

AHDB Knox Box Report

Activity Details			
Company:	Knox and Sons		
Location:	Okehampton, Devon		
Contact:	Richard Knox		
Date:	July 2015		
Information			
<p>Background</p> <p>Average litter sizes in the UK have been increasing steadily for several years. This increase can cause welfare issues where a sow is incapable of nursing her entire litter from birth to weaning and, occasionally, it becomes necessary to provide them with more energy than their mother is capable of providing. This welfare issue can be alleviated by either fostering piglets onto other sows (with either lower litter numbers or better nursing capabilities), or by moving piglets into specialised supplementary rearing systems. Any separation of piglets from the sow prior to normal weaning age is classified as 'segregated early weaning'. This operation must be carried out with veterinary agreement and piglets must not be younger than 21 days of age. Richard Knox and John Dunning developed a supplementary rearing system referred to as the 'Knox Box'. The aim of developing this box was to ensure that less viable and smaller piglets have unlimited access to milk.</p> <p>Setup</p> <p>A large passageway (1.6m wide) runs the length of the building, behind the farrowing pens. This area is not normally used and was, therefore, available for the supplementary rearing system. The boxes are half the size of a farrowing pen at 2.4 x 0.8m each, which means they fit into the passage while still allowing access past them.</p> <p>Requirements of the supplementary rearing system:</p> <ul style="list-style-type: none"> - Hygienic: It is fully slatted so does not require cleaning out within batches and doesn't promote reverse dunging. It is washable, with lids and slides being easily dismantled - Moveable: They are on wheels - Water access: They provide easy access to water via two nipple drinkers - Feed access: They provide easy access to feed via one ad-lib hopper plus another circular feeder - Thermal comfort: The creep area forms half of the total floor space, with a moveable strip curtain to make the area smaller/larger; it is warmed by a heat lamp. <p>Key facts</p> <ul style="list-style-type: none"> - The cost of one box is around £1,800 (QE) - They are used as the first step in a shunt foster - The boxes are kept within existing farrowing accommodation and provide heat, pelleted milk and water - One box is used per week of production (ie one box per 13 sows farrowed). 			

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Use of the boxes

The boxes are used as a last resort when there is either a significant number of supernumerary piglets born in a batch, leading to a lack of available milk from sows, or sows are unable to cope with normal numbers due to poor mothering ability or teat quality/conformation.

Method One

1. The strongest litter of piglets (21 days or older) from a sow which will be receptive to foster piglets, are moved into the supplementary rearing box
2. A litter of 12-day old piglets are moved to the sow whose piglets have just been weaned into the supplementary rearing box
3. A litter of four-day old piglets are moved onto the sow whose 12-day old piglets have been fostered on
4. Supernumerary piglets are moved onto the sow which farrowed four days ago.

All piglets are split suckled and have full stomachs before moving, this ensures adequate levels of colostrum are consumed.

Method Two

On the day of weaning, 10-12 small piglets are weaned into the supplementary rearing box and given first-stage creep feed. They remain in this group for one week and are then weaned with the following week's weaning.

Method one appears to be much more effective at preventing piglets falling behind prior to weaning. An additional drawback of method two is that piglets are a week older when moved to the nursery and, as they come from the previous week's farrowing, they present a potential disease risk which could compromise an all-in all-out system.

Creep feed was initially offered in the supplementary rearing boxes, in this case a small amount of Initiate 4 (ABN) was offered four times a day in two types of feeder. After a few days, a second stage creep feed (Elite, ABN) was fed twice a day (12 hours apart) in ad-lib hoppers.

Piglets ate 850g-1kg between weaning at day 21 and day 28 when they were moved into the nursery with their peers.

The most successful feeding regime trialled was:

- 250g of Initiate 4 (this represents three days on Initiate 4 and costs around 40p/piglet)
- 600-750g of UltraGain (this is four days' feed and it costs between 48-60p/pig)
- There did not seem to be an optimum time for feeding, however, pigs tend to eat together, so providing plenty of feeding space is important.

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Costs of running the supplementary rearing box

- 0.5 man hours per box
- 20 minutes to wash and disinfect each box
- 10 minutes to check and feed six boxes each day
- £0.88 – 1.00/pig (creep feed)
- £1.20/pig (labour)
- £0.40 per pig (250w heat lamp running for eight days).

Performance

Pigs exhibit a growth check during the first couple of days after being placed in the supplementary rearing box, however, it appears that they encourage other piglets to eat creep feed post-weaning. Piglets that were fostered into the 'Knox Box' outperformed the average pig at the end of the nursery and grower stages.

Modifications to the boxes

- Piglets were dunging in different parts of the boxes, so the rubber mats were removed to improve hygiene
- Slurry trays were originally built into the boxes, but these have been taken out for ease of use; the muck now drops straight onto the floor where it is easily washed away
- Curtains are used for the first few days, they are then moved out of the way. It is thought that the curtains probably retain too much heat after that period, as pigs start lying with their heads out of the heated area.