

EVALUATION OF AN IMPROVED DESIGN OF FARROWING CRATE, INCORPORATING A FARROWING CRADLE, DESIGNED TO REDUCE THE INCIDENCE OF OVERLYING OF NEWLY BORN PIGLETS

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Farrowing crates should be designed so as to prevent sows flopping directly on their side. The design should oblige the sow to lie down carefully on to her belly first before rolling over to lie on either side. This objective is effected by having a farrowing crate which is fairly narrow at the top but with the lower rails widely spaced to provide adequate room for suckling. A standard farrowing crate which meets these requirements is the 'Camborough' crate, the top bars of which are spaced laterally some 450 mm apart with the bottom bars being spaced laterally some 700 mm apart. When hinged farrowing cradles are fitted to this type of farrowing crate, the sow is obliged to lie down on to her belly before rolling over on to either side. The cradles are hinged and positioned in such a way so as to impose no impediment to the piglets' access to teats at suckling.

On a 100 sow commercial unit weaning at three weeks of age in which a 'Camborough farrowing' crate with farrowing cradles was in use the following performance figures were attained over the 18 month period from September 1980 to February 1982. A total of 363 farrowings resulted in an average of 10.75 livebirths and 9.65 weaned pigs per litter. Total deaths per litter averaged 1.1 (10.2 per cent) while deaths from overlying averaged 0.28 (2.7 per cent). It was noted that almost all losses from overlying took place during the farrowing process and virtually no losses from overlying occurred after this stage.

In other studies, losses from overlying have ranged from 0.5 to 1.0 per litter. Thus, there was an indication that the particular design of farrowing crate in use on this farm was associated with a useful reduction in losses from overlying.

To test this indication, a controlled experiment was conducted on another commercial farm which had installed modified 'Camborough' farrowing crates, and where weaning took place at four weeks of age. Farrowing cradles were fitted to half of these crates and the remainder acted as Controls. Mortality was calculated up to 3 days of age, that is, the stage during which the majority of piglet deaths occur. The experiment was conducted over a ten week period and, during the first three weeks, problems were encountered in fitting the farrowing cradles to the crates. Some of the cradles became partially detached from their fixing and some sows experienced greater difficulty in standing up and in lying down. During this first 3 week period, 26 litters per treatment were evaluated.

For sows with farrowing cradles and controls, livebirths per litter averaged 11.27 and 11.19 respectively, deaths from overlying 5.8 and 4.1 per cent respectively and total deaths 11.6 and 9.9 per cent respectively. Thus, slightly higher piglet mortality was incurred among litters in farrowing crates fitted with cradles although the differences were not statistically significant.

At this stage the causes of the problems experienced with the fitting of farrowing cradles were detected and remedial measures were taken to eliminate such problems during the final seven weeks of the trial. During this period, 57 litters per treatment were evaluated. For sows farrowing with farrowing cradles and controls, livebirths per litter averaged 11.61 and 11.58 respectively, deaths from overlying 2.7 and 5.9 per cent respectively and total deaths 6.2 and 11.1 per cent respectively. The reduction in total piglet deaths and in deaths from overlying was highly significant ( $P < 0.01$ ; chi Square 9.33 and 7.40 respectively).

### Conclusions

1. When fitted carelessly to the farrowing crates, farrowing cradles tended to have a slight negative affect on piglet survival although this was not statistically significant.
2. When due care was taken to ensure careful fitting of farrowing cradles to crates and adjustments made to accommodate sows of different size, farrowing cradles were associated with highly significant reductions in piglet deaths from overlying and in overall mortality.

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### Selected References

- Bille, N., Nielsen, N.C., Larsen, J.L. and Svendsen, J. (1974). Nord. Vet. Med. 26, 294-313.
- English, P.R., Smith, W.J. and MacLean, A. (1977). The Sow: Improving her Efficiency. 311 pages. Farming Press Ltd. Ipswich, England.
- Glastonbury, J.R.W. (1976). Aust. Vet. J. 52: 272-276.
- Nielsen, N.C., Christensen, K., Bille, N. and Larsen, J.L. (1974). Nord. Vet. Med. 26, 137-150.