Effects of early-life changes on health, welfare and performances of pigs in a commercial farm

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Weaning is one of the most critical periods during pigs' life. Indeed, piglets are separated from their mothers, moved to a novel environment and mixed with unfamiliar congeners. These events can lead to conflicts between piglets until the establishment of a new hierarchy. As a consequence, weaning is often characterized by growth slowdown and increased susceptibility to infectious diseases. In order to reduce the deleterious effects of a standard conventional weaning, we proposed an alternative management of juveniles, which associated birth in free-farrowing pens, absence of tail-docking, early socialization of piglets and maintenance of established social groups. We analysed the effects of this alternative practice on pigs' health, welfare and performances. We followed 75 pigs, in the standard group, and 80, in the alternative one, from birth to slaughter. Frequent visits allowed us to detect clinical signs as well as body and tail lesions. Blood and bristle samples were regularly collected to evaluate stress response, inflammation level and immune competence. As expected, just before weaning, we observed a higher number of lesions and a lower average daily gain (ADG) in piglets that were pre-socialized. After weaning, these piglets exhibited a greater number of circulating leucocytes, a higher ADG and less body injuries, which may result from a better preparation to the weaning transition. Unfortunately, cannibalism occurred mainly in the alternative group which obviously altered animal welfare. It was associated with higher concentrations of hair cortisol at day 36 and acute-phase proteins at day 36 and 66. If the alternative management of juveniles did not prevent cannibalism in undocked pigs, most of the parameters analysed during the post-weaning period and at slaughter were not significantly different between the two groups. Our results emphasize the importance of field studies to assess the transposability of alternative practices and their real relevance to pigs' health and welfare.