# AnimaL Electronic Recording, Transmission and Synthesis (ALERTS)

*Will extra data recording on farm help management?*

## The Challenge

Big Data and Smart Farming are increasingly common taglines used to reflect advances in technology that allow increased frequency and automation of data recording. The bigger challenge now is to identify what is worth recording and then translate vast quantities of data into valuable management information.

On-farm data recorders also pose a practical challenge as hardware needs to be robust.

The overall intention of devising and testing Smart Farming technologies is to improve farm efficiency, support decision-making and improve the timeliness of management intervention.

## The Research

A research consortium (comprised of research institutions and industry) designed, engineered and tested a number of sensor systems on SRUC research farms.

Sensors are being used to help build a 'data picture' of the physiological and metabolic condition of livestock. This is being achieved through analysis on vast quantities of data from many animals.

## The Results

Technologies developed include:

1) Devices attached to collars, which monitor activity, eating and ruminating behaviours.
2) Tail mounted sensors to predict and alert of imminent calving.
3) Internal sensors (intra-ruminal 'bolus') to monitor rumen function and measure, for example, temperature and pH levels.

## The Impact

Due to the success of the technologies used in this research; they are now being rolled-out on commercial farms within the UK and internationally to be used as practical management aids.

Activity monitors can help identify oestrus or early stages of ill health. Improved reproductive efficiency can have significant financial benefit, which is suggested to cost approximately £4.20/cow/day for every day a dairy cow is over

a 365d calving index. A suckler cow not in calf results in an estimated cost in excess of £500/cow.

Sub-Acute Ruminal Acidosis (SARA) is estimated to cost between $500M - $1B annually in the USA alone. Monitoring of rumination and rumen function could therefore support interventions that benefit animal welfare and productivity.

## Project Detail

**Project start date: 01/12/2011, finish date: 28/2/2015.**

**Research team involved, SRUC Beef and Sheep Research Centre staff, SRUC Dairy Research Centre staff, Animal and Veterinary Sciences staff. External collaborators were Silent Herdsman Ltd (Overall lead), Wellcow Ltd, Harbro Ltd, Strathclyde University, NMR Ltd, Wm Morrisons Supermarkets Ltd. Project was co-funded by Innovate UK**

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## Further Information

For more information on farm business management and livestock systems contact your local SAC Consulting office or your local beef and sheep specialist at **beefandsheep@sac.co.uk**