

### III. — SOWS AND PIGLETS FEEDING

#### Feed restriction during late lactation in the sow

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This experiment was made on 36 *Large White* sows after 1st or 2nd farrowing (75 and 25 p. 100 respectively) with the aim of determining the effects of a severe feed restriction (50 p. 100) during the last two weeks of a lactation period of 35 days.

At the moment when the sows were divided into groups (52 groups of 18 sows each) they exhibited comparable performances with respect to weight (gestation net weight + lactation weight variation, *i.e.* + 33 kg, on an average) and number of suckled piglets (8.1 on an average). The diet containing 15.5 p. 100 crude protein and 2 950 kcal digestible energy per kg was offered to the animals either at a level close to *ad libitum* feeding (5 kg/day) or restricted (2.5 kg/day).

Reduction of the feeding level significantly increased the weight loss of the sows during the last two weeks of lactation (20.2 versus 12.3 kg) and mainly during the first week of the experiment. Parallel to that the growth of the piglets decreased : 16 p. 100 decrease of the litter weight from 21 to 35 days in the restricted group and this decrease was also more marked during the first week of the experiment (23 p. 100).

The effects of this feed restriction did not seem to have any repercussion on the performances of the sows during the subsequent reproductive cycle (weight variation of the sows ; number of piglets at farrowing). However, it was observed that the number of animals returning in œstrus after the mating following weaning was larger.

#### Effect of fasting multiparous sows the day of weaning on their reproductive performances

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Fourty *Large White* sows were distributed into 4 groups taking into account the mean weight and parity of the animals in order to study the eventual influence of feed and water starvation on the day of weaning, after a lactation period of 35 days. The treatments involved sup-

pression of water only (group 1), suppression of feed only (group 2), suppression of water and feed (group 3), suppression of feed and administration of 50 g sodium sulphate per animal. The weaning-oestrus interval varied little from one group to another (group 1 : 7.6 days, group 2 : 7.6 days, group 3 : 9.3 days, group 4 : 11.9 days). The weaning-conception interval (12.7-7.6-16.0 and 21.8 days) did not significantly differ because of a large intra-treatment variability (73 to 130 p. 100). However, it was in the group where feed was suppressed and not water on the day of weaning that no return to heat was noted versus 20 to 30 p. 100 in the other groups. But, neither weight gain performances during subsequent gestation nor prolificacy of the animals at next farrowing were affected by either of these treatments.

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### **Influence of the feeding level between weaning and mating on the reproductive performances of multiparous sows**

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This study was made with the aim of searching for eventual effects of overfeeding before mating on the reproductive performances of multiparous sows. 36 adult *Large White* sows were divided into 3 groups according to litter order and weight at weaning. One only feed was offered at three different levels which were kept constant in each group between the day after weaning and the day of mating. The amounts allotted were 1.5, 2.5 and 3.5 kg per day, respectively in groups 1, 2 and 3. During gestation, all sows received 2.5 kg feed per day.

The results did not show any difference between the three groups of animals. The weight variations of the sows were comparable ; however, between weaning and mating the weight loss tended to decrease when the feeding level was enhanced during this period. All the sows parturied, 95 p. 100 having been fertilized at the 1st oestrus. The duration of the weaning-oestrus interval (7.9, 11.4 and 8.3 days, respectively for groups 1, 2 and 3) and the weaning-conception interval (7.9, 13.5 and 9.8 days) was short and did not differ between the groups. This was also the case for the number of piglets born (9.9 on an average) and born alive per litter (9.6 on an average).

According to this study, the relationship between the reproductive performances and the nutritional state of the sows at mating seemed to be low. Enhancement of the feeding level between weaning and mating of multiparous sows did not affect their fertility and did not lead to improvement of their prolificacy even when the latter was poor. Further knowledge of the physiological mechanisms involved should lead to a more accurate determination of the consequences of flushing.

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