

INTERRELATIONS BETWEEN SOME REPRODUCTIVE TRAITS IN SWINE

M. H. FAHMY and C. S. BERNARD

Canada Agriculture, Research Station, Lennoxville, Quebec.

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ABSTRACT

The associations between 15 preweaning traits in pigs were studied to determine which had the most important effects on litter weights at birth and weaning. The traits were litter size at birth and weaning, number born alive, percentage survival to birth and weaning, pig and litter weights at birth and weaning, daily gain from birth to weaning, gestation length, number of teats, weights of dam at farrowing and at weaning, and the change in dam weight during lactation. Of the 105 correlations, 66 were statistically significant, though many

were markedly low. Litter weights at birth and weaning were significantly and relatively highly correlated with most of the other traits, whereas number of teats was correlated only with survival rates at birth and weaning and pig birth weight. The results showed that the importance of litter size was almost twice that of pig weight in determining litter weights at birth and weaning. The results in general indicated that most of the economically important traits related to swine reproductivity are favorably associated.

RESUME

On a fait des recherches sur l'association qui existe entre 15 caractéristiques reliées à la reproductivité de la truie et les relations entre ces facteurs, qui déterminent le poids des portées à la naissance et au sevrage. Au nombre des caractéristiques étudiées mentionnons: le nombre de porcelets par portée, la viabilité, le poids des porcelets et de la portée à la naissance et au sevrage, la longueur de gestation, le nombre de tétines et le poids des mères à la mise bas et au sevrage. Soixante-six des 105 corrélations furent significatives. Les poids des portées à la naissance et au

sevrage fut significativement corrélatif avec la plupart des autres caractéristiques, tandis que le nombre de tétines fut corrélatif seulement avec la viabilité à la naissance et au sevrage et le poids des porcelets à la naissance. Les résultats font voir que l'importance du nombre de porcelets d'une portée est presque deux fois aussi grande que celle du poids des porcelets dans la détermination du poids des portées à la naissance et au sevrage. Selon nos résultats la plupart des caractères d'importance économiques ayant trait à la reproductivité du porc s'associent favorablement.

INTRODUCTION

The ability of a sow to produce thrifty pigs at birth, referred to as prolificacy, and to raise these pigs to weaning, referred to as maternal or nursing ability, are the main characters determining its productivity. Some other characters, such as gestation length, number of teats, and weights of dam at farrowing and weaning, may also have marked and direct effects on productivity. Among the characters considered individually, litter weight at weaning is usually regarded as the best estimate of productivity since it is a function of all preweaning effects.

The purpose of the present study was to investigate the association among 15 reproductive characters influencing preweaning performance in swine.

MATERIALS AND METHODS

Litter records of 704 Yorkshire gilts farrowed during a period of 10 years (1957-1966) were used. The animals were replaced every year and represented three lines resulting from selection of boars for feed efficiency and for carcass score. Breeding season started in November of each year and lasted for approximately 4 weeks. During gestation the gilts were maintained in an open shed with plenty of straw bedding, allowed free access to water and self fed. Pregnant sow ration consisted of 60% concentrate mixture (37.6% each of oats and barley, 10.8% each of wheat bran and commercial protein supplement, and 3.2% mineral mixture) and 40% alfalfa hay. The sows were transferred to individual farrowing pens 109 days