

Effects of days of raising TLRI Black Pig No. 1 lactating sows in farrowing crate on the welfare of sows and survival rate of piglets ⁽¹⁾

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Abstract

Conventional farrowing crate is a controversial issue from the viewpoint of animal production and welfare in swine industry. The purpose of this study was to evaluate the effect of crating length on the welfare of sows and survival rate of piglets. Twenty four multi-parous TLRI Black Pig No. 1 (TBP) sows were allocated to four treatments through a completely random design, where sows and piglets stayed in conventional farrowing crate throughout the experiment as the control group (C). Sows and their piglets were moved to concrete floor nursing pen on day 4, 7 or 10 until weaning on day 28 postpartum as treatment F, S and T, respectively. On day 14 postpartum, the respiratory rate, body temperature and salivary cortisol concentration were measured and while behaviors of sows were filmed for 24 hours. The results showed that there was no difference on the body weight, backfat thickness loss, daily feed intake, and the physiological parameters, in terms of respiratory rate and rectal temperature of sows amongst treatments. Sows raised in nursing pens tended to have higher salivary cortisol concentration ($P = 0.06$). With regards to survival, from birth to day 7 of age, the survival rate of group F was lower ($P < 0.05$) than groups C, S and T. After day 7 of age, the survival rate was not different amongst treatments. Behavioral data indicated that sows raised in farrowing crate tended to have higher proportion of laterally lying ($P < 0.10$), and higher proportion of lying and sitting posture and less standing posture than the sows raised in nursing pen ($P < 0.05$). In summary, farrowing crate could protect neonate, however, after the 7th day postpartum, sows and piglets could be moved and raised in enlarged nursing pen to improve welfare of sows without detriment of piglets.

Key words: Animal welfare, Survival rate, TLRI Black Pig No. 1, Sows..

Introduction

The conventional farrowing crate is developed in the 1960s (Edwards and Fraser, 1997), which is a dilemma of swine industry. The space of farrowing crate is just narrow for sows to stand up for feeding, drinking, urination, and defecation, but not allowing the sow to turn around. The original function of farrowing crate is to limit the activity in terms of posture changing of sows during parturition and nursing period later on, in which protect the neonatal piglets from crush by sows when they are changing the posture. In terms of survival of suckling piglets, record has shown the farrowing crate achieved tremendous success (Baxter *et al.*, 2011) to decrease the high levels of piglet mortality.

Despite of the protective function, however, the use of farrowing crates evokes concern by animal welfare groups due to severely limit the normal behaviour expression of sows (Jensen, 1988), and the implication that confinement crate leads to chronic stress of sows and hence reduces the welfare (Jarvis *et al.*, 2006). Enlarged nursing pen during lactation period may improve the sow welfare. However, survival of piglet may be put at risk as the absence of crate confinement allows more sow

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