

status of the genital tract of the animals. Owing to this method, it was possible to determine objectively whether the decision of the farmer was justified by a real unproductiveness of the sow.

For the realization of such an inquiry in practice it was necessary to collect before slaughtering a great number of data about the farms where the sows were coming from (for each sow: registration of the cause of culling and of the former reproductive performance, herd management). Each genital tract, correctly identified, was examined after slaughtering.

Forty-three percent of the sows had been culled for reasons independent of reproduction and 13.8 p. 100 because of their age (total: 593 observations). When the culling was related to reproduction we observed a large difference between the reason given by the farmer and the status of the genital tract in two cases: barren sow without return to heat before culling and no onset of heat after drying off. The state of the ovaries corresponded to the cause of culling only in 36-37 p. 100 of the examinations.

In the first case (non pregnant sow, no return to heat before culling) 40 sows out of 77 controlled were cyclic and 6 were pregnant. In the second case (no heat after drying off) 7 sows out of 27 were really in anoestrus. These contradictions can be explained in different ways: some sows might have had silent heats (but it seems to be rare) or might have been in heat between the decision of culling and the moment of slaughtering, or the method by the farmer for the detection of heat was not satisfactory. This last hypothesis is being verified.

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### Very early gestation diagnosis in the sow: determination of the $F_{2x}$ prostaglandin level on days 14 and 15 after artificial insemination

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As early as the 14th day after insemination it is possible to determine by means of a radio-immuno assay of « P.G.F. » (13,14 dihydro 15 ceto  $F_{2x}$  prostaglandin) in the peripheral blood whether the sow is pregnant or not. The « PGF » levels are high in cyclic sows, change little in pregnant sows and remain low during pregnancy. The variations of this metabolite are parallel to those of  $F_{2x}$  prostaglandin in the uterine venous blood and can therefore be used as a basis for a gestation diagnosis.

Blood samplings were made on days 14 and 15 in sows expected to be pregnant (104) in three herds. In pregnant sows the accuracy of the diagnosis varied between 81 and 95 p. 100 depending on herds. On the contrary in non pregnant females the accuracy was low in one herd (45 p. 100 as compared to the two other herds (75 and 91 p. 100, respectively).

The efficiency of this diagnosis, defined in days gained over non pregnant sows, is close to that obtained after the passage of the boar twice a day in the herd and corresponds to a fertility of 60 p. 100. Moreover, taking into account the time necessary for carrying out the assay, the result of the blood sampling at G<sub>14</sub> could be given to the breeder from the 18th day, i.e., before the passage of the boar.

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