

Title:**Evaluating recombinant secretory IgA stability upon a feed challenge experiment****Authors & affiliations:***Palaci J.^{1,2}, Viridi V.^{1,2}, Cox E.³, Depicker A.^{1,2}**¹Department of Plant Systems Biology, VIB, Gent, Belgium**²Department of Plant Biotechnology and Bioinformatics, Ghent University, Belgium**³Department of Virology, Parasitology and Immunology, Laboratory of Immunology, Faculty of Veterinary Medicine, Ghent University, 9820 Merelbeke, Belgium**jopal@psb.ugent.be*

Abstract: (Your abstract must use **Normal style** and must fit in this box. Your abstract should be no longer than 300 words.)

Enterotoxigenic *Escherichia coli* with F4 fimbriae (F4+ETEC) is the principal pathogen involved in piglet post-weaning diarrhea (PWD), a global occurring disease that leads to huge economic losses in the meat market.

Viridi and co-workers (2013) were able to confer protection against an F4+ETEC challenge in seronegative weaned piglets. A mixture of recombinant secretory IgAs (SIgAs) specific for F4 fimbriae were produced in seeds of transgenic *Arabidopsis thaliana* plants. These seeds were milled and mixed in the feed such that administration to the weaned piglets was easy. Only the group of piglets that received the SIgAs in the feed showed a significant reduction in shedding of the challenged F4+ETEC strain. This experiment was the starting point for some more detailed studies.

In the poster we will document that (i) the addition of a seed extract containing SIgAs allows the agglutination of the F4+ETEC bacteria, (ii) ETEC bacteria are complexed with the SIgAs in the faeces of the challenged piglets and (iii) the engineered antibodies are able to survive the gut transit and remain functional in the animal's faeces.

Viridi, V., A. Coddens, S. De Buck, S. Millet, B. M. Goddeeris, E. Cox, H. De Greve and A. Depicker (2013). "Orally fed seeds producing designer IgAs protect weaned piglets against enterotoxigenic *Escherichia coli* infection." *Proceedings of the National Academy of Sciences of the United States of America* 110(29): 11809-11814.