

## Gulbali Stories — Sheep Heat Stress Supplement Trial

### *Lambing by Confined Ewes*

Guest: Dr Susan Robertson & Jim Meckiff | Host: Christine Storer

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*Welcome to Gulbali Stories, where we share inspiring tales of innovation, resilience and sustainability in agriculture, water and the environment, from Australia and beyond.*

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#### Christine Storer

Welcome to a podcast of experiments that have been run with the Climate Smart Agriculture Program under the Natural Heritage Trust. These results were presented at the MerinoLink workshops in NSW and Victoria in 2026, and the aim of the experiments was to make sheep farming more sustainable with reduced pasture availability, with drought and fires, in a variable climate — and specifically when we end up having to lamb in confinement.

Presenting results are our livestock expert Susan Robertson from Charles Sturt University, with commentary and advice from sheep production advisor Jim Meckiff from JM Livestock. Susan, tell us about this experiment.

#### Dr Susan Robertson

Well, this was a tough experiment to run. I mean, lambing in confinement is not recommended practice, there are no other studies on it in Australia. So, you know, this was working off our knowledge of what impact on lamb survival, trying to come up with the best plan which you can use. Why? Because when there's drought and there's no pasture in the paddock, if you leave those ewes out in big paddocks, you are going to get mismothering and poor lamb survival. So, the question is really, is locking them up in confinement pens to lamb going to reduce lamb survival compared with a paddock lambing? Farmers are worried about mismothering if you're lambing in high densities, but likewise, leaving them out in paddocks where the ewes are far more likely to be able to walk away from them — she has to go off for a drink to get water, and, you know, the lamb can't walk long distances, particularly when it's hot. There's risks in paddock lambing as well. So, which is the better system, or can we actually, if we're forced to, lamb ewes within a confinement pen?

So, we had a go — this was a replicated experiment. So, we used two pens of single-bearing ewes. Each of those pens had 100 single-bearing ewes, and the density was 3 metres squared per ewe. In comparison, we had two paddocks with 100 singles in each, and those paddocks were five hectares — so small paddocks, probably not unlike a density that some people would lamb at. We didn't have sufficient twins to replicate, so we only had one pen of twins — so 75 ewes in one pen at 4 metres squared per ewe, and we compared that with 75 twins out in a paddock, with the paddock being eight hectares in size. Now, those are high densities, but these are certainly well within what's the minimum requirement being 1.8 metres squared for pen lambing for ewes. So far above that level, that's certainly much tighter than what a lot of farmers might be using. So, these ewes were all Merino ewes, they were joined to Merino rams. They lambed over around about three weeks, and they lambed April, May 2026.

### Christine Storer

So, tell us a bit about the facilities that you used, because we did interviews with producers at the last MerinoLink workshops on what are the best conditions, how to set up the pens?

### Dr Susan Robertson

So not a great deal of information on what's best, hence we just had to choose something. But certainly, what farmers told us last time from their experiences with lambing in confined areas — lambs crawl through hinge-joint fences, and so we put hessian on the fences to stop the lambs crawling through and getting mismothered. Certainly, important when you've got ewes in adjacent pens — lambs get through fences out in the paddock as well, so in a tighter, more dense situation, they will get through the fence. So, we wanted to prevent that, and hessian also provided some shelter for lambs if it becomes poor weather. Certainly, it rained — Wagga had two events, around about 30 mm of rain, during the period, and that created quite muddy pens. Now you certainly don't want a lamb in muddy pens, so we had to move them into a fresh pen, and the hessian was still attached to the pen they were in, couldn't move it quickly, so we put plastic sheeting up on the new fences to keep the lambs in and to provide some shelter. Really important to keep the most hygienic pen that you can, in order to reduce the risk of any type of infection.

### Christine Storer

And Susan, they were inducted onto grain before going into pens, in the normal confinement method?

### Dr Susan Robertson

Oh, yes, definitely. So, these ewes got put in the pens roughly one month pre-lambing, and they were introduced to grain with an autumn lambing — so, you know, they were being fed grain in the paddock to start with, and then introduced carefully onto the grain. I mean, you certainly don't want to induce acidosis by trying to get onto grain too quickly, so you've got to be quite careful in late pregnancy to make sure that they're inducted properly. Other key things are that the ration needs to have lime and salt — so 1% lime, 1% salt, 1% causmag — because we know when we're feeding high-grain rations, that those minerals are going to be deficient. So, the ration was based on barley grain, with hay — grain put in troughs in the pens, and hay was pushed on the ground.

So, when we come to the results — in terms of lambs marked per ewe, both in the pen and the paddock, we got over 92% lambs marked per ewe, and so the lamb loss was under 10% in both of those treatments and no difference between the pen and the paddock. So very successful lambing of single-bearing ewes in confinement. If we look at the twin-bearing ewes, we had perfect lambing conditions pretty much during this trial, other than a couple of days of heavy rain and cold weather. We need to remember the context of this trial — in the paddock situation, it is optimum lambing conditions, perfect weather, we had an early break to the season, you know, those green feet around — these ewes were not being supplementary fed, so they're undisturbed, perfect weather, and therefore we got quite good survival of the twins out in the paddock. At the end of the lambing period, we had 161% lambs per ewe marked, and so the mortality was 18.6% — that's well below the average of 30% for twins. We didn't do so well in the twins in the pens — so we only marked 123% from the twin-bearing ewes, and we had just under 40% mortality of the lambs. This was due to considerable impact of pre-lambing prolapses — so there were 3 out of 75 ewes that had a pre-lambing prolapse and therefore had to be euthanised, and we had one with ringwomb, which also couldn't be saved. So those certainly contributed to that mortality rate.

### Jim Meckiff

Yeah, it's an interesting set of results here Susan. It was really fantastic to see the survival of the singles on par with the paddock conditions, which were perfect — I haven't seen an

autumn like it for many years down our way. To see a result like that gives me great confidence to be able to do lambing singles in confinement when the season, more conditions are drought-impacted — a long, hot, dry drought, so no water — having control of the situation in confinement is a good result. When it comes to the twins, when you take out the five ewes that had an unusual reason for euthanising — unusual circumstances on them — sneaking back up towards 130%, 130% for twins survival at lambs marked is a really wonderful result. 12 months ago, we were in the depths of a pretty tough season in the south — lots of twin mobs coming in under 100%, so you're looking at over 50% mortalities in that situation. I consider this to be a pretty remarkable result, a good result. Gives me confidence that more research should be done in this space. And if I was in the depths of a really long, prolonged drought, maybe lambing in containment is a good option, because I know the results aren't ever going to be that good in the paddock when you are trail feeding big mobs in big paddocks — the mismothering, starvation, the exposure losses are going to be a lot higher than what we've seen here. 161% from the paddock situation — you've got a reasonably low stocking rate, I think it's about nine or ten ewes to the hectare, isn't it? It's not a high stocking rate. It is great conditions, perfect feed on offer, ideal weather, except for a rainy day here and there — you can't stop those. Yeah, it is a really wonderful result. You're comparing the toughest of tough conditions to the very best of conditions. Great work here, and more work to be done on the twins.

### **Dr Susan Robertson**

Okay, well, thanks for that, Jim. It's nice to know how it really compares to what actually happens in commercial practice under drought conditions.

The take-home messages from this trial are that we are pretty confident that you can successfully lamb single-bearing ewes in confinement pens at the density that we had, which was three metres squared per ewe, and with only 100 ewes per pen, without detrimentally impacting on lamb survival. We certainly don't recommend twin lambing in confinement at this point in time — we need to do some more study to try to improve the practice and particularly try to see whether that pre-lambing prolapse — is that a common thing? It was unexpected certainly, and if we'd not had that, well, it would have been much better.

The key to success with any lambing, in pens or in paddock, is to optimise nutrition — nutrition is the most important factor in terms of successful lambing and reducing ewe and lamb mortality. The other factor is to minimise disturbance — so we were required to check these ewes twice per day, so certainly feeding causes major disturbance, but you have to feed them. But otherwise, minimise the disturbance to lambing ewes. If you're lambing in pens, pen hygiene becomes really important — so avoid muddy pens. As I said, we took ours out and put them in a fresh pen, because muddy pens will cause contamination of feed and promote disease or infection in lambs — so not good to keep them in those conditions, so do what you can to avoid that.

### **Jim Meckiff**

Commercially speaking, we were asked to put forward research that commercial producers could utilise, so hence why the density is pretty tight — 100 ewes per pen in a pretty small area. Could we do this with 200 or 300 ewes in a pen? There's a lot of containment areas set up there, sort of half a hectare, or maybe a little bit bigger — how many could you put into that space? It needs to be trialled on farm, I guess. Having these containment areas available when you are in a really tough drought situation — maybe having the singles locked up in containment is going to allow a lot more spreading out and smaller mob sizes for your twins out there in the paddock. So how we use these farm resources — that is the pasture, and also the containment areas, during a drought situation — this seems to be really great work that we can get better results on farm.

### **Dr Susan Robertson**

The only other thing I'd like to add is potential health issues.

### **Jim Meckiff**

So the health issues are again — we've got a very short three-week lambing window here, so using pregnancy scanning to obviously separate your twins and singles, but you could also pull out your earlies and lates, so you're concentrating your efforts on the ones that need it most. Earlies go in, lamb down, come out, then you can have your lates coming in later on if needed be — so you can use that to your advantage. Having your animal health situation set up — with Campyvax, if you've got maidens or ewe lambs in containment, having a Campyvax program sorted out there, it's a pretty high-risk environment, but you can do what you can to try and prevent that. Having a six-in-one program up to date, a seven-in-one with your Eryvac or GlanEry — these ewes were treated with GlanEry, so a two-shot pre-lambing with a booster provided there, so you've got your seven-in-one GlanEry program for these lambing ewes. Other things to be aware of, obviously a drenching program into the containment area is very important as well.

### **Dr Susan Robertson**

I guess the only other thing to say would be, if you've got health issues, contact your local vet — it's far better to recognise you've got a problem and get help before it becomes a major problem and cost you a lot of production losses, so keeping in contact with your local vet.

### **Jim Meckiff**

One more thing — if you are able to provide troughing to keep the grain off the ground at that point, it's probably beneficial, whether you're feeding along the fence line into a trough, or some sort of conveyor belting, or whether you've got purlins in the pens — having that grain up off the ground for those pregnant ewes is probably going to be quite beneficial. Keeping in mind we are dealing with a drought situation, so hopefully the muddy pens isn't going to be an issue, but it's inevitable that some rainfall is going to turn up just as the lambs start dropping. Having good hygiene is very, very, very important. Keep on top of your animal health programs.

### **Christine Storer**

Thanks, Susan, for those very interesting results, and Jim for the commercial realities of those. And there are further podcasts and text information on the MerinoLink and Gulbali Institute web pages around confinement — animals in, animals out, setting up, and health issue management. Thank you.

Thank you for listening to Gulbali Stories. Discover more about research and partnerships at the Gulbali Institute at Charles Sturt University by visiting our website or following us on social media at #GulbaliInstitute. We look forward to sharing more stories with you soon.

- Lamb survival singles similar in pen and paddock
- Twin mortality increased in pen

