

Session 8: Adaptation, resilience and agroecological transition in small ruminants and camelids.

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### **GENOCELLS FOR DAIRY GOATS: IDENTIFICATION OF THE MOST CONTRIBUTING GOATS TO THE BULK TANK SOMATIC CELL COUNT BY GENOTYPING TANK MILK.**

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Efficient monitoring of bulk tank somatic cell count (SCC) is essential for dairy goat farmers to optimize milk price and herd's health. GenoCells® is a revolutionary technology that uses DNA analysis to determine with high accuracy the animals contributing to the bulk tank SCC. In the bulk tank, the main source of DNA is the somatic cells. By genotyping the dairy animals and the bulk tank sample, then applying a statistical model, GenoCells® determines the cells responsibility of each animal in the bulk tank. This method has already been tested with cows and found to be as accurate as traditional flux cytometry method.

This new technology allows more flexibility and frequency than the traditional method of SSC on individual sample, creating great interest among dairy goat farmers. GenoCells could give them frequent indicators of the goats that contribute mostly to their bulk tank SCC.

To validate the reliability of the GenoCells® method for goats, and assess its potential added value for farmers, a trial is currently led in eight dairy goat farms of the Pays-de-la-Loire French geographic zone.

After a first lactation of trial among the eight herds, results allow to conclude to a satisfying reliability of GenoCells® when it's compared to the milk recording operations to identify the most contributing goats to the bulk tank SCC. In fact, the differences observed between the two methods do not have impact on the technical value of the results.

Milk tank samples are analysed with GenoCells® every three weeks to give a result to the farmer. Every goat is classified in a category depending on its cells responsibility and its evolution through the last two samples. Farmers also receive the genomic indexes of their goats. These indicators should allow to appreciate the added value of GenoCells® for dairy goat farmers and to lead to a potential profitable service for them.

The GenoCells® method has the potential to improve cells' herd management. This method needs to fully genotype individuals. The valorization of genomic indexes for the selection of females constitutes the 2nd axis of added value of GenoCells.