

REPRODUCTIVE FAILURE - IDENTIFYING THE PROBLEM

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The failure to optimise reproductive efficiency in the pig breeding herd is a major source of economic loss and many producers are not aware of this loss. It is essential therefore that reproductive failure is recognised early and a method is used that clarifies the point of this failure and identifies the problem. This is carried out in two parts, record analysis and clinical examination of the herd.

Record Analysis. Without accurate records it is impossible to investigate reproductive failure and the principles and total approach are shown in Fig I.

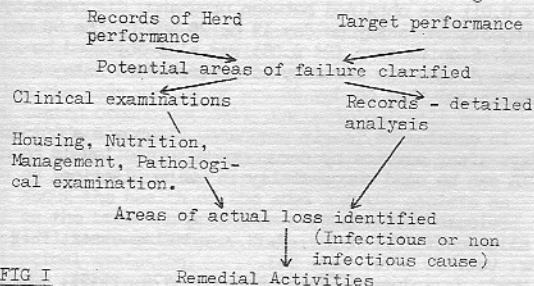


FIG I

The areas where foetal losses occur can be divided into five groups:

- i Oestrus and follicular production. Records and history would indicate low litter size or ovarian malfunction.
- ii Fertilisation. Records would indicate a high return rate on an 18-22 day normal cycle.
- iii Implantation. The period between groups ii and iii is crucial and represents embryo mortality and would be shown by variable litter size and/or abnormal returns often 23-37 days post service.
- iv Maturation. In this period reproductive failure is manifest by individual or total embryo death followed by complete reabsorption or mummification. Total failure may also be seen as an abortion.
- v Farrowing. This final phase of loss takes into account piglet deaths that take place during the period of actual farrowing.

The grouping of "piglet" loss in this way enables the investigator to match the available herd data to one or more groups so that further clinical and pathological examinations will clarify the epidemiology.

The type of data required is not comprehensive but its retrieval and presentation can create considerable problems on the farm. In the authors experience, detailed individual sow and litter cards are essential and if designed correctly will hold information for up to 8 parities thus allowing retrospective analysis either manually or by computer. Group and herd examinations can be made at any time and in retrospect relative to the problem. Table I shows suggested targets for efficient reproduction but these may require adjustments due to local circumstances.

Reproduction Target Levels and Boar/Sow Data - Table I

Weaning to service interval	5 - 7 days
Farrowing rate (% farrow to service)	85 - 89
Normal Repeat Matings %	5 - 7
Abnormal Repeat Matings %	2 - 4
Abortions % to Matings	1 - 2
Sows not in pig (NIP) %	1 - 2
Metritis %	1
Pigs born alive	10.4-10.6
Pigs born dead %	5 - 7
Mummified %	0.5- 1.0
Litter size variation % *	15 -18
Boar/Sow ratio	1 :20
Boars average age	24 months
Date/no; times served	

Sow mated - identification	Variable 12-24 hrs
Interval between matings	1 (good) 2 or 3
Quality of Mating	9.8-10.8
Nos born alive	15 -18
Litter size Variation % *	
Date + incident eg sickness treatment	

Sows:

Date weaned. Parity
Date served/reserved
Boar used - Mating quality
Pregnancy check
Date of incidents eg death
Abortions, discharges, lameness
Date farrowed
No; pigs alive/dead/mummified + size
Low viable piglets

* % litters < 9 born (alive + stillborn)

For most of the parameters a range is given and the extreme defines the point at which investigations and remedial actions are required. Whilst Table I will indicate problem areas when the actual herd performance is set against it, it does not answer the questions why? Further record analysis is required but this needs detailed information. Table I also lists some of the data necessary for epidemiological analysis relative to the problem. For example, if litter size is too small 8-10 specific examinations will be necessary to help in determining not only the area of embryo loss but also that part of the production and the possible causes. To confirm this and decide upon remedial activities requires further information which is gained from the clinical examination.

Clinical Investigations

These consist of two parts, a clinical examination of the herd as a whole and pathological investigations and tests. Examinations of the herd is carried out in a logical way starting with the sows and boars in the mating area followed by the dry sows and finally the farrowing quarters. Attention is paid to stress, in particular in the first 15 days post service to ensure low embryonic mortality. The effectiveness of nutrition in the environment and any evidence of disease are noted and further investigations may be warranted. Stocking densities and house hygiene play an important role in the balance achieved between host and organisms. Pathological tests include slaughter examinations of the reproductive tract at various stages supplemented by bacteriology and histology. Cervical and vaginal examinations can be of value in the live animal using a vaginoscope.

A final assessment of the record data clinical and pathological information will indicate whether the reproductive failure is of an infectious or non-infectious origin and where appropriate action can be taken.

Conclusion

Accurate records are essential to identify reproductive failure and decide if it is infectious or non-infectious. These records include the service programme and the farrowing rate and its losses. The significance of the repeat matings and their intervals are an important feature in the epidemiology, together with aspects of abortion and embryo reabsorption. A clinical examination of the herd is necessary to assist in the interpretation of the record findings.

Selected references: MUIRHEAD, M.R.; Vet. Rec. 1978, 102:228. MUIRHEAD, M.R.; Vet. Rec. 1980, 106:170. HUGHES, P., and VARLEY, M.; Reproduction in the Pig. Butterworths., London. WEATHALL, A.B.; 1979. Reproductive Disorders in Pigs. Commonwealth Agricultural Bureaux.