Suppasit Plangkao 2007: Genetic Parameters for Reproductive Traits of Sows. Master of Science (Agriculture), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Associate Professor Neramit Sookmanee, Ph.D. 131 pages.

The 742 litters of Duroc, 1,309 litters of Large White and 2,448 litters of Landrace were obtained from Tubkwang Research Station, Kasetsart University (TRS) during 1999 to 2004. Genetic parameters of reproductive traits; number of piglets born in total (NPBT), number of piglets born alive (NPBA), number of piglets born dead (NPBD), birth weight (BW), litter weight (LW), number of piglets weaned (NPW), weaning weight (WW) and weaning to estrus interval (WEI) were estimated by using animal model and restricted maximum likelihood (REML) procedures in multivariate analyses. Low heritabilities were found for NPBT, NPBA, NPBD, LW, NPW and WEI (ranging from 0.03 to 0.21) and moderate for BW and WW (ranging from 0.24 to 0.44) in all breeds. Maternal effects were near zero for all traits. The repeatabilities for NPBT, NPBA, NPBD, LW, NPW and WEI were low (ranging from 0.04 to 0.18) and moderate for BW and WW (ranging from 0.15 to 0.44). Phenotypic and genotypic correlations between NPBT and NPBA, NPBT and NPBD, NPBT and LW, NPBT and NPW, NPBA and LW, NPBA and NPW, LW and BW, LW and NPW, BW and WW, WW and WEI were positive and ranging from 0.04 to 0.98. Selection on NPBT would give an undesirable increase in NPBD. The negative phenotypic and genotypic correlations for NPBT and BW, NPBT and WW, NPBA and BW, NPBV and WW, NPBD and BW, NPBD and WW, NPBD and WEI, BW and NPW, NPW and WW ranged between -0.38 to 0.00. Phenotypic and genotypic between NPBT and WEI, NPBA and WEI, LW and WEI, BW and WEI, NPW and WEI varied around zero. Phenotypic correlation between NPBA and NPBD, NPBD and LW, NPBD and NPW, LW and WW were negative (ranging from -0.14 to -0.06) whereas genetic correlations were positive (ranging from 0.20 to 0.77). From this study had shown that traits heritable were low to moderate and differences of models had small affect to the parameters. In conclusion, the new generation of boar and sows had to be introduced for the improvement of reproductive traits at TRS.

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