

The Prevention of “Tail Biting” by Sodium Chloride Supply in Pigs –The Optimal Supplying Ways and Its Physiological Mechanisms–

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Summary

Tail-biting is one of the great problem in the pig production. Previously, we had reported that the supply of 1.8% sodium chloride (NaCl) solution relieved the damages on the tails of piglets (supported by the grant No.0815). In this study, we have examined the effects of the fodder containing higher NaCl contents or the commercial salt blocks for cattle on the damages caused by tail-biting in piglets. In addition, we have examined the salt contents of the urine and feces of piglets that given NaCl, because usually feces and urine of livestock are used for manure.

Twenty two litters of piglets, each litter consisted of 8-13 piglets, were used. They were divided into six experimental treatments; no treatments (controls, 4 litters), presented with 1.8% NaCl solution (Sol., 4), presented with the fodder containing double (Dou., 4) or triple (Tri., 2) higher NaCl contents than the standard requirement, presented with a commercial salt block “A” made in the “ α company” (SBA, 4) or salt block “B” made in the “ β company” (SBB, 4). Each test was conducted from one day before the treatment onset and had lasted for three weeks. Every week, the conditions of the tails were recorded and the levels of damages were scored from 0 (no damage) to 6 (more than 1/3 of the tail was bitten off). The urine and feces of piglets were collected on the last day of each test.

The tail damage in control piglets were significantly ($P<0.05$) increased day by day in one litter, but there were no remarkable changes in other 3 litters. In one litter of piglets in Sol., the tail damage in the last day of the test was significantly ($P<0.1$) lower than that in the first day, whereas there were no remarkable changes in other three litters. Similarly to our previous study, NaCl solution relieved the damage on the tails. There were no remarkable changes in the damages on the tails in three litters in Dou., but it was significantly increased on the last day in one litter ($P<0.05$). Furthermore, the damage-score in two litters in Tri. were significantly increased on the last day ($P<0.05$). These results indicate that the fodder with high NaCl contents may not relief, may even increase, the damages on the tails. There were no remarkable changes in the tail damage in all of four litters in SBA, whereas those were significantly increased in all of four litters in SBB ($P<0.05$). There were differences in the components of the minor minerals among salt block A and B, thus this difference may be one of the cause of the difference in the effects on the damage on the tails.

The salt contents in the urine and feces were increased by the every NaCl treatment, and in some treatments, those were significantly higher ($P<0.1$) than that in the controls. This result indicates that we have to pay attention to the salt contents of the manure made from urine and feces presented with NaCl.