

58. Impact of naked oats and bioactive supplements on growth and intestinal mucosa parameters of weaned pigletsW. Joseph^a, L. Lo Verso^a, F. Amira Slim^a, L. Galiot^b, F. Guay^{a,*}^aDépartement des sciences animales, Université Laval, Québec G1V 0A6, Canada^bCentre de développement du porc du Québec, Canada

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The objective of this project was to determine the impact of naked oats (NO) and bioactive supplements (yeast extract (YE) and medium-chain fatty acids (MCFA)) on piglet growth and their intestinal mucosa (IM) characteristics. Forty-eight weaned piglets (21 days, 6.44 kg) were placed two per pen (24 pens) and fed one of eight experimental treatments in a $2 \times 2 \times 2$ factorial design with two experimental diets, supplemented or not with YE (0.1%) and MCFA (0.1%). The control diet was formulated from cereals and soya bean meal. In the NO diet, 35% of maize-soya bean meal was replaced with NO. After weaning, piglets were fed for 7 days and then euthanized to collect IM from the ileum. The addition of NO tended to increase the average daily gain ($P=0.059$) and increased the weight at 7 days ($P<0.05$). NO also tended to increase daily consumption, but only in the absence of YE ($NO \times YE, P=0.077$). In IM, the marker of cell division (proliferating cell nuclear antigen) was increased by NO ($P<0.05$), while the marker of apoptosis (caspase-3) was increased by YE ($P<0.05$). NO also reduced chemokine CXCL10 ($P<0.05$). Malondialdehyde (a marker of oxidative stress) was reduced by YE, but only in the absence of MCFA ($YE \times MCFA, P<0.05$). Finally, YE and MCFA reduced the concentration of occludin (tight junction protein, $P<0.05$). No interaction $NO \times YE \times MCFA$ was observed. The results of this study showed a positive effect of NO on growth and ileal IM in piglets. YE and MCFA modified certain IM parameters without having a significant effect on growth

doi: [10.1016/j.anscip.2023.06.060](https://doi.org/10.1016/j.anscip.2023.06.060)**59. Salty vs. sugary food industry leftovers in post-weaning piglets: Effects on gut microbiota and intestinal volatile fatty acid production**M. Tretola^{a,b,*}, S. Mazzoleni^a, P. Lin^{a,b}, L. Ferrari^a, A. Luciano^a, N. Rovere^a, F. Fumagalli^a, M. Ottoboni^a, L. Pinotti^a^aUniversity of Milan, 26900 Lodi, Italy^bAgroscope, 1725 Posieux, Switzerland

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Awareness of the need to improve the sustainability of livestock production by reducing the loss of natural resources has increased significantly. This study investigated effects of two categories of food industry leftovers (i.e. “former foodstuff” (FFPs)) on pig gut microbiota and intestinal volatile fatty acid (VFA) production. Thirty-six female post-weaning piglets (28 days old, Large White x Landrace, 6.5 ± 1.1 kg) were separated into three groups and fed a conventional diet (CTR) or a diet in which cereals were partially replaced (30% w/w) by sugary confectionery products (FFPs-C) or salty bakery products (FFPs-B), respectively. After 42 days of dietary treatments, faeces were collected from the rectal ampulla, snap-frozen, and used for next-generation sequencing to analyse the composition and alpha and beta diversity indexes of the microbial population. The concentration of VFAs in the intestinal content collected at the slaughterhouse was also analysed. Neither the FFPs-C or FFPs-B diets influenced the abundance or biodiversity indexes of the microbial community. The experimental diets had no impact on the production of VFAs in the intestine. In contrast, the FFPs-C and FFPs-B diets slightly influenced the gut microbiota. FFPs could thus be used as a promising alternative to traditional ingredients in pig diets; however, additional analyses are needed to further investigate the presence of potentially pathogenic bacteria. Effects of using such ingredients during the fattening period on other markers of gut health and on product quality also need to be investigated

doi: [10.1016/j.anscip.2023.06.061](https://doi.org/10.1016/j.anscip.2023.06.061)**60. A beta-mannanase enzyme used “On Top” improves the zootechnical performances and digestive health of post-weaning piglets under field conditions**V. Burlot^{*}, B. Fily

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An enzyme with β -mannanase activity used in poultry and pig production, can suppress the antinutritional and pro-inflammatory effects of β -mannans. Because an energy value is applied to β -mannanase in the feed matrix, the objective of this study was to demonstrate its “On Top” efficacy in piglets from 28–47 days of age under field conditions. The enzyme was used “On Top” in the prestarter phases of the piglets. A total of 431 piglets in three successive batches were included. The comparison was performed contemporarily, with or without β -