

were rediluted with 50 ml of this extender. The insemination was made with a single dose of semen on each day of storage for SCK<sub>7</sub> and on D<sub>0</sub> and D<sub>1</sub> for BL<sub>1</sub> and Guelph. A double dose was used for BL<sub>1</sub> and Guelph on D<sub>2</sub> and for Guelph on D<sub>3</sub> and D<sub>4</sub>. When comparing BL<sub>1</sub> to Guelph the farrowing rate was 63.2 p. 100, 70.5 p. 100 and 60 p. 100 for D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>, respectively, with BL<sub>1</sub> and 69.1 p. 100, 76.2 p. 100, 68.8 p. 100, 81.3 p. 100 and 61.2 p. 100 for D<sub>0</sub>, D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub> and D<sub>4</sub>, respectively, with Guelph. When comparing BL<sub>1</sub> to SCK<sub>7</sub>, the rate of non return at 54 days was 66.7 p. 100, 70.6 p. 100 and 81.2 p. 100, respectively, for D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub> with BL<sub>1</sub> and 81.5 p. 100, 48.2 p. 100, 61.3 p. 100 and 63.2 p. 100 respectively, for D<sub>3</sub>, D<sub>4</sub>, D<sub>5</sub> and D<sub>6</sub> with SCK<sub>7</sub>. In conclusion Guelph's extender as compared to BL<sub>1</sub> increases by one day the preservation length of boar semen while the SCK<sub>7</sub> extender does not maintain the fertilizing ability at a high level after a long preservation.

## Artificial insemination of pigs practised at the farm with semen sent by a production centre. Technical procedure and practical results

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Owing to present insemination techniques in pigs the farmer may use semen sent by semen production centres and practise the interventions at the farm.

This paper analyses the results obtained over a period of three years including 3 932 first inseminations with doses prepared by the SEIA of Rouille. The farrowing rate calculated on the basis of all the data obtained was 71 p. 100 with a prolificacy of 10.1 piglets per litter.

The breed of boars had no influence, whereas other technical and physiological factors changed the results.

The differences observed according to the age of semen showed the importance of semen preservation conditions at the farm and the necessity of using a double dose with J<sub>2</sub> — semen. Two inseminations during the oestrus were required. Onset of oestrus in the sows within the 9 days following weaning led to a better fertility. An adequate technical A.I. training of the farmers should improve the results.

In the best conditions, fertility and prolificacy were close to those obtained after natural mating. Use of boars from an A.I. centre provided good genetic guarantees.

## Use of a very early gestation diagnosis in sow herds

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In a previous work (TERQUI *et al.*, 1979) it was shown that it is possible to establish whether the sow is pregnant or not according to the blood level of a F<sub>2</sub> prostaglandin metabolite (13, 14 - dihydro - 15 ceto PGF<sub>2</sub><sup>α</sup> - « PGF »).

In order to determine whether this diagnosis could be used in practice we tested the two following points relative to the accuracy of the diagnosis:

1) The possible consequences of the mode of conveying the samples (either immediate centrifugation or transport of blood by mail, or centrifugation 24 hr after sampling).

2) The effect of sampling date (in days 13 and 15 after mating in 389 females).

Ninety-nine per cent of the diagnoses made by means of samples sent by mail were identical to those made with immediately centrifuged samples.

The diagnosis accuracy was high whatever the day of sampling. However, the accuracy

on day 13 was better than that obtained on day 15 after mating (94 p. 100 versus 87 p. 100). Besides, the diagnosis of empty sows was well established in two cases out of three. If blood sampling was made on day 14, the diagnosis was accurate in three sows out of four. When sows entered empty the farrowing pen the farmer could have detected it 100 days earlier in 1 sow out of 2 by determining the blood level of PGF.

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### Post weaning growth in piglets

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Attention paid to the post-weaning period of pigs intended for slaughter has been growing the last ten years. The present study was made in 2 groups of farms: group A including 17 farms among which 14 were rearing farms almost all using a conventional management system and group B (9 farms), all rearing-fattening farms among which some practised very well the batch system.

The results mainly concerned the weight and age variability and accordingly piglet growth during the post-weaning period. The performances of group B exceeded those of group A (for example the daily mean gain was 397 g/d against 350). However, the differences between farms remained within the same range (a difference of 100 g between the daily mean gains of the first and the last farms).

In some farms, especially rearing-fattening, but sometimes also rearing farms, the piglets were sold at the same weight, but at highly variable ages.

The population density in the piggeries very often differed from the preconized standards. The difficulty of establishing housing and management systems according to farm capacities and of defining objectively piglet quality by relating weight to age is emphasized.

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## V. — FEEDING

### Total protein requirement of the growing pig

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A further trial was conducted on growing female Large White pigs between 20 and 50 kg live weight to study the minimum requirement for total protein in the conditions of an optimum dietary balance for essential amino acids. The animals were fed a maize — soybean meal diet according to a moderately restricted scale of feeding. The optimum level of balanced protein