Prebiotic effects of novel nondigestible carbohydrates on bacterial community in challenge of *S.* Typhimurium in piglets

Tran T.H.T.[1,*], Blaise Y. [1], Bindelle J.[1], Thewis A.[1], Boudry C.[1]

[1] Animal Science Unit , Gembloux Agro-Bio Tech, University of Liege, Belgium

[*] Wallonie-Bruxelles International, Brussels, Belgium

Introduction

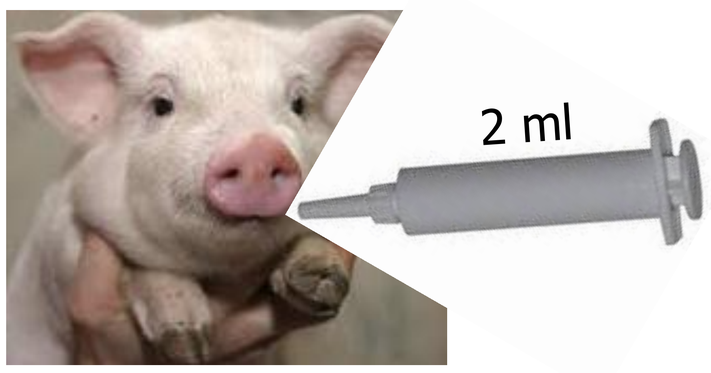
Enteric pathogens are a significant cause of the intestinal bacterial imbalance. Prebiotics are more and more used to tight against these pathogens by favouring the beneficial microbiota.

Objective: evaluate the effect of isomaltooligosaccharides (IMO) and pectioligosaccharides (POS) on the bacterial populations of piglets challenged with *Salmonella* Typhimurium

Materials & Methods

64 weaned pigs
4 treatments (2 pens / treatment):
- IMO
- POS
- Inulin
- Saccharose (control).

↓ After 11 days of adaptation



2 Trojan pigs / pen

S. Typhimurium
10^9 CFU/ml

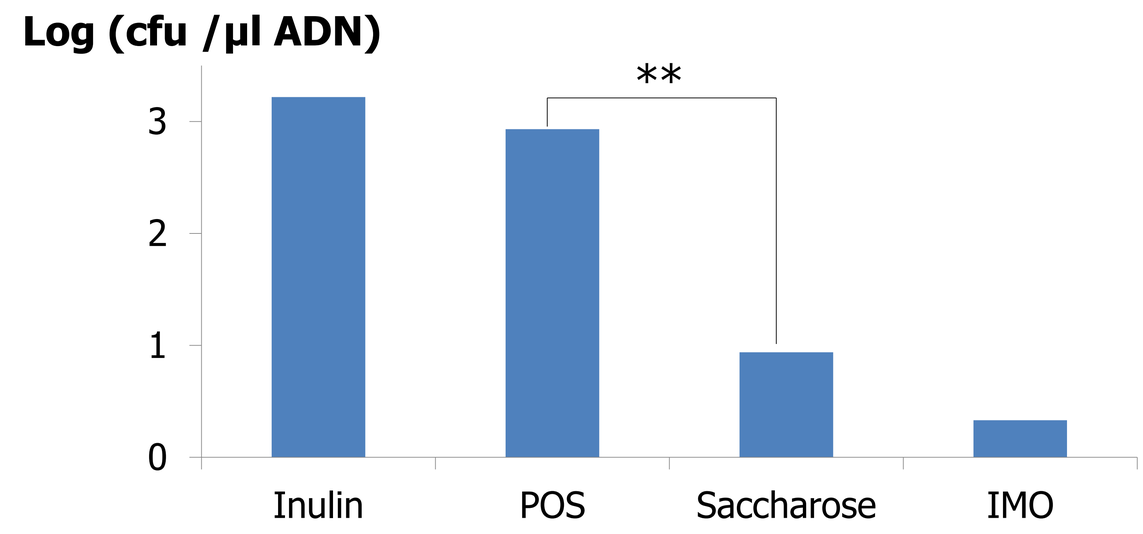
↓ On days 18, 19 and 20

Intestinal digesta samples of 2 Trojan and 2 Contact pigs per pen

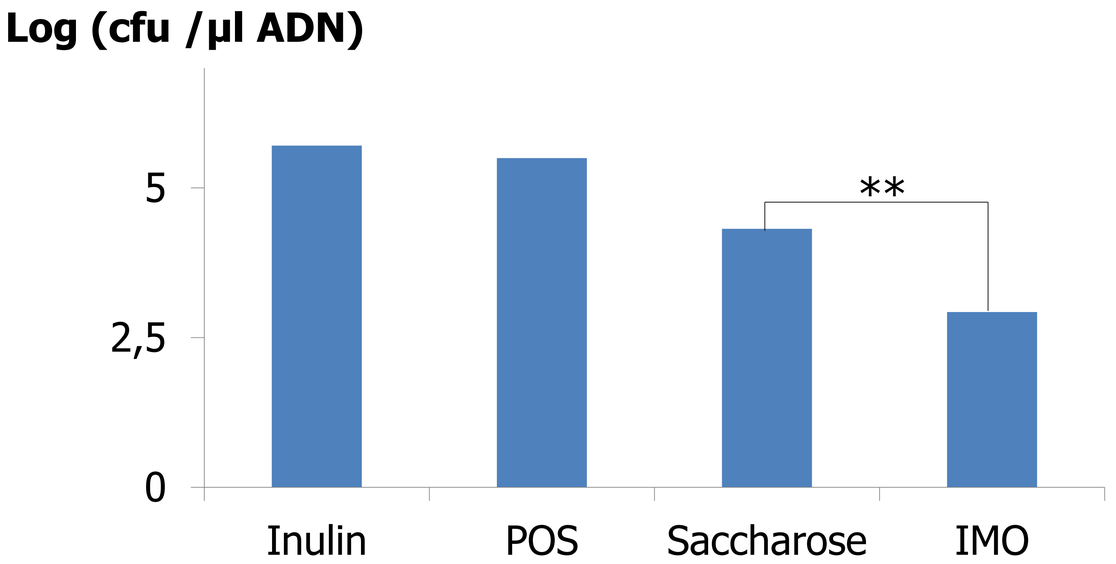
↓

Microbiota quantification by qPCR
- *Lactobacillus*
- *Bifidobacterium*
- *Clostridium* Cluster I
- *Bacteroides*

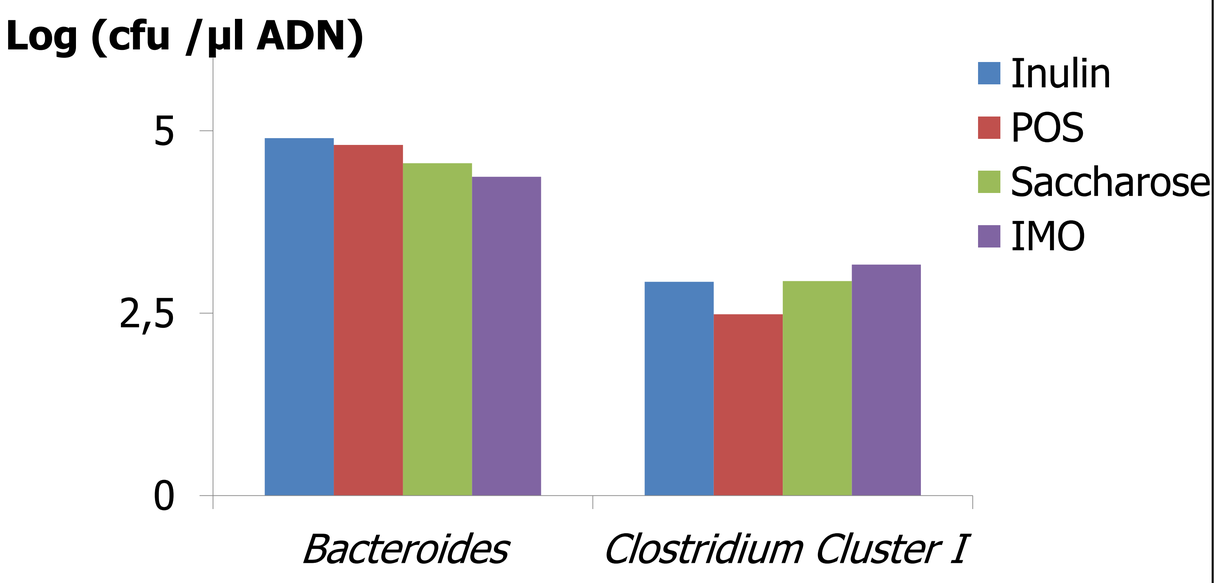
Results



Bifidobacterium **in the ileum of Trojan pigs**



Lactobacillus **in the ileum of Trojan pigs**



Bacteroides and Clostridium **Cl. I (all the animals)**

Conclusion

Even if no effects of the NDCs were observed on *Bacteroides* and *Clostridium* Cluster I populations, POS showed the highest prebiotic potential.