

6. Are we turning cows into pigs? Let's ruminare on that...

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To improve feed resource efficiency and reduce the environmental impact of dairy farming, improving feed efficiency has gained increasing interest. Recently, the breeding company CRV started routine recording of individual feed intake on commercial dairy farms in The Netherlands. These measurements enable the inclusion of feed efficiency in the breeding objective. Research suggests that differences between cows in feed efficiency can be partly explained by differences in digestibility. However, these traits are laborious and expensive to record. Therefore, limited knowledge is available on genetic and phenotypic relations between feed intake, feed intake pattern, feed digestibility and feed efficiency.

During the last decades, improvements in nutrition together with genetic selection led to increasing milk yield and feed intake of cows. Meanwhile, there are indications that cows' ability to digest feed, in particular fibre, has decreased. This decrease in fibre digestibility is undesirable considering the role of a cow in a circular food system, where cows convert human-inedible fibre-rich diets into high quality human-edible animal products. Therefore, the future dairy cow should have excellent genetic abilities to digest fibres.

Hence, to improve our fundamental understanding of (genetic) differences between cows in feed digestibility, the current project will surpass disciplinary boundaries through a close collaboration between two PhD candidates from the Animal Nutrition and the Animal Breeding and Genomics Group of Wageningen University and Research. Scale boundaries will be crossed by collecting and analysing faecal samples of approximately 400 genotyped cows of which individual feed intake and feed intake pattern is recorded.