MILK INTAKE AND BIRTH WEIGHT DETERMINE LIVE WEIGHT OF PIGLETS

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The growth rate of piglets and their live weight at weaning is determined by the amount of milk they obtain from the sow. This in turn is governed by their birth weight and the sucking position or teat order along the sow's udder (McBride et al. 1965; Fraser and Jones 1975; Hemsworth et al. 1976). We have conducted two studies in an attempt to assess the importance of birth weight and teat order on milk intake and subsequent live weight of piglets at three weeks of age.

A total of 10 sows and 101 piglets was used in the first study where milk intake was estimated between days 21 and 23 by weighing piglets before and after sucking. Teats were numbered one to seven from the anterior to the posterior of the sow's udder and, at each suckling, teat order was noted. Milk intake was regressed on teat order and, as Figure 1 shows, the regression was significant ($P<0.05$) but only a small proportion of the variance was explained ($R^2 = 0.19$). In the second study 54 sucklings were observed between days 22 and 25 of lactation and the teats used by piglets noted and their birth weight and live weight measured. Again, teat order explained a small but significant amount of the variation in live weight at 23 days ($P<0.05$; $R^2 = 0.13$)(Figure 2). Birth weight explained 30% of live weight at 23 days and, when fitted as a covariate with teat order, sucking position no longer predicted live weight.

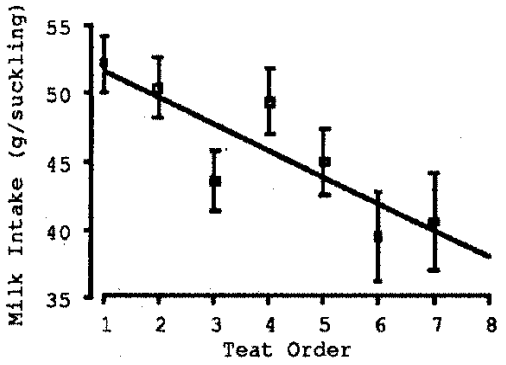

Fig.1 Milk intake and teat order

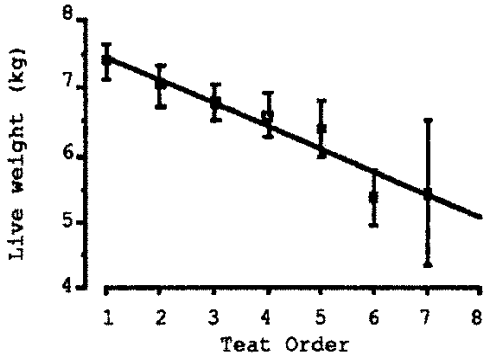

Fig.2 Live weight and teat order

Anterior teats produce more milk than posterior teats at 21 days and they support heavier piglets. Since birth weight explains a significant amount of the variation in weaning weight we conclude that heavier-born piglets may be more efficient at draining their preferred teat(s) than lighter piglets and may stimulate a greater subsequent milk flow. However, the contributions of behaviour and physiology to increased milk output by anterior teats is unknown.

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