

THERE'S SOMETHING IN THE WATER: MINIMIZING METHANE IN NORTHERN BEEF HERDS

How soluble compounds can help cattle cut back on belching

The 'Water-Based Livestock Methane Mitigation' project will examine a range of methane-reducing compounds determine if they can be safely and effectively be delivered to cattle via automated water systems to decrease enteric methane emissions.

The compounds will be delivered in the same way as fluoride is added to human drinking water or as additives are mixed in fuel for engine efficiency – measured doses dissolved in the water supply via automated technology.

Led by CQUniversity Australia in partnership with DIT AgTech, the Queensland Government and Meat and Livestock Australia, the three-year project will begin with lab trials of both proven and novel methane-reducing compounds to determine which are most soluble and stable in water using in vitro systems.

The next stage will investigate if these are palatable to the animals and if they cause any adverse impact to production. Stage three will examine the optimal dose rate, and in the fourth and final stage, large-scale field trials will be conducted to evaluate and demonstrate how the method can be established within commercial extensive grazing systems such as those in northern Australia.

Significance to industry

Methane emissions from livestock account for about 70% of the greenhouse gas emissions in Australia's agriculture sector.

Under its 'CN30' plan, Australia's red meat industry has set a target of carbon neutrality or zero net emissions by 2030. By reducing methane from livestock through water-based supplementation, northern Australia's beef producers can be part of the climate solution.

Technology for the extensive operations of northern Australia

A range of feed additives and supplements have been proven to suppress methane emissions in livestock, but the majority are suitable only for intensive production systems like feedlotting and dairy systems, where controlled delivery via feed is possible.

In northern Australia, most beef production systems are extensive grazing operations over extremely large areas, so producers face a major challenge in delivering supplements to their cattle. However, all livestock in extensive grazing systems require a source of drinking water and this is increasingly delivered through infrastructure such as bores, tanks and troughs.

DIT Ag Tech has commercialised a remotely managed direct water injection technology (DWIT) that is currently used to deliver urea and phosphorus to cattle in extensive grazing systems. The Water-Based Methane Mitigation project will use the DWIT system to enable the controlled delivery of the methane reducing compounds in water to cattle in extensive production systems.

» For more information contact Dr Diogo Costa: d.costa@cqu.edu.au or 0409 445 454



Figure 1: CQUniversity Senior Researcher Diogo Costa and DIT AgTech CEO Mark Peart discuss how direct water injection technology is installed in troughs.