

POST MORTEM EXAMINATION OF THE GENITAL ORGANS OF CULLING SOWS FROM
ONE LARGE HERD WITH RELATION TO FERTILITY DATA.

S. EINARSSON*, N. LUNDEHEIM, K. MARTINSSON, N. PERSSON AND I. PERSSON.

DEPT. OF OBST. AND GYN. AND DEPT. OF ANIM. BREED. AND GENET. SWED. UNIV. OF AGRIC. SCI. UPPSALA, SWEDEN.
SWED. PIG HEALTH ORG. K.B.S. KRISTIANSTAD, SWEDEN. SWED. LAB. SERV. (SVELAB), KRISTIANSTAD, SWEDEN.

About 40% of the breeding sows are annually eliminated from the herds in pig industry countries. Reproductive failure is considered the most important cause of culling (Jones, 1967; Einarsson and Settergren, 1974; Svendsen et al, 1975; Karlberg, 1981). The object of the present investigation was to make a post mortem examination of the genital organs from all sows culled from one 1000-sow unit during a 2-year period.

All sows were of pure Swedish Landrace breed. Hand-mating was practised. The lactation period comprised 5 weeks. The sows were individually tattooed to make the identity clear at slaughter. Fertility data were recorded together with the clinical diagnosis for culling. A morphological and bacteriological examination of the genital organs was performed within one hour after slaughter. Samples for bacteriological examination and specimens for histo-pathological examination were collected from both uterine horns in all sows. The hitherto analyzed material comprises 444 sows, representing the first 12 months.

The age distribution among the culled sows is presented in Table 1. The sows are divided into 3 groups. Group I: 175 sows, slaughtered during the 1st (12), 2nd (67) or 3rd (4) week post partum. Group II: 175 sows, slaughtered at weaning (day 0 or day 1). Group III: 183 sows, slaughtered ≥ 7 days after weaning. The majority of the sows belonging to groups I and II were culled because of small litter size, poor survival rate of the piglets or leg problems (Table 2). In group III dominated reproductive failure as cause of culling. None of the sows not farrowing at expected time were pregnant. Seventy-six % of the anoestrous sows were primiparous. Two of three sows (62%), culled because of anoestrus, had passed one or more heat periods (Table 3). The reason must be either insufficient heat detection or weak external heat symptoms.

Resumption of ovarian activity had taken place in 38% of sows belonging to group I, compared to 3% of sows belonging to group II (Table 3). The difference must be ascribed to the small number of piglets nursed by the majority of the former sows (mean litter size 4-6 in subgroups). A high incidence of multiple ovarian cysts was found in sows nursing few piglets as well as in sows culled because of infertility.

The bacteriological examination revealed a wide variety of organisms in more than 50% of the sows (Table 4). Bacteria were recovered more frequently from sows culled during early lactation (group I) than at the end of 5 week's lactation (group II). This means that bacteria, to some extent, are eliminated from the uterus during involution. Endometritis was demonstrated in 27% of all sows culled because of reproductive failure, the majority being of slight degree (Table 5).

Selected references: Einarsson, S. and Settergren, I.: Nord. Vet.-Med. 1974, 26: 576; Jones, J. E. T.: Br. Vet. J. 1967, 124: 45; Karlberg, K.: Ph. D. Thesis, 1981 Veterinary College, Oslo; Svendsen, J., Nielsen, N. C., Bille, N. and Riising, H.-J.: Nord. Vet.-Med. 1975, 27: 604.

Table 1. Age distribution of culled sows

| No. of litters produced | 1 | 2 | 3 | 4 | 5 | 6 | ≥ 7 |
|-------------------------|----|----|---|---|---|---|----------|
| % of culled sows | 36 | 20 | 9 | 9 | 6 | 4 | 16 |

Table 2. Causes of culling

| Cause of culling | Per cent culled within groups | | |
|------------------------------|-------------------------------|----|-----|
| | I | II | III |
| Anoestrus | - | - | 24 |
| Repeat breeding | - | - | 12 |
| Non pregnant | - | - | 17 |
| Abortion | - | - | 3 |
| Poor litter/ small litter | 64 | 38 | 3 |
| Poor mother | 7 | 1 | - |
| Lamenes | 23 | 50 | 38 |
| Old age | - | - | 1 |
| Miscellaneous | 6 | 4 | 2 |

Table 3. The ovarian morphology in culled sows.

| Ovarian morphology | Per cent within groups | | | | |
|--------------------|------------------------|----|----------------|------------------|--------------|
| | I | II | An- oestrus | Repeat breed. | Non preg. |
| Follicles only | 69 | 97 | 38 | - | 23 |
| Corpora lutea | 13 | 2 | 45 | 86 | 40 |
| Multiple cysts | 18 | 1 | 17 | 14 | 37 |

Table 4. Recovery of microorganisms from the uterine horns of culled sows.

| Presence of bacterial growth | Per cent within groups | | | | | |
|------------------------------|------------------------|----|-----|----------------|------------------|--------------|
| | I | II | III | An- oestrus | Repeat breed. | Non preg. |
| None | 29 | 49 | 39 | 39 | 38 | 40 |
| Sparee | 42 | 35 | 39 | 37 | 48 | 40 |
| Moderate | 29 | 16 | 22 | 24 | 14 | 20 |

Table 5. Presence of endometritis in sows culled because of reproductive failure (92 sows).

| No. of sows | Degree of endometritis | | |
|-------------|------------------------|--------|----------|
| | None | Slight | Moderate |
| % | 67 | 20 | 5 |
| % | 73 | 22 | 5 |