

Deaths of piglets significantly affect returns from pig enterprise and therefore have critical implications for farm operators in the adoption and management of the pig enterprise.

Pomery (1960) reported that survival of piglets within the first three days depended on the critical birthweight (which is the average birth weight of the litter) for that period. It was found that 83.0% deaths occurred in 400-899g birthweight class; 33.8% deaths in the 900-1399g birth weight class and finally 18.5% deaths in the 1400-1990g birthweight class. Sharpe (1966) also found in a breeding herd of Large White pigs that all causes of death, except gastro-enteritis, were influenced by birthweight. Menzies-Kitchin (1937) Fahmy and Bernard (1971) and Bereskin *et al.* (1973) among numerous workers reported that mortality rate increases in large litter size (15 and over) and very low litter size (less than 4).

Pomery (1960) suggested that with the piglet mortality, one of the important causes of death was the cold weather, however Sharpe (1966) found no significant mortality differences in hot and cold period mortality.

A study was undertaken to analyse the causes, incidence and the pattern of mortality in pigs of pre-weaning age at Agricultural Research Station (A.R.S.) Legon, over a 6-year period (1972-1977) both years inclusive, with a view of establishing the extent and nature of the diseases and mortality pattern on the farm.

The sows farrowed in permanent concrete floored farrowing pens and remained there for 8 weeks. Records on a total of 1524 piglets in 160 litters were available for investigation.

The piglets were not creep fed nor were they provided with supplementary heating. Piglets received 100mg Iron dextran preparation at 2 days and 2 weeks of age. Male pigs not intended for breeding were castrated at 6 weeks. Records on only litters meeting the arbitrary standard of at least one live pig at farrowing, no serious parturition complications, serious illness, injury or disease of the sow prior to weaning her litter were included. Simple regression analysis was performed by Computer on the number of pigs that died with respect to the number that were farrowed for the entire litter sizes and deaths. Proportions of deaths to births in litter size groupings and sex mortality percentages were also calculated. By means of Chi-square test, and F-test, significance of differences were established where possible.

RESULTS AND DISCUSSIONS

The most significant single cause of mortality of pre-weaned pigs was found to be due to overlay (34.2%). This finding agrees with those of Gracey's (1960) Pomery (1960). Okyere Dankwa (1976) also reported 16.73% as death due to overlay on the same farm A.R.S., Legon over a ten-year period (1960-1971) and this figure represented the largest single cause of death. There was a progressive decrease in death due to overlay up till the fourth week when there was virtually no deaths. Enteritis was the second highest cause of death (21.4%). The use of intensive systems of pig husbandry has been observed to increase the incidence of infections in pigs crowded together. Mortality due enteritis in this study could be attributed to the wet and humid nature of the environment in May-June which incidentally is the period that many of the piglets were farrowed.

With respect to period of the year, the high incidence of mortality occurred in June-July. 19.8% mortality was recorded in July followed by 18.5% mortality in June. February, March and December deaths accounted for 9.5% while October had the lowest recorded mortality rate of 0.8%.

The high mortality observed in June-July could be due to the heavy rains since the major rainy season occurs between May and July. Farrowing percentage was also high (14.2%) around May and June and since there was no artificial source of heat, the piglets were pre-disposed to rushing. Chi-square calculations established that the period of farrowing was significantly related to mortality.

Mortality at birth was found to increase from 2-4 litter size group and dropped in the 8-10 litter size group and then increased in the 11-13, 14-16 litter size groups. Data confirmed earlier findings of Menzies-Kitchin (1937), who observed no advantage in obtaining very large litters as this was discounted by high pre-weaning mortality. Fahmy and Bernard (1971) and Fahmy *et al.* (1978) observed a general tendency for all the pigs in small litters to be lost, and Parker *et al.* (1980) also found that with increasing litter size there was a decrease in average birthweight which subsequently led to increase mortality in a litter. Besides being born smaller at birth, the piglets in large litters normally farrowed during the last third after the start of farrowing were disadvantaged with respect to their earlier born litter mates for suckling a teat to obtain enough immunoglobulin-rich colostrum.

Therefore the earlier born piglets normally have substantial survival advantage.

This therefore would call for concentrated management efforts such as individual feeding, supplemental heat and vigilance at farrowing to enhance high probability for survival.

CONCLUSIONS:

Overlay is a major cause of death of piglets especially during the first three days. Survival rate of piglets rose significantly ($P < 0.05$) with higher birthweights. There was also significant difference in the month and year of farrowing and the number of pigs which died.

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