GROWTH OF YORKSHIRE SUCKLING PIGS

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Abstract: The birthweights and daily liveweights for 87 male and 99 female pigs reared under drylot conditions were obtained over a 3-week period and used to construct a growth curve for the very young male and female pig. Analysis of variance was used to test litter and sex main effects and the litter x sex interaction effect on liveweight. The daily standard deviations of the 186 pig sample were calculated and are presented in graphic form. No significant difference between the growth of male and female pigs of this young age were found. The average birth and first-, second- and third-week liveweights and standard deviations were 1.1±.12, 2.0±.27, 3.3±.48 and 5.0±.74 kg., respectively, for the pooled male and female observations. Analysis of variance of the data indicated significant differences in growth due to litter effects for all of the 21 days of the experiment, but there was generally no significant difference due to sex and no sex x litter interaction.

GROWTH OF YORKSHIRE SUCKLING PIGS

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ALTHOUGH growth is commonly used as a criterion for evaluating performance, available data on normal growth curves for swine are limited. Many of the curves which are available, both those for the suckling period (Mumford et al., 1923; McKenzie, 1928; Forshaw et al., 1953) and those for the period of birth to market weight (Ittner and Hughes, 1938; Nordskog, Comstock and Winters, 1944), were established many years ago. Other growth curves were established under Canadian conditions of rearing bacon-type hogs (Crampton, 1939; Ashton and Crampton, 1943; Cameron et al., 1945). Recent growth curves for Canadian Yorkshire, La- combe, Landrace and crossbred pigs for the period of birth to weaning (Bell, 1964) suggest a faster rate of growth for pigs than was indicated by earlier workers. Work by French researchers (Aumaitre, Legault and Salmon-Legagneur, 1966) appears to be the most recent and comprehensive report on the growth pattern of the very young pig.

There appear to be no recent growth curves for pigs during the period from birth to 21 days of age established under present-day conditions in the United States. The older growth curves generally were for hogs reared under conditions different from those presently found in the United States, were based on weekly or biweekly liveweights and frequently did not present any indication of the amount of sample variation. The present study was, therefore, undertaken to establish a more detailed and complete growth curve for the very young pig based on daily weighings and containing a measure of the sample variation.

Experimental Procedure

Birthweights and daily liveweights were obtained for 87 male and 99 female Yorkshire pigs from 18 different litters in the Cornell University research herd. The pigs were farrowed during September and were housed with their dams in concrete-floored indoor pens with access to a concrete-floored outdoor runway. The sows were confined to farrowing crates for 3 days following parturition during which time they were removed once daily to receive feed and water. On the fourth day after parturition the farrowing crates were removed from the pens and the sows were fed and watered while they remained in the pen. The feed was provided ad libitum from a metal trough and consisted of a 75% corn, 10% soybean meal, 1% fish meal and 10% alfalfa meal diet fortified with vitamins, minerals, salt, and containing 13% protein. Water was available ad libitum in a cast iron trough to both the sow and the pigs. A creep feed was made available ad libitum to the pigs when they were 2 weeks of age. The male pigs were castrated when they were approximately 2 weeks old.

The average liveweights and standard deviations for days 0 through 21 were calculated and analysis of variance techniques (Steel and Torrie, 1960) were used to test litter and sex main effects and the litter x sex interaction effect on liveweight. The statistical arrangement for the experiment was a 2 x 2 factorial in which sex effects were considered fixed and litter effects considered random.

Results and Discussion

Average birthweights and daily liveweights of male and female pigs for the 3-week experimental period are presented graphically in figure 1. The average daily liveweights of the male and female pigs did not differ significantly (P<.05) during the 21 days of the experiment. The average weight of the 186 pigs was 1.1, 2.0, 3.3 and 5.0 kg. at birth, 1 week, 2 weeks and 3 weeks of age, respectively. The total gain over the 3-week period as well as the pattern of growth was generally similar to that reported by Ashton and Crampton (1943), McKenzie (1928) and Forshaw et al. (1953), although the third-week gain obtained in the present study tended to be slightly greater that that re-
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Summary

The birthweights and daily liveweights for 87 male and 99 female pigs reared under drylot conditions were obtained over a 3-week period and used to construct a growth curve for the very young male and female pig. Analysis of variance was used to test sex main effects and the litter x sex interaction effect on liveweight. The daily standard deviations of the 186 pig sample were calculated and are presented in graphic form. No significant difference between the growth of male and female pigs of this young age were found. The average birth and first-, second- and third-week liveweights and standard deviations were 1.1±.12, 2.0±.27, 3.3±.48 and 5.0±.74 kg., respectively, for the pooled male and female observations. Analysis of variance of the data indicated significant differences in growth due to litter effects for all of the 21 days of the experiment, but there was generally no significant difference due to sex and no sex x litter interaction.

Literature Cited