

Adding social network information to automated dairy cow management*Paul Koene**Wageningen University & Research, Wageningen Livestock Research, the Netherlands;**paul.koene@wur.nl*

Dairy cow management systems are based on traditional and sensor information concerning individual parameters. Future management should include also social information, because Social Network Analysis adds crucial information and precision and consequently increases welfare and reduces costs. In dairy cow management focus lies mainly on individual performance and measurements despite the fact that social information is shown to be important in managing introductions and removals, oestrus, lameness, cow traffic with respect to feeding (fence) and milking (robot). Social influence can be both positive and negative. Relevant behavioural information are interactions, rank order, nearest neighbours, furthest neighbours, friends, approaches, avoidances, time spend together and many social behavioural elements, such as vocalizations. Many of the interactions and associations can be automatically measured using sensor technology. Using the social information in the pasture or barn will improve actual management by more precise interpretation of performance measurements and the opportunity to guide the behaviour in cows, bulls and calves. Furthermore, assessments of individual and group welfare are possible, facilitating benchmarking. The integration of individual and social information is based on analysis of cow positions allowing for on social network assessment. During further development of the management system new monitoring and sensing parameters can be added and used after or during the needed validation and standardization.