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Importance of combining nursery to finish data

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Introduction

In a typical contemporary pig flow system, weaned pigs are moved to the nursery facility for a few weeks and then moved to the finish facility for a few months before going to market. Swine veterinarians and producers frequently use production data to compare performance between groups and farms within nursery and finish. It is commonly suggested that the groups or farms with the best performance in the nursery result in the best performance in finish. However, the correlation between nursery and finisher performance is rarely examined. Therefore, we have collected production data from nursery and finish and linked performance at the two phases to determine the relationship between nursery and finish.

Linking nursery data with finish data

Data used in this report included 104 groups from 22 owners. All groups of pigs were marketed in 1997. We linked 104 nursery groups to 104 finish groups by matching group IDs and group size, i.e., the numbers of pigs in each group moving out of nursery and into finish were the same. Group size ranged from 457 to 1269 with a mean size of 851 pigs. Pigs were from the same genetic source.

Average daily gain, feed conversion, and mortality were calculated for individual groups in nursery and finish independently. Performance for the whole phase of nursery and finish was computed based on the performance in nursery and finish and the time period (days) in each phase. The general information is shown in **Table 1**. Average daily gain and feed conversion of the whole phase were between those in nursery and finish. The whole phase mortality was the sum of mortality in nursery and finish weighted for the periods of time (days) in nursery and finish.

Relationship of performance between nursery and finish

Average daily gain, feed conversion, and mortality in nursery and finish were independently ranked into 5 percentiles: 0–20, 20–40, 40–60, 60–80, and 80–100. Combinations of ranked average daily gain, feed conversion, and mortality in nursery and finish are presented in **Tables 2, 3**, and **4**, respectively. No particular patterns were observed in the combinations. It is obviously seen that a group with high performance in nursery could be either

TABLE 1: Performance in nursery, finish and the whole phase (nursery-finish)

	Average daily gain			Feed conversion			Mortality		
	Mean	Top 20%	Bottom 20%	Mean	Top 20%	Bottom 20%	Mean	Top 20%	Bottom 20%
Nursery	0.86	0.97	0.74	1.57	1.33	1.78	2.02	0.75	4.17
Finish	1.69	1.84	1.50	2.90	2.56	3.24	2.48	1.23	4.13

TABLE 2: Combination of ranked average daily gain in nursery and finish

	Rank %	Finish					
		80-100	60-80	40-60	20-40	0-20	Total
	80-100	2	6	3	5	5	21
	60-80	4	1	7	6	3	21
Nursery	40-60	8	4	5	2	1	20
	20-40	2	5	3	5	6	21
	0-20	5	4	3	3	6	21

TABLE 3: Combination of ranked feed conversion in nursery and finish

	Rank %	80-100	60-80	40-60	20-40	0-20	Total
	80-100	7	2	6	4	2	21
	60-80	3	4	4	4	6	21
Nursery	40-60	4	4	3	5	4	20
	20-40	3	4	5	5	4	21
	0-20	4	7	2	3	5	21

TABLE 4: Combination of ranked mortality in nursery and finish

	Rank %	80-100	60-80	40-60	20-40	0-20	Total
	80-100	2	5	3	5	6	21
	60-80	3	4	6	4	4	21
Nursery	40-60	5	5	2	4	4	20
	20-40	5	4	4	5	3	21
	0-20	8	2	6	2	3	21

high or low performance in finish. For instance, 21 groups ranked at the top daily gain (80–100%) in nursery were subsequently ranked as 2 groups at 80–100%, 6 groups at 60–80%, 3 groups at 40–60%, 5 groups at 20–40%, and 5 groups at 0–20% (**Table 2**). Feed conversion (**Table 3**) and mortality (**Table 4**) had similar patterns.

Statistical analysis (χ^2-test) indicated that there were no differences in the distributions of average daily gain (P>.2), feed conversion (P>.7), and mortality (P>.8) in the ranks of nursery and finish combinations.

Summary

Decreased performance in the nursery is not predictive of decreased or increased performance in the finish. Also, higher nursery group performance is not predictive of higher or lower performance in the finish. These data indicate that nursery performance is independent of finish growth performance.