



## **Contribution to the definition of an optimum level of energy restriction during gestation**

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## ALIMENTATION FEEDING

### Contribution to the definition of an optimum level of energy restriction during gestation

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Three daily feed restriction levels during gestation were compared : 7.15, 7.95 and 8.75 Mcal D.E., i.e. 2.3 kg feed per day (diet I), 2.5 kg feed per day (diet II) and 2.7 kg feed per day (diet III), the daily crude protein supply being similar. During lactation, all the sows were fed the same 15 p. 100 protein diet. Results recorded until 7 reproductive cycles concerned a total of 360 litters per diet.

*Weight variation* was directly related to the amounts of energy ingested during gestation. The mean live weight of sows at the fourth weaning was 196, 217 and 232 kg. It was always lower with the lowest energy supply since the net weight gain during gestation was significantly lower. Weight balances (mating-weaning) decreased through the reproductive cycles but remained always positive with diets II and III (feed restriction levels 2.5 and 2.7 kg, respectively). With diet I (2.3 kg) they were null from the third cycle in particular for the lightest sows at the first mating.

*Litter size at birth* was little affected by the feed restriction levels during gestation. On the other hand, piglet mortality between birth and weaning was lower with 2.3 kg/day and large losses were observed from the fourth cycle, especially with 2.5 and 2.7 kg/day.

*Growth of piglets* during suckling was not affected by the experimental treatments. The number of sow cullings was higher with diet III (2.7 kg/day), in particular due to : non return to heat and locomotor disorders.

It may be concluded that the increase in the energy supply during gestation improved the sow weight, but reduced the reproductive performance.

A feed restriction level of 8.75 Mcal D.E., i.e. 2.7 kg feed/day is not advisable. It leads to a high sow weight with a larger culling percentage and a reduced piglet production.

A feed restriction level of 7.95 Mcal D.E., i.e. 2.5 kg feed/day is recommended when young animals are to be bred ; it leads to a satisfactory weight gain of sows without reducing the piglet production.

A feed restriction level of 7.15 Mcal D.E., i.e. 2.3 kg feed/day is particularly well adapted to older and heavier gilts mated at the second oestrus (220 days and 136 kg). However, this feed restriction level leads to negative cycle results from the third cycle in the case of light sows (115 kg) used in reproduction. This confirms the results of the first trial.

### Energy metabolism of the lactating sow : preliminary results

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Energy metabolism of the lactating sow was studied in primiparous sows maintained in respiration chambers from farrowing to weaning at 21 days. For each replicate, 2 litter-mates were considered : they received either 16.6 (H) or 11.7 (B) Mcal DE per day, the