Incubator Group Report: Development of Sensor Technologies for Small Ruminants

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Hotel Tryp Palma Bellver was the venue for a very successful meeting of the Small Ruminant Sensors Incubator Group. Sixteen delegates from Spain, Italy, France, Turkey, Israel, UK and Sweden participated in presentations, discussions and planning of future activities and STSMs. Numerous disciplines were represented, including animal science, genetics/genomics, electrical engineering, computing science, veterinary medicine and physiology. The meeting started with presentations on previous research involving small ruminants, using either cattle sensor devices or specialist technologies intended for research use. Since these approaches are not likely to be applicable in commercially managed small ruminants, new research to develop better devises was then presented. A number of approaches were discussed, including specialist weigh stations for monitoring growth and water consumption of sheep or goats (from Israel), a miniaturized rumen bolus device for temperature (from Spain) and an ear-tag sensor for various health-related measurements (from Italy). The first day concluded with lively discussion over dinner, and a promise to reconvene early the next day for the brainstorming session. The flipchart was soon in use, and much scribbling was done as ideas were put forward, discussed and either rejected or progressed. Small ruminants are different to cattle. They share some of the same problems, in some cases (rumen acidosis in goats, for instance) perhaps to a greater extent, and may benefit from the same basic technological approaches. Their sheer size makes issues such as battery life more difficult, and there is no doubt that applicable technologies currently lag behind. The absence of commercially available technologies for small ruminants may be a cloud with a silver lining, since it provides an opportunity to plan strategically, considering options such as a service-provider approach to wellbeing sensing rather than direct sales of individual sensors. The Workshop concluded with the recognition that significant opportunities existed and networking should continue and be expanded to ensure successful development of appropriate technologies. In this regard, it is gratifying to note that various delegates were actively involved in other related EU projects including 4D4F, EraNet SUSAN EcoLamb and IoF2020 (Internet of Food and Farm).

Acknowledgements

This article is based upon work from COST Action FA1308 DairyCare, supported by COST (European Cooperation in Science and Technology, www.cost.eu). COST is a funding agency for research and innovation networks. COST Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.