

Transcript

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# Scene description

Geoff Duddy from Sheep Solutions, New South Wales, discusses the profitability of feedlotting for Western Australian producers.

# In this video

* **Mandy Curnow**, Senior Development Officer, Department of Primary Industries and Regional Development
* **Geoff Duddy**, Sheep Solutions, New South Wales

# Transcript

**Mandy:** I'd like to introduce to you Geoff Duddy. Geoff has been doing some work with us and we asked him to commission - we asked him to do this report for us because of the emerging interest around feedlotting, and from a producer perspective about the profitability of feedlotting, and also from a processor/supplier perspective on trying to sure up an even supply of lambs particularly out-of-season lambs rather than spring lambs.

It's an important issue for the sheep industry and being able to engage with new markets but also to be able to maintain some of the markets particularly in the chilled sector rather than the frozen sector.

Geoff is from New South Wales, he’s an ex-DPI New South Wales officer and but he's been working out in the industry for many years now. Geoff runs nine to ten Lifetime Ewe Management groups on the east coast, he's done a considerable amount of practical application of feedlotting research across New South Wales and he's going to present some of the findings of his report.

The report; there are some hard copies there it's also available on our website including an appendix which documents a whole range of the set up factors and costs as well so if you have any trouble finding that let us know and I can make sure you get those and if we have your email addresses, if you RSVP'd we'll send out a copy of Geoff's presentation slides as well, but he's hoping to do some interactive work on the feedlot calculators so people are aware of how that works.

So Geoff I'd like to welcome you and thanks very much.

**Geoff:** Welcome everyone. Mandy, thank you again thanks for the opportunity to actually put a submission in for this analysis. It took a fair bit of work, pretty sobering stuff, there's a lot of interest in finishing lambs.

As Mandy said I work principally with New South Wales DPI, my main focus while with them and since leaving the department has been feedlotting, growing finishing of lambs and I’ve been banging on for years telling people it's not worth doing and I'll stick by that because it's quite an expensive process. There aren't always, there isn't always a margin to be made so I hate to sort of break the news to you first up but we'll have a look at the analysis that we undertook, the information behind the assumptions that we made as part of this study or report.

If we get a chance, if there is anyone likely here or if the other sites have one actually run through the calculator and try a few different scenarios we can show you how the actual feedlot calculator will generate likely profit or loss.

So the project objectives, there was a desktop analysis report, there were sort of two sections; one based on the infrastructure requirements and construction costs of anywhere from a 10,000-50,000 head feedlot. After discussion with Mandy and DAFWA actually suggested that we look at 3,000-5,000 head feedlots as well because that is a reasonable sized producer driven commercial sort of scale operation, we thought it's important to actually have a smaller scale if you like as part of the brief and also look at feedlot profitability with respect to the feed prices and the purchase and turnoff times of the stock.

We thought the best way to attack it was to actually use the law of averages if you like and bring everything down to one base so we actually set up a model farm unit from which we use that as a standard base and then sort of develop from there and running the different scenarios all based around a central starting point if you like. So we picked an area around Broomehill and got some background information on the farm there and I’ll go through some of that in a second. The reason we picked that area is that it was fairly central to a lot of the major abattoirs and was also fairly close to the Katanning sale yards, which is a great opportunity for people to source lambs and or sale as well. The model farm we looked at in that area was somewhere around 1800 hectares. The principal enterprise mix and breakdown cereals were about 65% arable on the property so about 65% of the area was basically given out to cereals, the remaining being grazing and you had options there of grazing canola or cereal crops in the winter/spring, your stubbles and any fodder crops over the summer period.

We thought it important that we have existing infrastructure and we're not going to run through it to the degree that we did this morning with the group this morning but we're going to cut out a lot of the background economics and they'll likely be like all the analysis for working out the different costings of the different size systems. It is all in the appendix of the report so if you've got a copy there and like to have a look at that please do so but we thought it important that we at least have some gear on farm so as the listing shows there we're looking at a reasonable shearing shed, sheep yards with a capacity of 3,500 at any one time, hayshed, silos, augers and the like and also access to the Great Southern Water Scheme, stock and domestic scheme, hopefully is part of it. We've used the option of having that as a principal water source but also costed separately as well with the analysis if you had to actually set up and have at least two to three days water storage on farm with water tanks.

We looked at five base feedlot systems, we analysed those using the Sheep CRC feedlot calculator. I was involved with the development of that program while with the department and we also developed some Excel-based sort of program to analyse some of the data as we went through. I looked at what I'm calling capacity and maximum annual throughputs for these five systems - capacity being say a 5,000 head feedlot, that's the capacity at any one time and let's say that you only do the 5,000 for the year versus the maximum throughput was for that sort of system around 43,000 lambs a year so we're looking at the two ends of the scale for economies of scale if you like or efficiencies. We went right through to a 50,000 head feedlot.

From that model farm we used a 5,000 head feedlot base and then had it as a model or modular sort of system, so basically the costing for a 5,000 head feedlot was X dollars and if it was 10,000 well it's two modules and you just kept adding on a module as needed.

This is the background assumptions that we use; the lambs we based on were crossbred lambs starting in final weights with 38 kilos live and 50 kilos finished which we really sort of equate to about a 17 kilo or you're restocker/feeder type lamb up to about a 23 kilo trade lamb. Starting values and these values are based on the average up to the time of the report for 2017 so we had the restocker/feeder lamb average, or your starting weight lamb averaged around $93.65 or $5.51 including skin value per kilo and the final value about $133.40 for that 23 kilo trade lamb. Growth rate we had down around about 280 grams a day, 43 days finishing, so a six week period but that also at 280 grams a day takes into account the first two weeks which, you know, really lambs don't do a hell of a lot of during the introduction period so the average around about 280 grams a day over the period is probably close to an industry average. Daily intake three and a half percent of liveweight. We used a pellet base ration mainly because WA is very big on the use of pellets and again for this sort of analysis it made it pretty easy to standardise the ration, there's one particular type.

I didn't include any wool income at all as part of the analysis through the calculator, the feedlot calculator. It does make a difference, it does actually make the figures look a little bit better depending on the amount of wool you've cut obviously and the value of that wool and the discussions we had this morning to be honest Merino lambs probably really come into their own in that situation with the current value of wool. We assumed that lambs were going to come into the feedlot pretty well off shears or short wool anywhere from two to four weeks off shears.

The ration based on pellets and 10% hay, I'm very big on keeping roughage in the system, energy 12.7 megajoules of energy, 16% protein. The ration costs, a base cost we started with was around $298 a tonne, feed conversion of 6:1 which again is an industry average and the total average feed per lamb over the period was 77 kilos in intake.

Other assumptions; deaths, shy feeders and your sale percentage, pretty well again industry standard’s 1% deaths hopefully we could have a little bit less than that but 1% deaths, 5% shy feeders, 94% were sale lambs. I'll just say the program actually values your shy feeders, it takes into account that they have eaten during the period that they're in the feedlot, and it assigns a 20% value above its starting price so the starting price - base starting price – was $93, so the shy feeders are valued out of the system 20% above that.

We have our normal sort of health costs; the drench, fly, A, D, E, B12 and clostridials is around $2.30. Transport cost in and out; $2 in and $3 out. Slaughter levy which everyone pays, your sale commission around five and a half percent, the system we set up was a self-feeder system working on five cents per lamb per day as labour cost. If we'd have worked on a bunker-style system like cattle feedlot, open-style bunker system we'd be looking at least ten cents a lamb a day and possibly more depending on the number of times that you actually feed out.

Machinery operation cost $13 a tonne to actually run your machinery to actually fill and process grains or whatever if you're doing that. And that’s one area that a lot of producers and the like when doing sums don't take into account, the running cost.

The other thing is interest on purchased land, we valued that at 8% so basically an overdraft, you know, those add up, those all add up when it comes down to working out your profitability overall. Capital costs were all based on these 5,000 head modules, that included the building yards, feeders, shade and shelter, machinery, land forming and water infrastructure. For every module increase, so for every 5,000 lamb increase, I actually reduced cost by 2.5% just to take into account economies of scale so you're saving a little bit it's not, it doesn't cost as much per unit as you go into a bigger capacity so we took that into account as we built our way up to a 50,000 feedlot facility.

Fencing-wise 40 by 50 metre pens, 2,000 square metres holding around about 500 lambs, which is four square metres of lamb, industry recommendation’s around five square metres. I'm reasonably comfortable with that, I'd actually like to see more area per lamb but we made it so you could run up to 500 per pen, pretty standard and cheap on infrastructure with using your ring lock, posts, plain wires and like, still costs around about $7,000 a kilometre, that included all wire gates, assemblies and labour. I didn't cost in sick pens actually we assign two sick pens for every 10 feedlot pens, we just assumed that they would be set up somewhere in or around your existing yards or existing facilities.

The feeders, I went for a self-feeder system, single-sided, and I will say I talked to Bruce Clark from Universal and used him as a base. I tried to use as much WA information as possible, asked okay what are we looking at with this universal feeder if we split it lengthways, then put backs to it and assign those as a single-side feed, so we worked on some costings there. You got about 15 days of feed per feeder before you needed to refill and that was a big saving, a big saving, compared to filling out or preparing and filling out feed every day in a trough sort of system. I actually looked at analysing the cost saving, labour-wise, with having self-feeders, the cost of actually establishing this sort of feeder system was recouped under all systems within a year just in labour saving, so by only costing you five cents a lamb a day with self-feeders versus ten and fifteen cents or whatever is doing an open trough sort of bunk-style feeder you actually pay for the feeders in a very short time.

Shade and shelter, I went for eco-shelters which we have producers here that certainly use them and they're certainly being used in the eastern states to give the option of also actually locking the lambs up during wet weather under those systems giving them about 1.2 square metres of land which is well and truly above the industry average for requirement anyway. If they're able to be locked up during wet weather that's a big plus for processers, you haven't got the sorting of the skins and the like and potentially carcasses when they're processed.

And there's the option there for deep litter, particularly straw based systems where that can be value-added on-farm either composted and sold on or used on farm. We try to use as much best industry practice or recommendations as possible; a lot of this information is based on the Code of Practice that we put together for MLA and also - now I'm not a trained nutritionist or a trained economist - but I'm right into the social side, the social aspects and production issues within feedlots and really try to look at mitigating sort of any stress factors.

Water costs, again I won't go into those too much, they’re in the report. Mostly looked at the supply line, and having two points in each feedlot peg, again to actually help reduce with stress issues. I did look at costing out concrete aprons under the feed troughs and also the water pens, I think they’re important, it's a big cost but I think it's well worth it, well and truly worth it, when particular during wet weather.

Land forming, I estimated that to be about 35 hours at $250 an hour for every 5,000 lamb feedlot module. These are the basics we looked at, at 2-4% slope per pen, contour banks and bungs, sedimentation ponds, general drainage, all weather access to the site and again for every 5,000 lamb module we'd increase and then drop 2.5% off the costing of land forming and the like as well depending on the scale of the feedlot that we were going to. Don't worry too much about all that information again that's in the actual in the report but that's just a summary of all the costs we're looking here at 5,000 head feedlot with its annual throughput, maximum throughput 43,000 lambs and the like so at your leisure you can go through and look at those different figures.

Prior to doing the actual report I thought it important that we looked at WA’s lamb and mutton prices, price variations and what I call relativities which I'll walk you through in a couple of minutes. If you look at this graph we're looking at the restocker/feeder lambs which we basically call store lambs in the eastern states, and the trade lamb values going back to 2010. Most of these graphs from here on in go for that seven year period; 2010 to 2017. You can just see what's happening here in the last 12 months; our blue line is actually the trade lamb average price and our restocker lambs, feeder-type lambs and they're actually crossing over and would be making more per kilo most times in the last six to twelve months.

That's the big issue when it comes to finishing lambs. Most people when asked the question what is your cost - major cost - when feedlotting will tell you your ration. It’s not; it's that starting price of the lamb. It's the main driver and main impact on profit.

This graph similar sort of thing, but this is averaged out over the year, what we're looking at here is your Merino lamb, which is that green line, you have our restocker lamb prices which is the blue line and our trade lamb prices here in WA the red line. What this graph shows, this is 2010 to 2017 again, this is just across the year but averaged out the annual variation highs and lows of those lamb category prices throughout the year.

If we just look at the Merino one at the moment, you're looking up here I'll just click on the next one, at the peak, if this is the average price across that 12-month period, Merino lambs are peaking around about this sort of June/July, that's when they really come into their own, the prices for 16 to 22 kilo Merino lambs and that on average is around 33% above the average across the year and then they drop right away during this spring period, really go down to you know under 50% so there's a huge range there.

If you look at your trade lambs, switch to the red line, we're looking at 11% peak down to a 17% drop in the sort of November, or your spring sort of period. So it's a 27, 28% difference in price depending on what time of year you sell. If you haven't got a contract you can look at that sort of price variation and say well ok when do I sell? This may not necessarily be the least profitable time for you to sell, particularly if they’re straight off mum but your prices, as you know, are going down this time of year. There's volume, there's numbers in the system.

When we look at the mutton job exactly the same sort of price pattern but a really big range in peak and troughs. We're looking at 20% when it peaked versus 12% here so a 32% difference in actual price from the top time of the year to when it bottoms out, and again it's all supply driven.

These are really good or really strong reasons why we should be changing, not so much the mutton job, but changing in the lamb job. Our time on lambing, and supply patterns. Same happens over the eastern states, we are swamped with lambs in the spring. Prices drop away. We normally have a bit of a peak come around about March and then our July sort of period is traditionally our high price time as well.

Okay the relativities; what I've done here is looked at the store lamb or your restocker/feeder lamb price, at point A, and then eight weeks later what you sold him for as a trade lamb using NLRS figures. Okay and then I've taken this price back and compared it to, on a percentage base, what the original lamb’s value was. Clear as mud? Basically coming from it the same thing again it's been happening in New South Wales, eastern states, for the last five to ten years - we get to this point here somewhere around 85% this relativity - relative value of the restocker lambs versus trade lamb, somewhere around 85%, if you are above that, well if the lamb prices are above that, the risk is really high that you're not going to do very well. Profit margins are likely to be fairly low if your starting lamb value is more than 85% of the finished lamb value.

So just to show what we've done again this is just a screenshot from the report, we've got our restocker/feeder lamb here at this period, eight weeks later that was the reported price for the saleyard system for the trade lamb, when we finished that lamb from the feedlot and put him into the market. What do we do then? So we got a 17 kilo carcase lamb is worth $90, 23 kilo trade lamb eight weeks later it's worth $139 - so that's $5.29 a kilo including skin value and $6.04 including skin value for the trade, you just divide that one by that one and that says 88% so that value of your restocker/feeder type lamb, divided by your finished lamb value, is the relativity. You do not just go $90 divided by $139, cos that comes out about 65%. This is the figure we want to look at, and if you’re 85% or above, most times your profit margins are going to be fairly low, okay, unless your starting price of the lamb is quite low.

Just to show you that it works in New South Wales as well, again this is that 85% relativity, our yellow line here is WA, the blue line is what's happening in New South Wales up to the end of last year. We were over here last year actually, doing some workshops with Jonathan and DAFWA and the like and I thought well WA your relativity is actually dropping away so the chances of making good dollars out of your lambs in WA was going to be pretty good. Didn't necessarily work out that way.

If we look at seasonal impacts for this relativity, so when do you buy? We've got summer, autumn, winter and spring. These are averaged over the seven-year period; there's that 85%. You can see that on average over the last seven years, your relativity’s been above that 85%. Summer’s not a bad time to buy, autumn’s not a bad time to do it but the winter’s not particularly good. Why? Winter time you're buying lambs, you're going to finish them and then put them into the spring market when the prices are dropping, so you've got older lambs going into the market, they're going to be starting to focus on your sucker lamb and so the actual relativities on average equal about 107% for that late winter sort of purchase period so we just don't look at it, so we only feedlot for eight to nine months of the year. It's only really profitable or potentially profitable for that period.

So the feedlot calculator that's just a snapshot, hopefully again here we'll have some time to actually run through it, when we open up and this is just an example that's the sort of information we need to put in. Any yellow cell was where we enter the information. That's the calculator that we developed. We had the five operational sizes; we have the capacity versus maximum throughput. Use 2017 averages for trade lamb prices, your restocker/feeder prices and a base price of 298 for your pellet ration and I will say when we looked at analysing and dropping the pellet price by 5 or 10% or increasing it 5 or 10% it didn't make a big impact on your actual margin at the other end. So we kept most of them at, most of the analysis when we did it at $298 a tonne, then all these other things your starter lamb price, your trade lamb price, we dropped by 5 or 10% in various sort of mixes if you like. I'll show you what I mean…

So we're here - the base price which again is the average price for 2017 when we did the analysis was $93.65 for your restocker/feeder so we also run analysis using 10% below that or 5% below that or starting price is actually 5 or 10% above that. Trade lamb; similar sort of thing, we either drop the prices and/or increase them and again the ration, as I said they're the sort of prices we could have used but it didn't make a big impact, not as big as your starter lamb value. That's in one of the appendixes, I don't expect you to see that that clearly I'm sorry for putting so much information up on the screen but that's a snapshot of profitability. Anything in red is a loss. Just looking at those blue ones and this first one here and I've used base so that's the $93 for your starter value, base meaning $133 for your finishing. The relativity was 95, under that scenario with $298 ration there was a fair bit of loss going on in every single feedlot situation - just with this we've got, so this column here is 5,000 lambs, that's all you finished in that feedlot for the year versus your maximum throughput 44,000, 10,000 maximum input, 20,000 and so on. It's not til we got down to, and you'll notice, it's these ones with the yellow cells, they're the ones that were below 85% or below for that relativity so that's all them there. It's not until we sort of got into that system that we started making dollars. Again that starting price of the lamb is the big killer. We were making fairly good dollars in this scenario here where the starter lamb price was 10% below and our finished lamb price was 10% above the average for 2017.

That's the main warning: margins are tight, they always have been, they always will be. There will be periods when you can make good dollars, okay, but you've got to do the figures. If you haven't got a contract you can at least look at these relativities and try and work out okay what do I need to make in six or eight weeks’ time.

This is just three scenarios, I'm not going to bore you with too many graphs after this, but if we look at the grey bars here we're looking at the restocker/feeder being 10% below and the trade lambs sorry ten cents above or 10% above. These light blue lines here is when we've got our base or average prices used at $93 and $133, and the dark blue lines is when your restocker lambs were ten percent above that and ten percent lower returns for your trade, so now it's only these sort of systems where that restocker price is lower than currently trading that you've actually got a fairly good chance of making that margin.

So the main thing from profitability, the relative value of that restocker/feeder lamb to the finished lamb product, that's the main driver of the whole thing. Throughput’s important - the more you put through, the less loss in most occasions but also the better efficiencies, we'll show you why in a second, also the timing of purchase and marketing of your finished product. Winter pretty well is out for grain finishing lambs. It's also affected to a lesser degree about things like feed prices, establishment cost in operational scale, so larger operations they're likely to return greater profits or lose less just because of economies of scale but the risk obviously is higher.

I just want to show you these two graphs this is from the same feedlot system, there’s 5,000 lambs versus maximum throughput from that 5,000 lamb facility, 43,000 lambs. What the calculator does is actually assigns a value to the lambs to cover depreciation on capital. When you're putting through more lambs, this is our fixed cost here or depreciation on capital we're trying to cover; it's about a dollar that you have to get from your lamb to actually pay for depreciation. When you're doing fewer numbers, that skyrockets. This is only for a 5,000 head facility - once the bigger facility’s there it can really add up very quickly.

So on a hot standard carcase weight basis to take a lamb from $93 restocker/feeder lamb through to a trade lamb, finished trade lamb, each additional kilo of carcase weight costs about $6.20. So what's that mean to you guys? You've got to make more than $6.20 a kilo to make it worth your while. I've been telling producers and most would agree in the eastern states in particular that you wouldn't bother feedlotting a lamb unless you're making about $8 or $10 minimum profit okay, so to do that, to make an $8 to $10 profit processors either have to be paying you an extra 40 to 50 cents above that or we want to see the starting price of the lambs dropped by a similar sort of amount which is not going to happen. We've got a situation - we've had a situation for at least the last five years where we've got a huge interest in finishing lambs but we've got a diminishing ewe base. We've got less lambs out there so it really is in demand and most people are actually better off setting up and selling lambs as store lambs or your restocker/feeder type lambs. Turn them off. Leave the ewes on farm to get fatter and give you more lambs next year.

If the season’s against you, and we're all facing that at the moment except Victoria by all accounts in Australia, the season’s against you, more often than not you're going to be better off selling those lambs to someone else. And I love the principle of feedlotting, you know, but it really comes down to the economics.

So what are the recommendations? Do a thorough cost-benefit analysis regardless of the size of the operation before you set up. Analyse your restocker/feeder patterns or relativities if you haven't got a contract price; we're lucky in the eastern states where last year they actually had contract prices out in the spring. We've never seen contract prices prior to that in the spring so they could see that there was going to be a problem with lamb supply last year so they stepped up, processors stepped up and put contracts out.

Maximize your lamb throughput regardless of the size of the operation, that's going to help with profitability a bit. Greater emphasis industry-wide - this is an industry issue - greater emphasis needs to be placed on modifying the lamb supply patterns, and minimize these price variations, and I know here in WA you’re very cereal-centric if you like, everything revolves around the cropping program, but for the life of me given how strong the sheep and lamb markets are and have been and it will continue I don't understand why we aren't seeing that real increase of people getting back into sheep. There's plenty of interest there, they tell us they're interested. I know seasonal conditions knock us around a fair bit but you look at actually returns, possible returns, from the sheep enterprise, I don't know why you're so centric around cropping. You might say it's too hard to actually do that but I just want to show you what's happened in New South Wales. If you look, this is a period 2000 to 2016, the red line here is Western Australian lamb prices and the annual variation, the blue line is the eastern states. So that's 2000 to 2016, at 2005 to 2016, that's the last five to seven years. New South Wales we've evened out a hell of a lot. Some of it's been driven by processors, some of it's been driven by climate change, where we had people changing lambing times and the like and I know we're not as focused in the eastern states as you are here with your cereal crops and the like but it can be done. Again if you look at your difference between your price peak and your price trough you're looking 30 odd percent difference in lamb prices between coming forward two months or so, we can make a huge difference. You need to look seriously at establishing producer finisher and/or processor alliances and a lot of this should be driven by processors. They need to be getting out there and getting producers together and saying okay we need these lambs, you supply the product that we want, you background these lambs - it's something else I'm getting to in a minute - but you give us the product that we need or that we can finish and get a decent sort of job out of, and they should be paying you for it.

Promote the benefits of an uptake of things like backgrounding or imprinting. They background in the beef job. Imprinting, there's plenty of good trial work to actually show that if you train that lamb while he's on his mum to recognise a grain or a pellet, he's got a lifetime acceptance of that, and there are specialist option plus markets now or sales now for finisher lambs where buyers are actually sourcing repeatedly from producers that can prove that their lambs have been trained to go onto grain and it's going to become more and more professional like that so I think we should do more of this imprinting, you're probably all doing it now anyway, with the way the seasons gone.

Promote the cost benefits of the store versus finisher lambs. As I said before most people on most occasions particularly if the seasons are against you, are better off selling store lambs. Let's get them off the place, let someone else buy them, someone else finish them and you leave more food for your mum, for the mum.

Promote the benefits of improved genetics and it's great that you guys are actually going to be running some more RamSelect workshops because we don't push it enough particularly in the Merino job and you’re again so Merino-centred here in the state. It's something I think you need to put more emphasis into as well. I just want to show you a couple of graphs that we use in Bred Well Fed Well or RamSelect workshops. That's actually work that was done in WA; that's the relationship there, on the x-axis here that’s the post weaning weight ASBV, Australian Sheep Breeding Value. The genetic potential for growth of those sires, these are groups of lambs from each of those sires, that is a very strong relationship. Those sires that are genetically better for growth rate, their lambs are genetically better for growth rate. That's with Merinos. Nick Linden, Victorian department of Ag, did some work looking at the interaction between this ASBV, post-weaning weight ASBV or potential for growth, and feed conversion, and the relationship’s probably not as strong as we'd like but there's definitely a relationship there. This is where we have increased value in the post weaning weight ASBV, so faster growing or potentially faster growing progeny from these sires, and feed conversion ratio or efficiency. More efficient lambs down this side. Surprise, surprise, you select on growth rate and the lambs are generally more efficient. It's a win-win, they grow faster, you get them off the place two or three weeks earlier, and they eat less. I think we need to focus more and more on that and that will happen as we become more professional nationally. Once electronic tags come in, and they're coming in, once they come in and we start using that sort of information it's going to be really powerful stuff. We're almost there.

Contractual backgrounding of lambs. I think processors, they’re certainly doing it anyway, but they need to look more into developing alliances with producers for contract finishing. If it's going to be a smaller scale type system, 3,000-5,000 head sort of feedlot, I'm quite comfortable with that being a producer owned and run system and they don't necessarily need to go into the infrastructure costs that I've done in the analysis because 90, 95% of my clients are just that. You know they’re capable of handling anywhere up to 3,000-5,000 lambs just using what they've got on farm. That could well be one way of going.

Small to medium scale producer-owned feedlotter alliances where you're actually starting to actually look at an alliance where you're supplying that producer or feedlotter with the right sort of product to finish in his feedlot and hopefully iron out some of these supply issues. A medium scale system’s 10,000-20,000 head feedlots, producer-run, with processors involved by coordinating lamb supply so they're responsible for the cost of bringing lambs in and buying the right product, and/or paying you a management fee to actually run that feedlot.

I think for the larger scale systems they really have to be a processor influenced or owned system. They’ve got to be responsible things like lamb supply, feedlot management and they take on all the operational or financial risk. Those sort of systems, we don't have a lot of big feedlot, lamb feedlot systems in Australia, very few above 10,000 lambs on feed anyway.

**Mandy:** Well I'd like to thank Geoff again and to join with me in thanking him for his presentation.

**Geoff:** Thank you.

# End of transcript