Effets d'une supplémentation alimentaire *peri-partum* en fructo-oligosaccharides à chaînes courtes sur le statut immunitaire et les performances de croissance des porcelets

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Effects of *peri-partum* dietary short-chain fructo-oligosaccharide supplementation on immune status and growth performance of piglets

Peri-partum nutrition is essential for immune development and survival of new-born piglets. A dietary short-chain fructo-oligosaccharides (**scFOS**) supplementation of sows or piglets could, by stimulating growth of beneficial bacteria, modulate immune activity of gut and optimise performances of piglets. Thus, effects of scFOS supplementation of sows and piglets on immune quality of colostrum, on immune activity of innate or adaptative system and on performances of piglets have been investigated. Twenty-six sows in 3 replicates received a control diet or a diet supplemented with scFOS (respectively 10 g/d of maltodextrin or scFOS) for the last 4 weeks of gestation and during lactation. Serum Ig concentrations of sows and immune quality of the colostrum and milk were determined. Performances of piglets were recorded. Twenty-six piglets were slaughtered on d21. Cellular immune activity was evaluated after cell culture. After weaning, piglets of each litter were divided into two groups to receive the control diet or the scFOS diet (1.2 g/d of maltodextrin or scFOS) from d29 to d77. On d35 and 56, piglets were vaccinated against *influenza*. Piglet serum concentrations of Ig were determined at d7 and 21 after birth and of specific IgA and IgG anti-flu at d56 and 77.

scFOS maternal supplementation increased immune quality of colostrum, intestinal immune maturation of suckling piglets and growth of weaned piglets. Supplementation of scFOS in weaned piglets improved the response to a vaccine challenge. Finally, supplementation of scFOS contributes to secure diets, ensuring a development of the immune system for optimising health and performances.