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Splayleg is a "clinical" disease of newborn pigs characterized by a temporary functional disorder where there is a reduced ability to adduct the limbs (Ward & Bradley, 1980). The disease has been reported in several countries, and it appears to be particularly important within certain improved breeds, such as the Landrace and Large White (Ward, 1978). The cause is not known, but it appears to be a multifactorial disease with hereditary and illdefined environmental components. The purpose of this paper is to describe some of the management and husbandry factors which may contribute to the disease.

All studies were made over a 4-year period in one closed, pedigree Swedish Landrace sow herd, with about 90 sows in production. Approximately 30% of the sows and most of the gilts were boar inseminated, while the rest were inseminated artificially. During gestation, one group of sows was closely confined (fixed) in crates, and one group was loose in 2 different types of pens. At farrowing, the sows were distributed among 4 types of farrowing pens. Type I and II were crates, and Type III was a pen, all with concrete floors and straw bedding (Svendsen & Andréasson, 1980). Type IV was a crate with perforated metal floors or plastic coated woven wire floors. All sows in the various systems were equally distributed as to age and boar used for service, and equally treated as to feeding and general husbandry procedures (Svendsen & Andréasson, 1980). The results were tested by the student's t-test, χ^2 -test and covariance analysis.

Two variants of functional disorder with reduced ability to adduct the limbs could be clinically distinguished in the herd:

A. The splayleg pigs displayed signs of disease within the first 12 h of life. Of 13 carefully studied splayleg pigs from different litters, 5 appeared within the first 2 h of birth, 2 between the 2nd and 3rd h, 2 between the 4th and 5th h, 1 between the 5th and 6th h, 2 between the 7th and 8th h, and one 11 h after birth. Four of these pigs were born among the first third of the born pigs, 5 were born in the middle and 4 were born in the last third of the litters. Usually, only the hindlegs were affected and the pigs appeared to be otherwise vital. When they attempted to stand, their hindlegs extended sideways. Typically, the hindlegs were bilaterally and equally extended, but in a few cases, both hindlegs extended to one side, or one leg extended backwards. The disease appeared most severe within the first 24-36 h after birth. Less severely affected pigs were able to stand unsteadily with the hindlegs straddled. Often they would attempt to place as much as possible of the body weight on the forelegs when standing. Although these pigs had difficulty in moving, they were still strong enough to compete for a teat and obtain a suckle. In the herd, 6.3% of the liveborn pigs from 707 litters displayed signs of splayleg (Table 1). In more than 50% of the affected litters, more than one affected pig occurred. Covariance analysis (Table 2) showed that the number of splayleg pigs in a litter was significantly influenced by the boar (varied from 0.8% - 11.7% in different boars), and by gestation length (litters with 113 days or shorter gestation periods had significantly higher incidence of splayleg). It was not influenced by litter size, parturition length, sow parity or by the housing system for dry or farrowing sows. The type of flooring in the pen did not affect the incidence. Mortality was 1.9% of liveborn pigs. Most of the pigs died within 48-72 h after birth, primarily due to trauma (55%) and starvation (40%). Significantly more males than females were born with and succumbed to the disease (Table 1). At post mortem, a pattern of usually bilateral abrasions and injuries on the accessory digits, hocks and tail was observed.

Table 1. Splayleg, splayweak and weak/undersized pigs: Morbidity and mortality figures

	Live-born	Splay-leg	Splay-weak	Weak/unders.
Animals at birth	7172	449	111	383
- Morbidity (%)		6.3	1.5	5.3
- Mortality (%)		1.9	1.4	2.8
% males	52.3	68.9	55.4	53.5
% females	47.7	31.3	44.6	46.5
- Lethality (%)		31.0	92.8	53.0

Table 2. Splayleg, splayweak and weak/undersized pigs: Influence of paternal, maternal and housing factors (covariance analysis, 707 litters)

	Splay-leg (%)	Splay-weak (%)	Weak/unders. (%)
Litter size	n.s.	x	xxx
Parity of sow	n.s.	n.s.	xxx
Boar	xxx	n.s.	n.s.
Gestation length	x	n.s.	n.s.
Housing dry sows	n.s.	n.s.	n.s.
" farrowing	n.s.	n.s.	n.s.

Subcutaneous oedema along the hindlegs was a common feature.

B. The splayweak pigs showed signs of splayleg right after birth and also appeared to be rather weak. Usually both the forelegs and hindlegs were extended sideways, and the legs were bilaterally and equally affected. The pigs condition rapidly deteriorated. The recumbent pig frequently lay with the hindlegs extended along the body, and the forelegs spread sideways. 1.5% of the pigs were born with this condition (Table 1). In 72% of the affected litters only one pig per litter occurred. Covariance analysis showed that the number of splayweak pigs was not influenced by boar, gestation length, sow parity, or by housing system. It was, however, slightly but significantly influenced by litter size. The number of splayweak pigs was significantly higher in litters with splayleg pigs than in litters without. More than 90% of the affected pigs died, corresponding to a mortality of 1.4% (Table 1). Most pigs died within the first 48 h of birth, primarily due to starvation, but 20% were traumatized. There was an equal sex distribution (Table 1). At post mortem a rather typical pattern of injuries and abrasions could be seen on the accessory digits, hocks, sternum, axillary and mandible. The musculature usually was somewhat moist, although these pigs often appeared to be more "starved" than would be expected of "normal" starved pigs of the same age.

It is concluded that at least 2 clinical manifestations of splayleg may be distinguished, the vital splayleg pig, and the splayleg and weak - splayweak pig. The splayleg condition appears to be a sexlinked, hereditary congenital disease with a significantly higher incidence in litters with shorter gestation lengths. The incidence of splayweak pigs apparently was not influenced by gestation length, boar or sex; it is a congenital disease diagnosed more frequently in litters with splayleg pigs. Whilst the occurrence of weak/undersized pigs increased with the age of the sow and with litter size, no influence of parity on the occurrence of splayweak pigs was seen, and only a slight increase in splayweak pigs with litter size was noticed.

References: Svendsen, J. & Andréasson, B.: Proceedings, IPVS, Copenhagen 1980, p. 83. Ward, P.S.: The Vet. Bull. 1978, 48:279. Ward, P.S. & Bradley, R.: J. Comp. Path. 1980, 90:421.