

## Innovation Hub: Improving climate resilience of the Australian Sheep Industry

### Overall Requirements from the producers

A summary of their management over the Summer Period: Joining dates and length of joining, mob size, number of mobs, and ram to ewe ratio. Feed ration (capacity to supp feed betaine, or if drench/implant is the best way to tie into the system). Details on when they preg scan and how they are managed up to and post scanning (APRIL DEADLINE FOR SCANNING RESULTS TO ADHERE TO MAY SUBMISSION FOR INNOVATION HUB)

Ability to take a weight and/or BCS at the beginning and the end of joining. Ability to manage ewes/rams as treated and control until conception rates are determined. EID management is preferred, single sire mates and DNA testing is also fantastic (to facilitate minimal disruption to the system). For melatonin we will need access to rams 1 month prior to joining for the implant (ewes at joining or at this time point). If possible the ability to take a blood sample from a subset of the ewes and rams that receive the ADE or E drench, or the betaine supp feed.

### Methods

#### Animal Requirements:

**Ewes:** A minimum of 200 ewes, 100 to receive treatment 100 to act as a control.

**Rams:** At least 2 syndicate mate groups, to allow treatment to be administered to one syndicate and another to act as a control

*\*As many numbers as willing to participate, ultimately paddocks will be determining factor with treated and untreated paddocks as the experimental units.*

#### Paddock Requirements:

If supplementation in ewes: at least two paddocks, if individual identification of ewes receiving treatment cannot be managed.

If supplementation in rams: at least two paddocks, unless rams are single sire mated or DNA tested

*\*EID management in ewes eliminates the constraints of paddocks in ewes receiving treatment*

*\*DNA testing/single sire mates eliminates the constraints of paddocks in rams receiving treatment*

#### Supplementation protocol

##### **ADE vitamin drench or melatonin implant**

**Ewes:** Pre-joining drench of ADE or implant of melatonin in ewes to be administered at ram entry.

**Rams:** Pre-joining Melatonin implants (3) to be administered one month prior to ram entry, vitamin E (or ADE) drench to be administered at ram entry

##### **Betaine supplementation**

Betaine supplemented in the feed ration throughout the joining period. Therefore, ewes and rams in single paddock will be treated with the supplemented, with another equivalent paddock acting as a control

##### **Temperature technology (in conjunction with the supplementation)**

We will be deploying technology on these producer sites to collect temperature/climate data.

Where possible, it would be great to deploy intravaginal temperature loggers in ewes for two weeks to align climate data to ewe core temperature regulation. Producers using AI are great for this.