

Effect of sex, weight and age on post-weaning growth of pigs

GN Power¹, JR Pluske², RG Campbell³, PD Cranwell⁴, DJ Kerton¹, RH King¹, FR Dunshea¹¹Victorian Institute of Animal Science, Werribee, Melbourne, VIC 3030²School of Veterinary Studies, Murdoch University, Murdoch, WA 6150³Bunge Meat Industries Limited, Corowa, NSW 2646⁴PD Cranwell Consultants, PO Box 620 Rosanna, VIC 3084

Pigs are commonly weaned at 23-27 days of age. However, the production of milk by the sow reaches a peak at 10-14 days lactation after which milk supply is only sufficient for pigs to attain about 50% of their maximum growth potential (1). By weaning earlier and providing pigs with a suitable high quality diet ad libitum, it may be possible to capitalise on their otherwise unutilised potential for rapid growth. The present study was conducted to determine the interrelationships between age, sex and weight at weaning, on subsequent growth performance of pigs.

Ninety six pigs were used in a 2x2x2 factorial experiment with the respective factors being; age at weaning (14 or 28 days), sex (S) (male or female) and weight (heavy (H) or light (L)). All pigs were weaned into individual pens and given a diet containing 15.5 MJ DE/kg and 0.95 g lysine/MJ DE ad libitum. Eight pigs from each age group were slaughtered at weaning, and at one and two weeks post-weaning, to determine the development of visceral organs and digestive enzymes.

	n	Male				Female				sed	Significance ^{1,2}
		28 day		14 day		28 day		14 day			
		H	L	H	L	H	L	H	L		
Daily gain (g/d)											
1 wk preweaning	96	312	184	341	163	267	146	337	203	24	A*, W***, SA*,
0-1 wk postweaning	80	246	164	77	-21	254	254	81	40	37	S*, W*, A***, SW*,
0-3 wk postweaning	48	467	356	256	174	490	410	260	201	33	S*, A***, W***
Feed intake (g/d)											
0-1 wk postweaning	80	209	144	116	34	226	195	118	73	22	S*, A***, W***, SW*
0-3 wk postweaning	48	515	378	277	188	496	436	275	219	43	A***, W*

¹A= age; S= sex; W= weight; ²*= P<0.05; ***= P<0.001

Prior to weaning the H pigs grew more quickly than the L pigs. However, the pigs weaned at 28 d grew more slowly than the pigs weaned at 14 d, particularly the females. After weaning, the heavier pigs and those weaned at 28 d ate more and grew faster. Also, within age and liveweight groups, females ate more and grew faster than males during the first week post-weaning. The significant SW interaction indicates that, within age groups, L males ate less and grew slower than H males whereas the growth performance of L females was similar to that of H females during the first week post-weaning. These data confirm that sow milk yield limits growth in the latter part of a 28 d lactation. Furthermore, female pigs appear to adjust to weaning at both 14 and 28 d better than male pigs.

Supported in part by the Australian Pig Research and Development Corporation.

1. Dunshea FR, Auldist DE, King RH. The growth potential of pigs before weaning. In: Proceedings of the Australian Association of Pig Veterinarians 1995:67.