(n = 275). Increase in the number of spermatozoa (12.10^6 spz/21A), improved fertility and litter size.

After drying off, a short Regumate treatment (3 days) was applied (starting on the day of weaning). Even in good management conditions, this treatment improved the synchronization of heats obtained after weaning. In primiparous females, whose return to oestrus after drying-off gives rise to most problems a marked improvment was noticed : 72 p. 100 of oestrus between day 5 and 7 post treatment versus 39 p. 100 in the controls. The farrowing rate after artificial insemination in connection with induced heats was comparable to that of the control sows. The dose of progestagen used (20 mg/d/sow) had no unfavourable effect on litter size, but this seemed to be the case with a higher dose.

In vitro study of some factors improving spermatozoa survival during long semen storage

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Two experiments were carried out to determine the effect of the Na^+/K^+ ratio of the extender and the effects of semen collection rhythm and rate of extension upon *in vitro* spermatozoa survival during a long storage. In the first experiment the Na^+/K^+ ratios (50 - 5 - 0.5 - 0.05) were compared after 48 and 120 hours of preservation at + 15 °C. In the second experiment, we compared two spermatozoa concentrations (30 and 120 $\times 10^6$ spz/ml) as well as two rhythms of collection (once or twice a week), after 1, 2, 3, 4 and 5 days of storage at + 15 °C.

An optimum Na^+/K^+ ratio was determined for spermatozoa survival. This ratio, ranging between 0.5 and 5, corresponded to that observed in the fluid of the epididymal caudal region. This optimum was more marked after 5 than after 2 days of preservation.

A low dilution (120×10^6 spz./ml) as well as the rhythm of semen collection twice a week favoured the spermatozoa survival during a long storage.

Effect of the extender, rate of extension and seminal plasma or the fertility of sows after a long semen storage

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Two experiments were made to test the efficiency of several factors in maintaining the fertilizing ability of spermatozoa after 5 days of preservation. Guelph and BL_1 extenders were compared in the first experiment. In the second one (factorial 2 × 2) the effects of two rates of extension (30 and 120×10^6 spermatozoa/ml) and of two fractions of ejaculates (total fraction and rich fraction), were studied. A total of 963 and 1 071 sows, respectively were inseminated once during oestrus in the first and in the second experiment.