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Colostrum supply of suckling piglets and *Salmonella* seroprevalence in piglet rearing - Is there an relationship?

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Introduction

Salmonella are still a problem in pork production. Increasing litter sizes and more newborn piglets with low birth weights at the same time make an adequate colostrum supply more difficult. This study investigated the hypothesis, that modern piglet producing farms with a high farrowing rate and an increased *Salmonella* prevalence in piglet rearing show a more unfavourable colostrum supply in suckling piglets.

Methods

An association of 250 northern German piglet producing farms has been organizing a voluntary biannual health-status-monitoring on piglets (25 kg BW) since years. The monitoring includes an ELISA for *Salmonella* antibodies. On basis of these data 12 *Salmonella*-conspicuous and 12 *Salmonella*-inconspicuous farms were selected. These were similar in terms of hygiene, herd size and performance. Each farm was visited once 24-48 hours after the main farrowing day. On each farm 4 litters were sampled and 2 light-weight, 2 medium-weight and 2 heavy-weight piglets per litter were weighed and a blood

sample was taken. The blood samples were tested for the colostrum supply by means of the Ig-Immunocrit-method. Furthermore, *Salmonella* optical density (OD)-values were tested by Herdcheck® *Salmonella* ELISA (IDEXX Laboratories, Hoofddorp, The Netherlands). Differences between both groups depending on body weight were statistically analysed by using the t-test (level of significance: p < 0.05).

Results

This study provides preliminary evidence that when comparing *Salmonella*-conspicuous farms and *Salmonella*-inconspicuous farms, colostrum supply could be a critical factor to be considered. The fact that there was no difference in the body weight of piglets in both groups suggests that there may be differences in colostrum management. Further studies have to investigate the reasons for the differences in the colostrum supply of light weigh piglets and the impact on the *Salmonella* seroprevalence at the time of slaughter.

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Table 1:

		body weight [kg]		immunocrit		<i>Salmonella</i> - OD	
		<i>Salmonella</i> -inconspicuous farms	<i>Salmonella</i> -conspicuous farms	<i>Salmonella</i> -inconspicuous farms	<i>Salmonella</i> -conspicuous farms	<i>Salmonella</i> -inconspicuous farms	<i>Salmonella</i> -conspicuous farms
BW category	n	88	96	88	96	88	96
light		1.05 (±0.25)	1.05 (±0.29)	0.100 ^a (±0.04)	0.087 ^b (±0.04)	35.85 (± 38.66)	36.18 (± 39.31)
medium		1.38 (±0.25)	1.36 (±0.27)	0.107 (±0.03)	0.098 (±0.03)	38.71 (± 40.12)	37.59 (± 37.51)
heavy		1.69 (±0.27)	1.78 (±0.31)	0.114 (±0.03)	0.111 (±0.03)	43.65 (± 41.88)	41.77 (± 38.55)

^{a, b} averages differ significantly within a row (p < 0.05)