



# Seasonal variation in the litter size in relation with variations in the ovulation rate and the embryo mortality in the sow

Françoise Martinat-Botte, P. Dando, J. Gautier, M. Terqui

## ► To cite this version:

Françoise Martinat-Botte, P. Dando, J. Gautier, M. Terqui. Seasonal variation in the litter size in relation with variations in the ovulation rate and the embryo mortality in the sow. *Annales de zootechnie*, 1981, 30 (3), pp.383-383. <hal-00888115>

**HAL Id: hal-00888115**

**<https://hal.science/hal-00888115v1>**

Submitted on 11 May 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

**Seasonal variation in the litter size  
in relation with variations in the ovulation rate  
and the embryo mortality in the sow**

Françoise MARTINAT-BOTTE \*, P. DANDO \*\*, J. GAUTIER \*\*\*  
et M. TERQUI \*\*\*

\* I.T.P., 149, rue de Bercy, F 75595 Paris Cedex 12

\*\* I.N.R.A., Station de Génétique animale, Domaine de Galle, F 18800 Avord

\*\*\* I.N.R.A., Station de Physiologie de la Reproduction, F 37380 Monnaie

A variation in the litter size, ovulation rate and embryo mortality was noticed when analysing two sources of data.

The mean number of piglets born was maximum for litters conceived in August, September, November and minimum for those conceived in December and January. On an average a difference of one piglet was noticed between the two extreme months, i.e., November, January. Piglets were all issued from dams in fourth gestation ( $N = 10\,981$ ), where prolificacy reaches a plateau and varies little.

Variation in the ovulation rate during the year in sows slaughtered at 30 days post coitum in third and fourth gestation ( $N = 415$ ) was parallel to that of the number of embryos and that of the litter size. The maximum corresponded to fertilization in August, September, October, November and the minimum to fertilization in December, January and February. On an average, a difference of two ovulations was noticed between February-October.

The embryo mortality varied according to the ovulation rate; beyond 15 ovulations it was equal to 4 embryos or more. The analysis according to the month of mating showed that the embryo losses were maximum in March and minimum in November for the two groups studied (14-15 and 16-17 ovulations).

**Economic and technical consequences of sow culling**

J. DAGORN \*, Françoise DUFOUR \* et J. HAUTCOLAS \*\*

\* I.T.P., Service Conduite d'Elevage,  
149, rue de Bercy, F 75595 Paris Cedex 12

\*\* I.N.R.A., Laboratoire d'Economie rurale de Grignon,  
F 78850 Thiverval-Grignon

Have sows to be culled after the first, the second or the third return to heat? To solve this problem a simulatory assay was made on a herd of 70 sows kept in batches of seven each for 4 fertilization levels.

The mean number of sows to be mated was 19, 16, 14 and 12 sows for a fertilization level of 60, 70, 80 and 90 p. 100, respectively.

When the number of tolerated returns to heat increased from 0 to 2, the number of gilts to introduce into the batches decreased by 50 to 75 p. 100.

For a given fertilization level, the maximum of pigs produced with a minimum amount of feed (the best profit margin) was always obtained with two tolerated returns to heat.