

<b>Algemene gegevens</b>	
PPS-nummer	AF-12190
Titel	Food4Live Solutions
Topsector en innovatiethema	TKI Agrifood, Theme 6 (Health) and Theme 4 (sustainability of livestock breeding).
Projectleider (onderzoek)	Jasper Kieboom (TNO)
PPS-coördinator (namens private partij)	Laurien Ulfman (FrieslandCampina)
Contactpersoon overheid	-
Status (lopend of afgerond)	Lopend
Type onderzoek (F, T of V)	Fundamenteel
Werkelijke startdatum	08-07-2013
Werkelijke einddatum	31-12-2016
Korte omschrijving inhoud	Optimal food in the first phase of life will set a fundament for health later in life. By combining both microbial ecology and newborn physiology in relation to health and disease, new leads will be obtained for the development of functional foods and/or ingredients for the infant formula market and the calf husbandry. The resulting reduction in infections will decrease antibiotic usage in calves due to a higher resistance and a healthier start of life in infants through dedicated infant formulas.

<b>Highlights</b>
<p>FrieslandCampina and VanDrie Group aim for a common goal; making the optimal food for the first phase in life to ensure optimal growth and development of a healthy newborn. Two interesting observations triggered this research initiative: 1) breastfeeding and suckling protects against the development of infections in both human and bovine newborns, respectively, and 2) the microbiota of breast and formula fed newborns has a different composition at various sites along the respiratory and gastrointestinal tract.</p> <p>Since the host's microbiome is assumed important for pathogen-resistance and immune-modulation, and thus for a healthy development of newborns, we hypothesize that the composition of the microbiota of both human and bovine newborns plays an important role in resistance against infections and is steerable through diet. By comparing the microbiota of breastfeeding with novel formula feeding interventions, insights will be obtained on the impact of formula feeding on the microbiota composition of infants and calves. Data regarding health status of infants and calves will be linked with the microbiota profiles as determined by advanced molecular technologies.</p> <p>Extensive microbiota profiles of calves were generated and analyzed using an Illumina platform. By application of statistical machine learning tools, a dynamic model has been developed for the development of microbiota composition in calves. The insights are currently used to define an intervention study. In parallel, an in depth analysis of microbiota samples of infants is currently taking place. This will give a high resolution dynamic model of the infant microbiota. By combining both microbial ecology and newborn physiology in relation to health and disease, new leads will be obtained for the development of functional foods and/or ingredients for the infant formula market and the calf husbandry. The resulting reduction in infections will decrease antibiotic usage in calves due to a higher resistance and a healthier start of life in infants through dedicated infant formulas. Optimal food in the first phase of life will set a fundament for health later in life.</p>