

An investigation into the effect of milk supplementation from birth on performance in naturally suckled piglets fed no creep feed

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Introduction With increasing sow prolificacy, it is now not uncommon for batches of sows to farrow litters of 13+ with the expectation that 11+ piglets are weaned. Shunt fostering and artificial rearing are traditional techniques for managing large litter sizes, however they come with inherent problems of utilisation of labour and resources particularly in batch management systems. The sow's ability to produce a sufficient quantity of milk to sustain these litters in late lactation and the competition at the udder for teat space in early lactation has led to a renewed interest in systems where all piglets have access to milk replacer ad-lib from birth.

Materials and methods A total of 120 litters over 5 batches were used. The 3 treatments were supplementary milk being available from birth (M0) or day 7 (M7) or no supplementary milk (NM). There was no creep feed available on any treatment prior to weaning at 24.8 days (sd1.66), and pigs were monitored to 29 days post weaning. The milk replacer was a blend of whey protein powder, vegetable oil, minerals and amino acid supplements (CP 22%, Oil 14%, Lysine 2%). It was mixed daily (150g/litre) and unused milk weighed back. The multiparous sows were allocated randomly to the treatments and were balanced by parity, breed and room. Dam breed types were PIC (Cam 23 Dx(LWxLR)) and JSR (Gene Packer 90 LWxLR). Lactation management followed the standard procedures. Fostering was undertaken within treatment and within 24 hours post farrowing. Imbalances in birth litter size were eliminated at fostering such that the overall treatments were not compromised by pregnancy variations. Housing was standard part slatted farrowing crates and fully slatted flat deck accommodation. The sows were fed a 17.5% CP ration on a standard feeding scale as determined by litter size. Postweaning 4 diets were fed in a commercial regime. Data was subjected to ANOVA using Genstat software (version 12).

Results The average number of pigs born alive was 12.24 (sd 3.14) and there were no significant treatment differences in the number that died between birth and fostering. Table one shows how piglet losses after week 1 were almost eliminated resulting in significantly higher numbers weaned in the milk treatments. Milk consumption was 0.5 l/d until day 14 and rose to 2 l/d/litter at weaning. Total consumption was 3.6kg of milk powder /litter. There were no significant treatment differences in post weaning performance. There was an indication that sow condition was improved in the milk treatments, however, there was no observable effect on subsequent conception rates.

Table 1 The effect of supplementing piglets with milk during lactation on performance

| | No Milk | Milk from farrowing | Milk from day 7 | Sed (max) | sig | |
|-------------------------------------|--------------------|---------------------|---------------------|---------------------|--------------|--------------|
| Number of litters (n) | 38 | 40 | 42 | | | |
| Number post fostering | 11.36 | 11.39 | 11.47 | 0.254 | 0.897 | |
| Total Litter weight post fostering | 16.97 | 16.72 | 16.29 | 0.6143 | 0.529 | |
| Average weight post fostering (kg) | 1.50 | 1.47 | 1.43 | 0.055 | 0.447 | |
| Number died fost - week 1 | 0.62 | 0.59 | 0.78 | 0.212 | 0.590 | |
| Number died/removed Week 1-Weaning | 0.673 ^a | 0.096 ^b | 0.355 ^b | 0.156 | 0.002 | |
| Number weaned | 10.05 ^a | 10.71 ^b | 10.33 ^{ab} | 0.244 | 0.029 | |
| Total litter weight at weaning | 78.82 | 79.11 | 79.45 | 2.925 | 0.976 | |
| Mortality Fostering –Weaning % | 10.69 | 5.84 | 9.58 | 2.091 | 0.054 | |
| DLWG Wean – 29 days post wean (g/d) | 376 | 359 | 364 | 17.9 | 0.702 | |
| Sow weight loss inc. pregnancy (kg) | 30.1 ^a | 23.4 ^b | 27.3 ^{ab} | 2.659 | 0.045 | |
| P2 Loss (mm) | 5.02 | 3.59 | 4.94 | 0.714 | 0.081 | |
| Parity analysis number weaned | Sow (n) | (15) | (15) | (12) | | |
| | Gilt (n) | (23) | (25) | (30) | | |
| | | 9.7 ^a | 10.8 ^b | 10.37 ^{ab} | 0.4202 | 0.029 |

Means with different superscripts (a,b) are significant $P < 0.05$

Conclusions Providing milk ad-lib from farrowing increased numbers weaned by 0.65 pigs per litter. The main reduction in mortality is seen where high numbers born fade through poor nutritional support through lactation. Introduction of milk at day seven is less effective at delivering the benefits. Overall post weaning performance has not been shown to improve using supplementary milk. There is an indication that the milk treatment lightens the demand on the dam. The beneficial effects of using the milk line are greater in sows compared to gilts. Performance variance within litter has not been shown to be affected by milk treatment.

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