

Personal perspectives for the future of prebiotics (science only, don't ask me about economy)

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Abstract

The prebiotic field is constantly expanding in terms of new studies, applications and research fora. However, we still have quite a narrow range of proven prebiotics (as evidenced by well controlled in vivo studies), target microbial genera and health aspects.

This presentation will give a very personal and biased view of how prebiotic science could possible move forward in the next few years. At the time of writing this abstract, the following examples spring to mind:

- 1) Traditional prebiotics for the gut usually fortify bifidobacteria or lactobacilli who predominantly generate acetate and lactate. However, other organic acids are positive for gut derived health. Therefore new prebiotics could be made through comparative genomics, protein expression and enzymic synthesis that specifically stimulate genera such as *Roseburia* spp. *Faecalibacterium* spp., *Eubacterium* spp. *Akkermansia* spp. *Propionibacterium* spp.
- 2) Synbiotics of the above.
- 3) Influences on farmyard health and e.g. reduction of methane and diversion of hydrogen as an anaerobic electron flow to acetate thereby improving animal welfare, carcass quality and the like but also influencing climate gas generation.
- 4) Influences on pet health and faecal odour e.g. the same thing with hydrogen but diverting away from H₂S.
- 5) Wastestream bioprocessing.
- 6) Prebiotics in new ecosystems that they are not hitherto applied towards.

- 7) Then there is the boring stuff like more studies, bigger trials, new techniques etc. (by the way my most frustrating few words in science are “more studies are needed to confirm...” blah blah).
- 8) Whatever other nonsense enters my warped mind between now (April 7) and June 15th 2022.

In conclusion, this talk will have no data nor references nor validation of the views given. It will be wholly subjective. You are very welcome to disagree, argue and add but surely we can be a bit more left fielded with prebiotics moving forward?