

## Effect of Sorting Method on Nursery Pig Performance

One of Akey's key research focuses is to challenge existing principles in swine nutrition and management. For years, swine management experts (Akey included) recommended sorting weaned pigs primarily by body weight into nursery pens and then budget feeding pigs according to average weight of the pen. Concerns with fallback pigs, especially in pens of large pigs, made Akey question whether this was the best way to sort pigs at weaning. To answer this question, we conducted two experiments evaluating the impact of sorting method on nursery pig growth performance and resulting variation in closeout weight.

In Exp. 1 (880 pigs weaned at 16-19 days of age), pigs were weighed individually and allotted to one of five pre-determined weight classes: A (15.3 lb), B (12.6 lb), C (11.4 lb), D (10.3 lb), and E (8.6 lb). Weight classes were based on historical distribution of pig weights in the facility. Pigs were then allotted to one of two treatments: Same weight (SW) or mixed weight (MW) pens. The SW treatment had 22 pigs of the same weight class in each pen (i.e., 22-A, 22-B, 22-C, 22-D, or 22-E pigs/pen), which is more typical of current management practices. The MW treatment had 22 pigs from five different weight classes per pen (4-A, 5-B, 5-C, 4-D, and 4-E pigs/pen). Instead of budget feeding SW pens according to average initial body weight, all pens (SW and MW) of pigs were fed identical feed budgets. Pigs were individually weighed on d 0 and d 42 postweaning. Pen weights and feed disappearance data were collected on d 7, 14, and 21 postweaning. During the first two weeks postweaning and for the overall 42-d period, no significant differences were detected between sorting treatments for ADG, ADFI, or F/G (Table 1).

**Table 1. Effects of Same Weight (SW) or Mixed Weight (MW) Sorting on Nursery Pig Performance (Day 0 to 14 and Overall)**

Item	Day 0 to 14		Day 0 to 42	
	SW	MW	SW	MW
Initial wt, lb	11.6	11.8	11.6	11.8
Final wt, lb	18.6	18.5	51.8	53.0
ADG, lb	0.50	0.50	0.96	0.99
ADFI, lb	0.53	0.54	1.25	1.29
F/G	1.07	1.08	1.30	1.30

Akey Trial F3-N01-18 (880 pigs)

Sorting method had no effect on the coefficient of variation (C.V.) for initial weight, final weight, or ADG (Table 2) when MW and SW pens were all fed identical feed budgets. Furthermore, mixing pigs of different body weights within a pen at weaning did not increase ADG or final weight C.V. for the different weight classes of pigs (Table 3).

**Table 2. Coefficient of Variation (C.V.) by Sorting Treatment (Same Weight (SW) vs. Mixed Weight (MW))**

Item	SW	MW
Initial wt C.V., %	4.97	5.21
Final wt C.V., %	11.52	11.39
ADG C.V., %	14.44	14.27

Akey Trial F3-N01-18 (880 pigs)

**Table 3. Coefficient of Variation (C.V.) by Weight Class**

Item	Initial Weight Class, lb				
	15.3	12.6	11.4	10.3	8.6
Initial wt C.V., %	9.42 <sup>a</sup>	2.98 <sup>bc</sup>	2.49 <sup>b</sup>	3.73 <sup>c</sup>	6.51 <sup>d</sup>
Final wt C.V., %	11.80	10.90	12.43	12.20	10.04
ADG C.V., %	14.56	14.12	15.93	15.28	12.07

<sup>abcd</sup> Means lacking a common superscript differ (P<.04).

Akey Trial F3-N01-18 (880 pigs)

In Exp. 2, two groups of 880 pigs each were visually sorted into five weight classes and allotted to treatment (SW and MW) as in Exp. 1. However, pens in the SW treatment in this study were budget fed according to body weight. In other words, the heaviest pens were given less of the first prestarter diet, whereas the lightest pens were given more of the first prestarter feed. Pigs in the MW pens all received the average budget of the SW treatment. From d 0 to 45 postweaning, pigs in the MW group had higher ADG and ADFI vs. the SW group, and were 1.2 lb heavier at the end of the 45-d nursery period (Table 4).

**Table 4. Effects of Same Weight/Budget Fed (SW/BF) or Mixed Weight/ Average Budget (MW/AB) Sorting on Nursery Pig Performance**

Item	SW/BF	MW/AB
Initial wt, lb	10.8	10.9
Final wt, lb	51.9 <sup>a</sup>	53.1 <sup>b</sup>
ADG, lb	0.90 <sup>a</sup>	0.93 <sup>b</sup>
ADFI, lb	1.23 <sup>a</sup>	1.26 <sup>b</sup>
F/G	1.36	1.36

<sup>ab</sup> Treatment differs, P<.01.

Akey Trial F3-N01-29\_36 (1760 pigs)

Summary of Akey research and experience with pig sorting procedures at weaning:

1. Sorting at weaning by mixing pigs of different weights within a pen does not negatively impact growth performance or variation in closeout weight when pigs are fed identical feed budgets rather than budget fed by weight.

2. Having pigs of mixed weight within a pen may decrease the amount of time it takes pigs to establish pecking order, ultimately resulting in better gains.
3. Gate cutting the majority of the pigs at weaning will result in less handling by farm personnel, decreasing stress for pigs and people.
4. Identifying pigs <16 d of age at weaning (at the sow farm) allows nursery personnel to focus on the special needs of these very young pigs.
5. Perhaps age rather than body weight alone is a better indicator of the physiological maturity of the digestive system in pigs. If a pig is heavy but young, feeding less of the first prestarter feed may increase the incidence of fallback and sick pigs postweaning.
6. Sorting off extremely disadvantaged or 'at risk' pigs (i.e., extremely light pigs, sick pigs, and pigs <16 d of age) at weaning and applying specialized care (i.e., mat and gruel feeding with Akey Pig Savor) is still strongly recommended.