

NADIS disease bulletins are written specifically for farmers, to increase awareness of prevalent conditions and promote disease prevention and control, in order to benefit animal health and welfare. Farmers are advised to discuss their individual farm circumstances with their veterinary surgeon.

Piglets - The Value of Birth Weights

Most producers are aware of the value of attaining high weaning weight. In many studies, it has been shown that, on a herd basis, a 1kg improvement in weaning weights is “worth” a reduction of 9-10 days in age at slaughter (at 95kg liveweight). This has the effect of reducing the amount of feed needed for maintenance by 12-14kg, itself worth £1.50 per pig.

However, we tend to neglect the effect of birth weight on ultimate weaning weight. Some recent reports have suggested that pigs of birth weight below 800g attain a weaning weight at 3 weeks of age 2kg lighter than litter mates above 800g “at birth”. Moreover, the mortality rates in such pigs are at least 50% greater than in the larger animals with pigs below 500g rarely surviving. The effect of a 2kg penalty at weaning is probably even greater than the 3 week extended weaning to sale period that the above figures would suggest, given the difficulties of establishing pigs of 4-5kg at weaning.

The limits that PMWS poses on the ability to cross foster pigs during lactation and back marking of small pigs at weaning creates even greater problems in the management of very diverse sized pigs post weaning.

Therefore, producers should look at the factors which influence birth weight of pigs, both as whole litters and individuals.

The key considerations with respect to the whole litter weight at birth are:-

- 1) The size and age of the gilt at first serve which has an effect on mature body size. Gilts also tend to produce lighter pigs and the smaller/younger the gilt is, the greater will be the penalty. A minimum target of 125kg at 210 days from F₁ hybrid gilt is valid.
- 2) The condition of the sow throughout life with low levels of backfat tending to limit the growth of the litter in utero.
- 3) The genetic base of the pig – both the sow and the boar. Some female lines produce larger pigs than others – producers should consult breeding companies for data. Hybrid terminal sires tend to produce a bigger and more vigorous offspring.
- 4) Health of the sow and the effect that e.g. parasitism will have on energy balance and nutrients available to the developing litter. Reproductive pathogens such as Parvovirus will limit growth.
- 5) Feeding regime. There are 2 significant stages to the gestational feeding regime with respect to the influence on the litter. Placental development occurs in the first half of pregnancy – the time when any shortfall in body condition resulting from the previous lactation needs to be made up. Any limit to intake at this stage will limit placental growth, which is directly related to the ultimate size and weight of the piglet. If there is insufficient placenta, there will be insufficient oxygen and nutrient supply to the piglet, limiting growth. Even assuming that placental growth is

adequate in the first half of pregnancy, nutrient intake in the last 3 weeks of gestation must be adequate to take advantage of the placental supply. The foetus should double in size in these last 3 weeks. If inadequate feed is given in late pregnancy, there will be a tendency for piglets to be born with a well developed skeleton but poorly fleshed i.e. skinny pigs are born. This can differentiate the pigs where placental growth is inadequate early on, which will be physically small.

- 6) Litter size will obviously affect individual piglet size at birth. Variation within a litter is to some extent normal and will increase as the litter size increases. However, it also tends to increase as the sow ages – possibly associated with repeated damage to the wall of the uterus by repeated pregnancies. A balance must be struck between achieving a reasonable lifetime production and the penalty that will be paid for keeping older sows in terms of stillbirth levels, genetic lag and the effects on subsequent growth of undersized pigs at birth.

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