



## PROF. DR. WALTER GERRITS (WUR)

Fermentation of proteins inside the gastro-intestinal tract of pigs.

### Bio

Walter Gerrits is professor in Animal Nutrition at the Animal Nutrition Group of Wageningen University since 2016. After completing his PhD on growth modelling in calves, dr Gerrits worked as a research scientist for TNO Nutrition & Food Research Institute after which he started working at Wageningen University in 1999. His research focuses on digestive physiology and macronutrient metabolism in various species. Dr Gerrits has focused on interactions between nutrition, health and welfare. In whole-body metabolism studies, dr Gerrits combines indirect calorimetry with stable isotope tracer technology. Understanding of digestion kinetics is a key item in his research across species. In pigs, his research has focused on the quantitative impact of suboptimal health on nutrient digestion and metabolism.

### Abstract

Fermentation of substrates in the gastro-intestinal tract is generally considered to occur mainly in the large intestine, but has been demonstrated to start already after ingestion in the stomach. Whereas fermentation of fibres is considered positive, fermentation of proteins is, apart from a loss of building blocks for the synthesis of proteins, often considered to negatively impact health. This is often attributed to toxic end-products of the fermentation of proteins. After discussing the main sources of proteins that flow into the colon, the presentation will focus on ways of steering protein fermentation and highlights fermentation metabolites that are produced, absorbed and excreted in urine. The impact of protein fermentation on intestinal health and function will be discussed based on studies conducted at levels varying from cell, organoid to *in vivo* studies with pigs.