ENRICHED WITH START+ CONTAINS GOS

How to give your piglets a head start in life

Genetic selection for increased litter size resulted in lower piglet birth weight and less developed piglets. Piglets also receive less sow colostrum and milk, containing specific prebiotic oligosaccharides necessary for piglet development. Therefore, Nuscience has enriched its Babi® creep feed with START+, an innovative concept which promotes gut maturation and mimics the activity of these prebiotic milk oligosaccharides.

Breast milk, the wonder of mother nature

Breast milk is the golden standard for nutrition of newborn infants. It provides newborns with all essential nutrients needed in the first months of infancy. Human breast milk is mainly composed out of lactose and lipids. The third largest component of breast milk is called human milk oligosaccharides (HMO), which are present at even higher concentrations than protein. This high presence of HMO is quite remarkable, as babies cannot digest it. So why would mother nature add it to breastmilk?

HMO are present to feed the beneficial bacteria, like Bifidobacteria, in the baby's gut. So HMO are actually the first prebiotics in the infant's life. Besides their prebiotic function, HMO also have antimicrobial effects, strengthen immunity and support infant development. Hence breast milk is one of mother nature's finest inventions.

GOS, designed to mimic nature

Unfortunately, not all babies can be breast fed, and some babies grow up on formula milk. As formula milk does not contain those important HMO, researchers have developed galacto-oligosaccharides (GOS), which mimic the functions of HMO. Like HMO, GOS can reach the large intestine, where they can act as prebiotics and promote the growth of beneficial bacteria. Scientific studies including GOS in formula milk showed higher Bifidobacteria and Lactobacilli counts in the baby's feces, compared to infants fed formula milk without GOS, and the amount of these beneficial bacteria was similar as found in breastfed babies.

GOS are formed by enzymatic treatment of lactose, using β-galactosidase (from yeast or bacteria). Several GOS with different structures (varying in degree of polymerization, linkages, branching) can be formed according to the production process, however, only certain specific GOS structures show the strong prebiotic activity.

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BABI® with START+, stimulating gut maturation and intestinal health

Also sow milk contains prebiotic oligosaccharides, just like HMO in human milk. In sows, these oligosaccharides are called porcine milk oligosaccharides (PMO). The last years, several studies identified around 60 PMO, of which 24 of those 60 different oligosaccharides in porcine milk were also identified in human breastmilk, indicating the close resemblance between PMO and HMO. Therefore, the research team of Nuscience wondered if GOS, which are designed to mimic HMO, could also mimic PMO and have the same beneficial effects in piglets as in babies?

Using an in-house developed in vitro model to test prebiotic activity in piglets, Nuscience was able to select the most effective GOS. These GOS were included in the START+ concept, which is designed to stimulate the early maturation of the gastro-intestinal tract of newborn piglets. When enriching Babi® creep feed with START+, several trials demonstrated longer villi and better villus height/crypt depth ratio (Fig 1), more beneficial bacteria (Fig 2), and an improved production of short chain fatty acids, indicating the better development of the piglets' intestine. This improved gut maturation resulted in an increased piglet performance.

Furthermore, the use of GOS was associated with improved gut barrier function and increased piglet immunity, leading to a healthier piglet and less need for antibiotic treatments (from 9.5% to 5.5% of piglets that are treated with antibiotics per day).

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That's why Babi® creep feed enriched with START+, gives your piglets a head start in life.

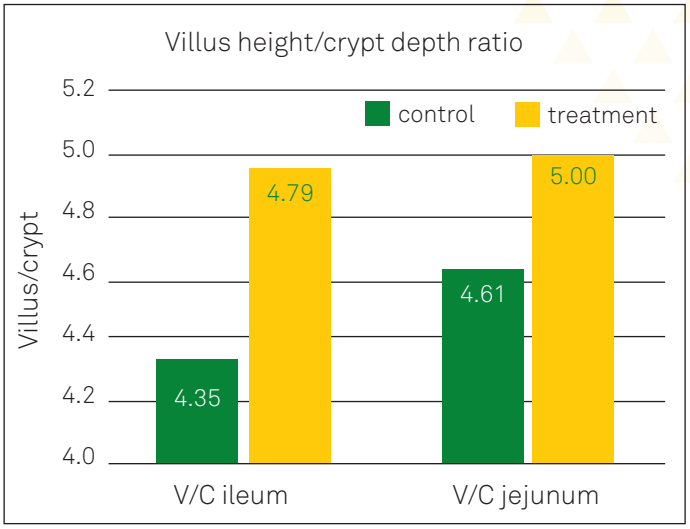

Figure 1. Villus height over crypt depth ratio of the ileum and jejunum of piglets at weaning, fed Babi® creep feed with or without GOS.

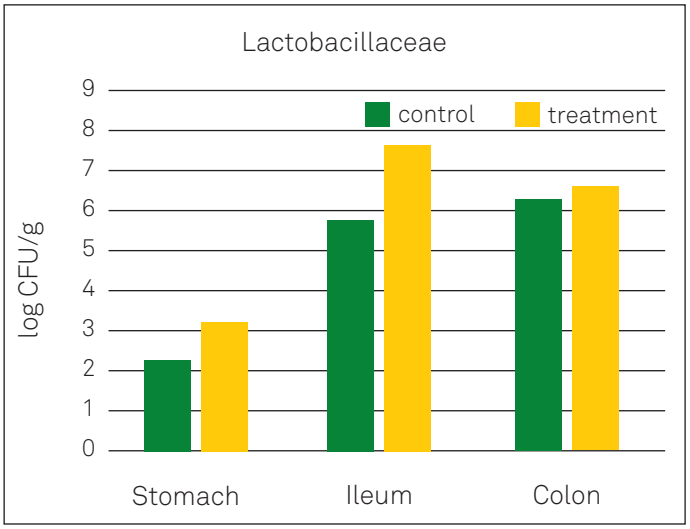

Figure 2. Lactobacillaceae (beneficial bacteria) in the stomach, ileum and colon of piglets at weaning, after daily supplementation with GOS.

For more information

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