Technical advices to the farmers based
on the analysis of on-the-farm sow records

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The technical advices based on the analysis of on-the-farm sow records represent a useful tool by means of which the farmer may examine the following parameters in collaboration with the experts :

1. Checking of herd performances,
2. Comparison with reference groups,
3. Determination of the « weak points » and searching for the causes.

Thus, this tool is not used with the aim of forecasting results, but it supplies objective data by means of which it is possible to improve animal production results and to determine technical objectives at the individual level or at the level of a group.

The results are represented by three types of criteria :

1. *Structural criteria :*
   — mean age of the sows at first farrowing,
   — percentage of first litters,
   — percentage of last litters and culling age ;

2. *Numerical criteria :*
   — litter size at birth,
   — litter size at weaning,
   — percentage of losses ;

3. *Timing criteria :*
   — age at first farrowing,
   — age at weaning,
   — weaning-conception interval,
   — last weaning-culling interval.

Each criterion is defined by its average value and standard deviation. The technical advices are based on the analysis of on-the-farm sow records and the question is to know which criterion is leading most rapidly to the most efficient results. The determination of this criterion can be made on the basis of three principles :

   — the factors must be considered independently
   — the possible margin of progress must be determined for each criterion
   — the priorities must be defined.

The determination of the factors involved in the establishment of a production « diagnosis » can be made on the basis of the following four main analyses :

1. Age at first farrowing (it must be located between 330 and 380 days) ;
2. Structure and demography of the herd ;
3. Prolificacy (piglets born, lost and weaned) ;
4. Fertility.

Fertility disturbances might be disguised by a systematic elimination of sows which return into heat. It is therefore necessary to simultaneously observe the weaning-conception interval and the percentage of last litters.

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Factors of productivity in sow herds

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On the basis of 451 sow production units located in all regions of France and for the most part members of pig producer associations, a statistical analysis was made of the annual average values obtained in each herd with respect to the main technical aspects of sow productivity.

Analysis of the significant correlation coefficients between the 21 variables determined, reveals the existence of two distinct groups :

a) *Characters including results and techniques*
(see the figure)

b) *Structural Characters*
(see the figure)

The correlations are low between these two groups except for the rate of first litters and the age of the herd, both related together, as well as to data variables and to structure variables.

Eight independant factors, accounting for 80 p. 100 of the total variance were identified by a factorial analysis in main components :

— rearing conditions, with a major incidence on piglet losses,
— prolificacy,
— herd structure,
— unproductive periods,
— herd size,
— growth,
— renewal,
— weaning.

There are many factors of heterogeneity and therefore each one only represents a   slight significant part of the total variation.