

Improving climate resilience of the Australian Sheep Industry

Background and Aims: we will work within farming system groups to demonstrate practical and easily adoptable management strategies which improve thermoregulation of sheep, increase efficiency of feed utilisation during periods of extreme heat, and reduce the impacts of heat events on reproduction. We have selected cost-effective, readily available interventions and management strategies which, based on previous research, have the potential to improve the productivity and wellbeing of sheep during periods of nutritional and climate induced stress. We will quantify the improvement in flock productivity that occurs following their implementation within commercial farming systems. Alongside of this, we will identify the climatic thresholds above which sheep thermoregulation is challenged by heat events which occur on commercial farms, and establish the relationship between these thresholds and reductions in wellbeing and fertility.

The two approaches to be validated are:

- Supplementing ewes and/or rams with regulin (melatonin implants) prior to joining
- Dosing ewes and/or rams with an oral drench containing Vitamins ADE.

Primary requirements from producer sites:

- Ability to identify ewes according to treatment received, so as to obtain accurate scanning data (pregnancy state, number of fetuses, early or late joining cycle)
- Ability to manage separate joining mobs (if the rams are treated NB, not required if pedigree matching using DNA).
- Joining during December through to February

Desirables from producer sites would be:

- Willingness to allow us to fit animals with temperature, activity and GPS trackers (non-invasive).
- Enabling us to put climate measuring technologies within paddocks

The research team will be present for all treatment implementation, and to assist with measurement days (i.e. scanning), and anything else required. The research team will provide extension material (including project information, and development of producer case studies.

Primary requirements from producer group officers are:

- Linking research team in with suitable producers.
- Facilitate two extension activities, the first in December through to February, and the second in late May/early June. These can be tied in with existing activities, and could include farm walks, or integration with existing field days.
- Promotion of the project to group members and affiliate organisations through social media, newsletters and other promotional opportunities.

Indicative budget for producer groups to support extension work is \$8,000 per producer group, with some room for negotiation.