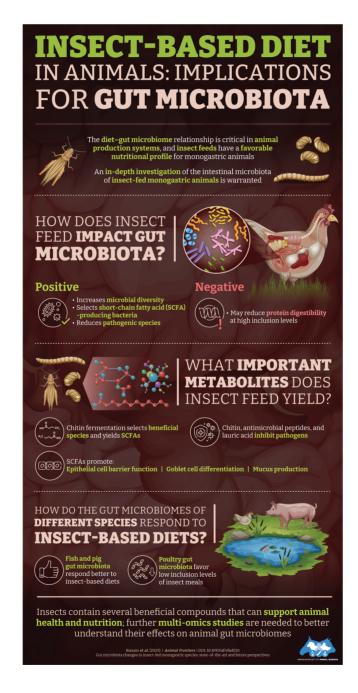
Infographic

Insect-based diet in animals: implications for gut microbiota



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (https://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com https://doi.org/10.1093/af/vfad056

Identification of novel protein sources for use in animal feeds may allow for more traditional protein sources to be used for human consumption. Insects contain essential amino acids and bioactive components that may positively impact the gut microbiota and overall health of animals (Smola et al., 2023; Bovera et al, 2016). Hermetia illucens (Black solider fly) and Tenebrio molitor (Mealworm) are among the insect options for inclusion in animal feeds. In particular, in pigs and fish, insect-based feeds increase the number and diversity of microbial species in the gut and promote the expansion of beneficial bacteria. The presence of pathogens was also decreased, likely through antimicrobial properties of insect-based feeds. In contrast to pigs

and fish, poultry may only tolerate feeds with lower inclusion rates of insect-based products.

References

Smola, M. A., P. M. Oba, P. L. Utterback, L. Sanchez-Sanchez, C. M. Parsons, and K. S. Swanson. 2023. Amino acid digestibility and protein quality of mealworm-based ingredients using the precision-fed cecectomized rooster assay. J Anim Sci 101:skad012. doi:10.1093/jas/skad012

Bovera, F., R. Loponte, S. Marono, G. Piccolo, G. Parisi, V. Iaconisi, L. Gasco, and A. Nizza. 2016. Use of *Tenebrio molitor* larvae meal as protein source in broiler diet: Effect on growth performance, nutrient digestibility, and carcass and meat traits. J Anim Sci. 94:639–647. doi:10.2527/jas.2015-9201