

Paper based point of care testing for detection of *Staphylococcus* in milk from sheep and cowL. Chapaval¹, E. Carrilho², M.D. Rabelo¹, L.F. Zafalon¹, J. Oiano¹ and A.R.A. Nogueira¹¹Embrapa Southeast Livestock, Animal Health, Molecular Microbiology, Rodovia Washington Luiz, km 234, P.O. Box 339, São Carlos, SP – 13560-970, Brazil, ²Universidade de São Paulo, Departamento de Química e Física Molecular, Avenida Trabalhador São Carlense, 400 P.O. Box 780, São Carlos, SP – 13560-970, Brazil; lea.chapaval@embrapa.br

Tests point-of-care test (POCT) of bacterial infectious agent's offers substantial benefits for the diagnosis of diseases, especially for reducing the time required to obtain results. Microfluidic biosensors based on lateral flow devices offer low cost and are highly sensitive to POCT. For the development of a multiplex immunospecific biosensor for the detection of *Staphylococcus aureus* and two coagulase-negative Staphylococci (SCNs) from the milk of cows and sheep, functionalized gold nanoparticles conjugated antibodies will be used as antibacterial agents for signaling. The project is at baseline and, until the present time, these are the activities executed. Twenty milk samples were collected, from cows and sheep, for the California Mastitis Test (CMT). In animals showed positive for CMT, 5 ml of milk collected aseptically, was sent for bacteriology. For detection and identification of *Staphylococcus* species, the procedures described Koneman (2007) were used. Confirmation of the identity of the microorganisms mostly found was made by PCR, using primers specific for *S. aureus* and *Staphylococcus epidermidis*. Growth curves were constructed for knowledge of physiological behavior of microorganisms to perform the extraction of different amounts of DNA for quantification through microchips. Cell quantification was estimated by spectrophotometer and plate count. This has been done to evaluate the sensitivity of detection of POCT. This project intends to establish the advantages of the POCT because it does not require any preprocessing of the sample and will be capable of detecting whole bacterial cells, will be detected visually, and provide a tool for milk producers.

Ultrasound measurements of longissimus dorsi and subcutaneous fat in Teleorman Black head lambs

E. Ghita, C. Lazar, R. Pelms, M. Gras, T. Mihalcea and M. Ropota

National Research Development Institute for Animal Biology and Nutrition, Animal Biology, Calea Bucuresti nr.1, Balotesti, Ilfov, 077015, Romania; elena.ghita@ibna.ro

Romania is among the European countries with the highest stock of sheep and with a high potential of sheep meat export. In order to produce carcasses that are competitive on the European market, the Romanian sheep farmers must increase the proportion of meat and to decrease the proportion of bones and fat in the carcass. The purpose of our experiment was to evaluate the properties of longissimus dorsi muscle (depth, area and perimeter) and subcutaneous fat thickness on live animals using the ultrasound method on Teleorman Black Head lambs, a local breed. The studies were conducted on weaned lambs, 48 females and 25 males, aged 100 days, with the average body weight of 30.05 and 33.22 kg, respectively. The ultrasound measurements were performed with an Echo blaster 64 using LV 7.5 65/64 probe, supplied by TELEMED ultrasound medical systems. The ultrasound images were recorded using Echo Wave II software version 1.32/2009. The first measurement point was 5 cm from the spine, at the 12th rib; the second measuring point was between 3rd and 4th lumbar vertebrae. The average values of the fat thickness, depth, area and perimeter of LD muscle were: 2.41 mm, 21.88 mm, 8.93 sq cm and 124.22 mm. The results show differences between the two measuring points, but they were not statistically significant ($P > 0.05$). The measurements were also analysed by sex and significant ($P < 0.05$) differences were noticed only for the depth of the muscle at the 12th rib and for fat thickness between 3rd and 4th lumbar vertebrae. There were significant phenotypic correlations between the body weight and the ultrasound measurements, the correlation coefficients ranging between 0.348 and 0.782. These studies of ultrasound measurements on live animals will continue and the results will be used to select animals for meat production.