

THE ESTABLISHMENT OF NEW HERDS BY MEDICATED EARLY WEANING

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Medicated Early Weaning (MEW) was devised to provide a simple and practicable alternative to SPF repopulation for setting up new nucleus breeding herds from existing herds, the new herds possessing a genetic spectrum similar to that of the old herds but being free from some or all of worrying microbial pathogens present in the old herds.

The technique was based on two main assumptions. The first was that in a well-managed closed herd in which precautions are taken against chance contamination from outside (Alexander, 1981) the balance between immunity and infection tends to stabilise and tilt in favour of immunity. Older sows throw off some of the infections endemic in the herd. The second assumption was that although piglets encounter a complex microflora from birth they are not immediately infected with all the organisms to which they are exposed. Infections tend to establish in sequence, the process not reaching completion until well after weaning.

The technique adopted was as follows. Second or subsequent parity sows were removed from a closed, protected, and well-managed herd and were farrowed in isolation in small groups of about 4 to 8 sows. All the sows in a group had been served by boars on the same day and were removed 5 days prior to the anticipated farrowing date. Farrowing was synchronised with prostaglandins. The best piglets were weaned at 5 days of age into isolated early-weaning accommodation. These were to be the foundation stock of a new herd. As an added precaution, the sows, from the time they entered the farrowing unit, and their piglets, from birth until after weaning, were medicated with drugs active against the microbial pathogens which it was hoped to eliminate.

A trial of the technique was conducted in 1978 and reported in full by Alexander et al. (1980). The organisms studied in the trial were *Mycoplasma hyopneumoniae*, *Bordetella bronchiseptica*, and non-pathogenic colonic treponemes. The results were encouraging and the technique was applied in 1979 to set up a new 300-sow nucleus herd. A brief report on the early stages of this procedure was presented to the last IPVS Congress (Alexander et al. 1980) and a fuller report was published later (Alexander et al. 1981).

The herd of origin was a minimal disease unit comprising about 950 sows and followers, which had been set up by primary SPF repopulation in 1962. It had remained relatively free from disease until 1977 when it developed classical enzootic pneumonia (*Mycoplasma hyopneumoniae*). The main aim in adopting the MEW technique was to set up another nucleus of a similar genetic spectrum but free from enzootic pneumonia. The evidence suggests that this aim was achieved.

A total of 1582 MEW piglets were used to populate the new unit in 1979. When they reached slaughter weight, the best were selected as the foundation breeding stock and the remainder were sold to other units or slaughtered. The retained gilts started farrowing in January 1980. By the end of January 1981, 2611 pigs from the new herd had been slaughtered at abattoirs of which about one third were first generation pigs. The rest had been born in the new unit. A total of 699 sets of lungs from these pigs had been examined by veterinarians. Since then the lungs of between 100 and 180 slaughter pigs per month have been examined by a veterinarian routinely. In addition, three new units comprising about 560, 250 and 600 sows respectively have been totally repopulated with stock from the new nucleus herd, and a fourth new herd comprising about 300 sows has been partly repopulated from the new herd and partly from another enzootic-pneumonia-free herd. Also replacement breeding pigs from the new nucleus herd have been introduced into herds thought to be EP-free. The precise number is not available. In none of these procedures or lung examinations has any evidence of EP been found.

The problems encountered initially in the new nucleus herd and in pigs distributed from it were reminiscent of the problems encountered in the early days of SPF repopulation in North America. They were a reflection of rapid growth rates and a deficiency of acquired immunity to the normal complex variety of potential pathogens that exist in conventional herds.

The main problems encountered in the first year were lameness and arthritis, an outbreak of piglet diarrhoea caused by an Abbottstown strain of *E. coli*, an outbreak of exudative epidermitis, and some litters containing stillborn and mummified piglets with antibodies to parvovirus. Many of the early boars from the new nucleus which were introduced into conventional herds suffered severe problems of adaptation and some died. Deaths were attributed to a variety of causes. Arthritis, depression, and wasting also occurred in some of them.

Most of these problems disappeared in the second year as the herd became fully established. Adaptation problems are now minimal. However, an outbreak of Glassers disease caused by *Haemophilus parasuis* occurred in the new nucleus herd and in one of the herds set up from it in 1981. This has now disappeared from both herds.

References: Alexander, T.J.L. Diseases of Swine. Edit. Leman and others. Iowa State Univ. Press. 5th Edit. 1981. Ch. 65: 695-700. Alexander, T.J.L., Thornton, K., Boon, G., Lysons, R.J., Gush, A.F. Vet. Rec. 1980, 106: 114-119. Alexander, T.J.L., Boon, G.I., Lysons, R.J., Nelson, E.P. Proc. IPVS Congress, 1980, Ch. XV: 367. Alexander, T.J.L., Boon, G.I., Thornton, K. 1981. Pig Vet. Soc. Proc. (UK) 1981, 8: 74-81.