed when compared to pens in which no pigs were removed. The lack of response in the present study could be the result of greater floor space per pig provided prior to any removal of pigs. The ultrasonic measures evaluated are in agreement with previous work (Skroggs et al., 2002).

Evidence from the present study suggests removing 25% or 50% of market ready pigs at two weeks prior to the final marketing date does not affect test performance of pen mates. This study illustrates commercial producers will not gain or lose pen performance when split marketing pigs stocked at accepted pen densities, eight square feet/ pig. If pigs are raised in this manner, producers could reduce the labor associated with marketing by selling all of the pigs as a single group. However, these results may not hold true if

pigs are provided reduced space prior to removal of the heaviest animals as is the case in many commercial settings.

References:

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Table 1. Distribution of records from a study investigating the effects of removing market weight pigs on whole test period performance by treatment and replicate.

Replicate	Treatment ^a							
	Control		SP25		SP50		Total	
	Pens	Pigs	Pens	Pigs	Pens	Pigs	Pens	Pigs
1	1	26	2	52	2	52	5	130
2	2	51	2	52	2	52	6	155
3	2	52	2	52	3	78	7	182
4	2	52	2	52	3	78	7	182
Total	7	181	8	208	10	260	25	649

^a Control = 26 pigs/pen marketed as a single unit; SP25 = 26 pigs/pen with the heaviest 25% marketed two weeks prior to penmates; SP50 = 26 pigs/pen with the heaviest 50% marketed two weeks prior to their penmates

Table 2. Production and carcass trait LS means (\pm SE) for pens of pigs in a study investigating the effects of removing market weight pigs on whole test period performance.

Trait ^a	Treatment		
	Control	SP25	SP50
ADG, lb/d	1.94 \pm 0.02	1.96 \pm 0.01	1.95 \pm 0.01
LGOT, lb/d	0.72 \pm 0.01	0.73 \pm 0.01	0.73 \pm 0.01
AGE, d	170.8 \pm 2.10	170.9 \pm 1.94	169.2 \pm 1.75
BF10, in	0.98 \pm 0.02	0.97 \pm 0.02	0.95 \pm 0.02
LMA, in ²	6.67 \pm 0.04	6.66 \pm 0.04	6.70 \pm 0.03
FI, lb/d	5.35 \pm 0.09	5.55 \pm 0.08	5.35 \pm 0.08
FE, lb/lb	2.77 \pm 0.04	2.85 \pm 0.03	2.77 \pm 0.03
LGE, lb/lb	7.58 \pm 0.14	7.66 \pm 0.13	7.48 \pm 0.12

^a ADG = individual average daily gain; LGOT = individual lean gain on test; AGE = individual age at marketing; BF10 = 10th rib off-midline backfat measured with ultrasound; LMA = 10th rib loin muscle area measured with ultrasound; FI = pen average daily feed intake; FE = pen feed efficiency; LGE = pen efficiency of lean gain.