

Assessing behavioural and physiological implications of intermittent suckling on primiparous sows and their litters

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The objective of the current study was to determine the implications of intermittent suckling (IS) on primiparous sows and their litters. Behavioural observations, udder scores, return to nursing and salivary cortisol concentrations were measured. An intermittent suckling protocol was applied to 22 primiparous sows and their litters. At three weeks of age piglets were separated for eight hours a day, for seven days prior to weaning. Control litters had the sow continuously present until weaning. Video data was collected; one hour before and after separation and one hour before and after rejoining on days one, three and six. Cortisol samples were collected at 06:00 h on day one and then at 12:00 h on day two, four and seven. Udder scoring was carried out at the start of separation, day two of separation and at weaning. Return to suckling bouts were recorded on days one, three and six for two hours after rejoining.

The study found that during periods of separation the IS piglets spent significantly more time resting in comparison to control litters (postsep $86.9 \pm 1.6\%$ vs $76.5 \pm 2.3\%$; prejoin $79.1 \pm 2.0\%$ vs $64.2 \pm 2.2\%$; $P < 0.05$). Once rejoined to the sow, piglets activity significantly increased ($P < 0.05$), but then gradually declined over the one hour postjoin period. On day two, postsep cortisol concentrations for IS piglets were significantly greater than base levels seen pre-separation on day one ($P < 0.05$). However, day four and seven cortisol concentrations were similar to the base concentration, suggesting that piglets had adapted to the separation. Greater activity around the udder during the rejoining period, determined by increased time spend massaging the udder and nursing ($P < 0.05$) and a greater numbers of suckling bouts in IS litters ($P < 0.05$), did not lead to increased physical damage of the udder. Sow behavior was altered during the rejoining period, with IS sows spending more time standing ($26.2 \pm 2.8\%$ vs $8.5 \pm 2.2\%$; $P < 0.05$). However, cortisol concentrations for sows were not significantly different between control and IS treatments ($P = 0.34$).

Therefore, based on the minimal changes in behavior and cortisol concentrations of piglets and sows during separation, eight hours separation over seven days does not appear to adversely affect piglet or sow welfare.