CHAPTER 6
Stock containment

This chapter outlines the principles and guidelines for setting up a containment area to manage and feed sheep intensively through droughts or other feed limited periods.

Key messages

- **Stock containment areas can be used to manage sheep intensively when paddock feed is limiting, protecting soil and pastures.**
- **Set-up and design need to consider soil type and slope, vehicle access, shade and shelter, water and feeding as well as mob sizes and numbers.**
- **Mob density in containment needs to at least meet minimum standards but sheep are generally run at lower densities (5–10 m²/sheep) to improve access to feed, water and shade. Very low densities may exacerbate dust problems depending on soil type.**
- **Sheep in containment require access to good-quality water at all times and require full maintenance feeding, including access to roughage, such as hay or straw.**
- **Calcium and possibly sodium need to be provided with high-grain diets. Calcium may need to be continued to pregnant and lambing ewes after release back into paddocks.**
- **The main issues experienced by growers in managing sheep in containment have been acidosis, shy feeders, dust and muddy yards when the season broke.**

Why use stock containment areas

A stock containment area is a carefully selected, fenced section of the property that is set up to intensively hold, feed and water livestock to protect soil and pasture resources during adverse seasons. This may be following a fire, during drought or late autumn breaks, or for other farm management activities.

Lot feeding for production, such as for finishing prime lambs, is a separate issue and is not covered in this chapter. If investigating this option seek specialist advice. Feedlots must meet local government planning requirements and the Australian Animal Welfare Standards and Guidelines for Sheep.

The value of feeding in stock containment areas may include:

- protection of vegetative cover on pastures or failed crops and to allow pastures to recover after the break
- reducing seed set of introduced weeds in purchased feed
- protection of areas vulnerable to erosion
- more control of stock
- easier or more localised management of stock feeding, watering, monitoring and handling.

Other benefits for containment areas outside of drought can include:

- holding stock when large areas need re-fencing (following a fire, flood or other emergency)
- faster pasture recovery after long summers or fire
- quarantine area for introduced stock
- holding stock prior to other management tasks.

Figure 6.1: About 50% groundcover. A paddock that has been grazed this low is prone to considerable topsoil losses through wind and water erosion.

Figure 6.2: About 70% groundcover. Bare patches are quite large and start to join up, creating opportunities for soil movement.

Figure 6.3: About 85% groundcover.

During a drought, or long dry summers, there is a high risk of losing valuable soil as pasture cover reduces. If pasture cover falls below about 70 per cent, wind will start to blow away soil particles, causing erosion and loss of valuable nutrients and topsoil. Bare areas will also be more prone to washing when the rain does come. Figures 6.1 to 6.3 provide a guide as to what a range of ground covers might look like in a perennial pasture. Even when stock have been removed, ground cover will continue to decrease as plants decay. This will accelerate with rain and wind, particularly in pastures dominated by annual species, so remove stock before critical ground cover targets have been reached.

Improved pastures that you have invested money and time in establishing can be lost if over-grazed and should be among the first paddocks to consider destocking.

Regular monitoring of stock and water is a full-time commitment. Animals need to be monitored for any signs of disease, as this can spread quickly in these conditions. Shy feeders or stock that are not coping with containment need to be identified and removed for feeding elsewhere.

Before moving stock into containment, ensure you have the key resources – cash flow, grain and roughage, water supply and commitment to fully manage stock over a realistic period before adequate pasture is available. In Victoria in 2006, farmers had sheep in containment generally for 3–5 months but for as long as 13 months.

It may be possible to release stock if you are away for an extended period of time, providing the appropriate care is taken, although farmers report that it was hard to get stock back into containment after short periods of release.

Site selection

Avoid locating the containment area adjacent to public roads (particularly high traffic) or close to property boundary fences. The yards should be set up as a permanent structure, like sheep yards, for future emergencies (drought, fire or flood) or other management opportunities.

The site should be accessible all year round.

The site should have:

- a moderate slope and a well-drained, stable soil such as a clay or clay loam
- ready access to existing handling infrastructure (yards, sheds) and water infrastructure
- no significant remnant vegetation
- shade, shelter and good drainage
- access to good-quality water
- minimal problems with noise and smell that will cause concern to you or your neighbours.

Containment areas should be constructed across the slope and aligned with the natural contour of the land to avoid yard-to-yard drainage. Siting adjacent to existing shelter belts or vegetation is advantageous to utilise existing shade – otherwise shade and shelter need to be provided another way.

Dust can be an issue so shelter from prevailing winds should be considered. Soil type is an important consideration to reduce dust. A stable soil such as clay or clay loam is best and will also compact during use. Choose a soil that will carry stock in all seasons.

Stock should be checked daily so It is advantageous if the site has ready access from the house. This makes for easier monitoring and will reduce the time involved. However, consider the location to minimise issues of noise and smell to you or your neighbours. Proximity to other stock-handling facilities can be an advantage. No more than 20 per cent of the site should contain remnant vegetation.

Consider water quality in terms of runoff. The stock containment area should be set back from watercourses and water storages by at least 200 metres. A nutrient filter should be established on the down slope side of the site to prevent runoff into farm water storages and watercourses if applicable.

Design

Good yard design and access will improve the ease of managing containment area.

Size

The **minimum** areas required for different classes of sheep under the Australian Animal Welfare Standards and Guidelines for Sheep in intensive feeding systems are:

Lambs (up to 41 kg) – 1 m^2 per head

Adult sheep – 1.3 m^2

Heavy wethers (CS 4 or greater) – 1.5 m^2

Ewes and lambs – 1.8 m^2

These densities are the minimum welfare guidelines and larger area per sheep is recommended. Heavier stocking may have the advantage of increasing soil compaction in the containment area to reduce dust but this is dependent on soil type. Allowing too much space may result in more dust, which can lead to issues including pinkeye and wool contamination. Stock density rates and mob sizes can also affect ease of access to feed and water by all stock. There is no one measure for ideal density rates. Densities of 5 m^2/head is a general guide that balances space allowance for feeding and access to feed and shade. Farmers who used stock containment in past droughts ran sheep successfully at average rates between 7 and 10 m^2, but with individual ranges of 2 to 17 m^2 per head. The lower densities were usually associated with larger sheep (e.g. crossbred ewes) or were run as sacrifice paddocks rather than stock containment areas.

Sacrifice paddocks are small paddocks, rather than yards and stock densities are lower. The high nutrient values contributed by sheep will contribute to pasture re-sowing costs after the drought. Feed can be fed in long trails directly on the ground to allow ease of access, but dust may be more of a problem and identifying and removing poor doers may be more difficult. This may be an option for lambing ewes if removing them from pastures is necessary.

Optimum mob size in containment depends on the size of the yards and the class of stock. Larger mob sizes can be more difficult to manage and to identify and remove sick or poor performing animals. Small mob sizes will be easier to manage but will require more infrastructure and associated costs. The yard should be large enough to turn a vehicle around in.

If you are considering containing more than one group, you will need good subdivisional fencing as well as boundary fencing. Having several yards allows for sheep to be separated according to class, age or condition.

Figure 6.4: Sheep in a sacrifice paddock/ containment area in south-west Victoria, June 2005, stocked at 12 m²/head. Source David Rendell, Livestock Logic

Layout

In designing the containment area, consider your management and operations, including:

- number and sizes of yards
- feeding system – separate or within the main yards, feed method and type (e.g. side fill)
- access to roughage and grain
- water access
- ease of cleaning troughs
- ease of removing or treating stock that are under-performing.

Having a separate yard for grain feeding troughs can be an advantage as this will allow mixing of feeds and additives (if required) before stock can eat and provide easier access with vehicles. However, many farmers have fed successfully while sheep are in pens, either filling troughs from outside (side fill) or allowing vehicle access entry and exit. Provide adequate subdivision to enable separation of different classes of stock, including shy feeders or sick animals.

A number of different layouts and shapes have been used successfully, including yards with adjacent laneways for feeding and stock movement as shown in Figure 6.5.

Shade and shelter

There is no simple guideline for the amount of shade and shelter that should be provided to sheep in a containment area, except that it should be provided to reduce the impacts of adverse weather.

There is a wide variation in shade use by sheep as some animals in a flock can consistently use shade three or four times as much as others. Sheep with long wool are less sensitive to solar heating than newly shorn animals. Stage of production (reflecting different metabolic load) may also play a role, with ram lambs having a lower heat stress threshold than adult rams and wethers. Different breeds can also have varying tolerances to both heat and chill.

Shade structures should not impede the drying of the yard surface or ventilation beneath the structure. Shade cloth, stacked hay bales (secured and fenced), trees, galvanised sheeting or old hay sheds are all options that have been used.

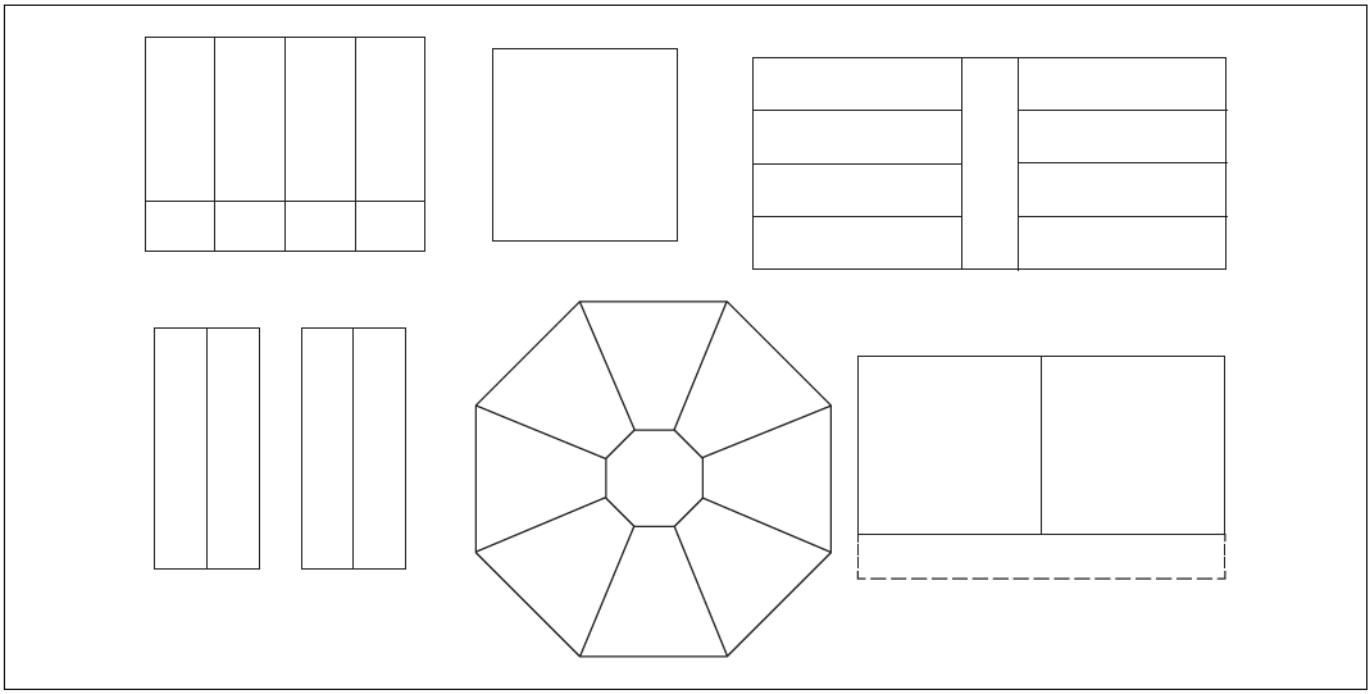

Figure 6.5: SCA design suggestions.

Consider prevailing winds and locate shade in the western half of the pen – angle shade structures to the north-west to maximise the shade provided during the hottest part of the day.

Any existing trees in the containment yard/s should be fenced (using the same standard of fencing as the boundary fences) at least 1 metre around the tree. This will prevent animals ringbarking the trees and reduce the impacts of compaction. Established trees are very valuable in providing shade so you don't want to lose them.

Access and safety

Ensure that a vehicle can access the yards (when stock are absent) to allow for cleaning and maintenance. Also consider stock access and ease of moving stock in and out of containment from paddocks or into feeding laneways.

Personal safety is of the utmost importance. Consider design and construction of facilities to minimise the risk of injury.

Construction

Containment yards should be constructed as permanent long-term facilities. The use of seven horizontal wires and a plain top and bottom wire is recommended. Fences should not contain any barbed wire. Posts should be no more than 5 metres apart and strainers should be stayed. The use of metal or concrete strainers and posts is recommended due to fire resistance and longevity. Keep in mind that stock may push up against fencing or run into it, so ensure it is constructed to withstand this treatment.

Water

A good, reliable water supply is essential in stock containment areas. Generally, stock will be fed diets very low in water content and so must be supplied with water at all times.

Water should be low in salt, low in organic matter, low in suspended clay and free of other toxic substances such as blue-green algae. Refer to Chapter 5 – Water during a drought, for more information on water quantity and quality requirements.

Water supply

The source of water may be a dam, creek, channel or bore. It is most important that the quantity and quality of the water is properly checked before siting the stock containment area. Farm dams lose a significant amount of water through evaporation over summer. When estimating the quantity of water needed in storage refer to Chapter 5 – Water during a drought, to allow for estimations of evaporation, seepage and stock needs. In the case of bores, the yield should be checked to ensure it is capable of providing the daily demand over the peak summer period.

Assuming a fairly normal autumn break, the water supply should be designed to last until at least June of the following year.

Reticulation scheme layout

The ideal scheme is to pump from a dam, creek or bore into an elevated tank close to the containment area and then supply the troughs by gravity. Continuous pumping is then not required. Pumping may only be required every few days if the tank can hold enough water. An alternative system is to use a pressure unit, pumping direct to the troughs, with a gravity standby supply tank holding at least two days' supply. This standby tank should be connected in such a manner that it is kept full by the pressure unit and automatically provides back-up supply to the troughs if the pump fails.

If a gravity tank is not incorporated and a pressure unit is used to pump direct to the troughs, a backup pump is vital to maintain water supply if the first pump fails. Another advantage of the gravity-type scheme is the possible utilisation of cheaper night rate power if electric pumping is intended.

Night rate pumping

If an electric pump is proposed, consider utilising cheaper night rate power. A storage tank holding 3-4 days' supply should be used. Site a pressure unit at the water source, connected to night rate power. Use an automatic time switch to turn the pump on at 11 pm to fill the storage tank. A pressure switch would switch off the pump when the tank is full and the float valve on the tank shuts. The night rate pumping period generally operates from 11 pm until 7 am and the design flow rate should deliver the daily requirement within this 8-hour period. In any system like this it is advisable to have a manual over-ride so the pump can be switched to day rate and operated at any time if necessary.

Trough design and layout

Water trough allowance does not need to be more than required in a paddock as sheep will adjust and take turns to drink at the trough. Trough space is less important than flow rate.

Troughs need to be cleaned every couple of days - more often for younger stock. As a result, trough design needs to allow for easy cleaning. Troughs should be located as far away from the feed supply as possible, to prevent water contamination.

Design flow rates

A tank-to-trough water system should be able to deliver the total maximum daily requirement within 4 hours. It is critical that water can enter the trough at a minimum flow rate of 21 litres/minute for sheep and 42 litres/minute for cattle. A higher flow rate is required for lactating animals.

Example: A gravity supply tank to hold two day's supply for 500 dry sheep would need to hold 10,000 litres, i.e. 500 sheep x 10 litres x 2 days = 10,000 litres.

A reticulation scheme to supply 500 dry sheep, with a tank holding two day's supply would need to be capable of a flow rate of 21 litres per minute, i.e. (500 sheep x 10 litres) / (4 hours x 60 minutes) = 20.8 litres/minute.

When budgeting on a water allowance plan for average daily consumption of 4 litres/head/day, however this can change dramatically with the weather. On very hot days, intake will be greatly increased so you need to be able to supply up to 10 litres/head/day. Sheep will increase their water intake on hot days and if the water is hot. Deeper troughs will stay cooler and avoid running water to troughs though above-ground poly pipe as this can lead to extreme temperatures. The volume of water stored in the water source (e.g. supply tank) should be sufficient to meet containment area usage between pumping intervals plus reserves in case of leaks. Contingency plans for the emergency supply of water should be made in case of pump breakdowns, major leaks or storage failure.

Feed

Animals in containment need to be provided with 100 per cent of their diet, including energy, protein, mineral and roughage requirements. It is critical that these requirements are met for each class of stock. Full rations for different classes of stock are outlined in Chapter 3 – What to feed sheep. Confining stock so that they do not need to walk around in search of feed can reduce feed requirements (depending on the size and slope of paddocks) but as sheep usually manage to obtain some feed from even seemingly bare paddocks, the containment ration may be higher. Animals need to be monitored daily for condition and poor performers should be removed.

Including straw or hay roughage in the diet will reduce death rates and also the number of poor doers and can be provided on days when grain is not being fed. It does not have to be good quality hay, and the best hay should be saved for when stock need to be fed higher rates quickly. One survey reported better survival rates with straw than hay. The suggested interpretation for this is that sheep on the hay substituted some of the higher value grain with the hay, but utilised the straw as a roughage supplement.

Allow 15–20 metres of double-sided trough for 100 sheep. Use longer troughs for large or full-woolled sheep. Feed troughs can be bought or made cheaply from materials such as roof capping, folded roofing iron and suspended shade cloth. Troughs or feeders should be on the opposite side of the yard to water troughs to minimise the contamination of the water source from food carried in the animals' mouths.

Farmers have used various designs for grain troughs that are easy to fill, clean and allow easy access for feeding, as well as feeding directly onto the ground. Lick feeders and self-feeders can be installed in the yard, but consider putting them on the boundary to enable filling from outside. If possible, avoid driving into the yard while sheep are present. If using a feeding laneway, iron, purlins, raised feeders, rubber or raised shade cloth troughs are options. Feeding directly onto the ground has been used with success and may allow more access to grain if trough space is limited, but may increase the risk of disease pick up and spread. Refer to Chapters 3 – What to feed sheep and 4 – Feeding sheep – How much and how often for information on rations, requirements and feeding management.

Management

Adult sheep are the easiest to manage in containment. Containing ewes and lambs should be avoided if possible. Adult sheep, weaners and hoggets should be yarded separately. Sheep should be vaccinated against enterotoxaemia (pulpy kidney) with a clostridial vaccine such as a 5-in–1 or 6-in-1. They should be drenched into the area and worm tested regularly.

It is preferable to start sheep on grain in the paddock for 2 weeks before introducing them to a containment situation. If you can't do this, make sure that most of the diet in the first 2 weeks of containment is hay and then increase the grain ration gradually. Start at 50 g/head/day grain and make up the rest with hay building up to the desired ration over 2 weeks. Feed hay before grain and use the best hay first whilst the animals are adjusting to the ration. This ensures they don't lose condition. Once adapted to the full grain ration poorer quality hay or straw may be used. Start off feeding daily for the first 2 weeks and then cut down to 2–3 times a week. You can then feed hay one day and grain the next.

Rations provided in Chapter 3 – What to feed sheep and 4 – Feeding sheep – How much and how often are guides and the amount can vary with breed and size of sheep and your production level (e.g. condition score and lambing rates) so sheep should be monitored to fine tune these rates. Overfeeding is expensive and underfeeding will lead to weight loss that is difficult to regain.

There will always be a number of sheep that do not adapt to containment and they should be identified regularly and removed to pasture or smaller yards, or sold. These sheep should receive additional feeding with good-quality hay, together with cut back grain-based rations that are then built up slowly, as they will most likely not have adapted to the containment ration and may not have fed well previously (e.g. shy feeders).

In cold, wet and windy weather, increase the feed by 20 per cent, or up to 100% more for recently shorn sheep, preferably by feeding more good-quality hay or safer grains like oats and lupins. If extra hay is not available, give one extra feed during the week. Replace any feed wasted as a result of rain damage with new feed.

Animal health

Feedback from producers who have contained sheep for a range of time periods, has generally reported low mortality rates at less than 2%. Death rates tended to increase with time spent in containment. Acidosis was the most common disease associated with stock containment, followed by shy feeders. Diseases like flystrike and pink eye need to be identified quickly. Refer to Chapter 7 – Sheep diseases associated with drought for more detailed information on diseases specific to droughts and grain-fed sheep – diagnosis, treatment and prevention.

Avoiding stress such as boggy ground, overcrowding, dust and irregular feeding will help reduce diseases such as salmonellosis and pneumonia. Regular cleaning of feed and water troughs will also help prevent diseases. Ensuring diets meet the requirements of adult sheep for healthy maintenance of condition score and for growth in weaners will also make animals more robust and resistance to these disease challenges.

Releasing sheep

When the break does come and pastures in the paddocks have recovered, the change in feed from containment feeding to pastures can be quite sudden and may cause digestive problems. Release sheep from the containment area gradually, ensure they have a full stomach and continue to feed hay and grain for a few days. One strategy is to feed hay in the morning and release the animals for a short while in the evening while they have a full stomach so that they don't gorge on lush pastures. This can be repeated over several days until their digestive systems have had time to adjust. Alternatively, continue to make hay available in the paddock.

Ewes that are lambing may need the full ration for a few weeks.

There have been reported cases of hypocalcaemia in late pregnant ewes, despite being fed sufficient limestone over the intensive grain feeding period. Continuing to supply calcium as limestone in the paddock to heavily pregnant/early lambing ewes may reduce this risk (Chapter 7 – Sheep diseases associated with drought).

Farmer tips from past droughts

Farmers who contained stock in previous droughts believed it to be a worthwhile exercise, and it is now part of their future drought management strategies. However, managing a stock containment area involves a transition from a broadacre manager to an intensive manager. All feed and water is supplied by you. It requires constant vigilance and good management. However, it also means you can have better control over weight loss and gain and come out of a drought with valuable land assets and stock numbers intact.

Four surveys of farmers in south-eastern Australia who used stock containment in 2002 and 2006 reported observations including:

- Merinos were contained for longer than crossbreds and cattle for less time than sheep.
- Consensus was that acidosis followed by 'shy feeders' were the main causes of mortality and disease.
- Generally, feeding roughage reduced mortality and/or incidence of shy feeders.
- Reducing death rates from acidosis includes training animals onto grain carefully, including roughage and taking care with diet changes (including releasing onto pastures)
- Shy feeders must be removed from containment areas regularly and this needs to be more frequent as mob size increases.
- Dust was reported as a major issue and mud caused problems in 2006.
- Containment was hard on stock confined for long periods and it was difficult to get sheep back in if they were released briefly.

Suggestions for what some farmers would do differently next time included:

- increase feed before release
- reduce stock density
- protect trees
- not keep them in for as long; feed problems worsened after time
- have a buffer silo to counteract problems with delays in getting loads of grain
- have small paddocks for when pens get very muddy
- make feeding area larger
- five pens and four mobs that were fed in the empty yard worked well, but wide gates were needed as they rushed to feed
- 15 cm of double-sided trough was insufficient
- do a lot of planting to increase shade and reduce wind exposure, introduce tyres/logs, etc, to entertain stock, also reduce rubbing.

Further information

Resources and tools

- www.agriculture.vic.gov.au/drought
- Drought resources across states: www.wool.com/on-farm-research-and-development/sheep-health-welfare-and-productivity/sheep-nutrition/awi-drought-resources/
- Managing Sheep in Droughtlots – a best practice Guide: www.wool.com/globalassets/start/on-farm-research-and-development/sheep-health-welfare-and-productivity/sheep-nutrition/awi-drought-resources/gd0458_managing-sheep-in-droughtlots.pdf
- Department of Primary Industries (Vic) (2007) Code of accepted farming practice for the welfare of Sheep (Victoria) (Revision number 2)

Scientific publications

Ashton B (2007) *Farmer experiences – What was learnt by sheep and cattle managers in the 2006 drought*.

Savage, D.B., Nolan, J.V., Godwin, I.R., Mayer, D.G., Aoetpah, A., Nguyen, T., Baillie, N.D., Rheinberger, T.E. and Lawlor, C., 2008. Water and feed intake responses of sheep to drinking water temperature in hot conditions. *Australian Journal of Experimental Agriculture*, **48**(7), pp.1044-1047.

CASE STUDY
Jim Younghusband, Inglewood

Jim Younghusband is all for stock containment areas (SCAs). The four SCAs on his Inglewood district farm have proven to be perfect for all-purpose, all-season and all-weather use.

Located next door to the shearing shed and the stock yards, the SCAs are used regularly during shearing and crutching, before sheep are loaded for market and as an adjustment paddock for any new rams. If it wasn't a closed flock, they would also make an ideal quarantine yard.

"The sites were convenient, with shelter and shade, water and the nearby shearing shed and yards," he said.

Jim finds the optimum stocking rate for his SCAs is 3-5 m^2 per head and generally keeps containment mobs to around 300.

"Before we started using SCAs, the place was like a dust bowl in summer. Sheep walked around the paddock and it powdered off."

Jim's farm mix is about 85-90 per cent sheep and the rest cropping. The self-replacing 18-19 micron Merino ewes are joined either to Merinos or White Suffolk rams, with crossbreds lambing from mid-April and the straight Merinos a month later.

Over the past 10 years Jim has developed and refined a system to include SCA in his farm management.

"If the year has not been flash I start thinking in December about what I am going to do. If you are starting to think it is time for them to be in containment, you probably should have done it a month earlier."

Shearing is in early October and lambs are weaned, cull ewes disposed of and White Suffolk rams put in with the ewes before any sheep move into containment.

With straight Merino joining in December, the rams have at times been with ewes in the containment areas.

Farm information

Producer: Jim Younghusband

Location: Powlett

Property size: 930 hectares

Annual Rainfall: 300-350 mm

Enterprise: Prime lambs and wool from Merinos and White Suffolk breeds

Entering containment

Jim said the sheep must start on a good footing so their condition can be maintained over the containment period.

"You put them into containment in good condition and keep them going. It is much easier to keep something in good condition than to have to improve condition during a dry year," he said

All sheep are drenched and vaccinated before going into containment and Jim estimates it takes 7-10 days for the stock to get accustomed to the new environment.

Sheep in containment.

CASE STUDY Jim Younghusband, Inglewood

Feeding and water

Straw and grain are fed in the early weeks, with a mix of straw and hay later into the pregnancy. The grain ration is generally barley grown on the farm fed into a 7 m long piece of steel purlin sitting on the ground in a laneway adjacent to the SCA.

"I drive the grain trailer over the top (filling the purlin) and then open up the gate for one yard and let the sheep in," Jim said. This is done every second day, with 400 kg of grain feeding 300 sheep.

Water comes in a pipeline from the Loddon River and Jim also has a bore that services about seven paddocks on the farm.

Jim keeps a close eye on the water quality. Dust and hay on the surface of the tough can discourage sheep from drinking, so he regularly skims this off rather than emptying the whole trough and potentially wasting water.

Wind direction is a key consideration when delivering a new bale of hay and straw, to avoid too much debris ending up in the water troughs.

Animal health

His decade working with containment has taught Jim the value of keen observation.

"I get a bit paranoid about having 1,200 sheep locked up and first thing every day I just come out and stand and look at them."

This helps him identify shy feeders or other issues and any early signs of illness, which increases in risk after 6-8 weeks of containment.

His keen eye has helped reduce such risks but one year some very healthy ewes, who were heavy in lamb, suddenly took ill. He called in an Agriculture Victoria vet, who identified the problem as a Vitamin B1 deficiency – a common complication of containment. The worst-affected sheep were injected and the rest of the mob drenched with Vitamin B1.

Behaviour

Jim has also gained some insights into the body language of his flock and the vast differences between breeds.

He said crossbreds had a very healthy appetite and a small space with lots of food was sheer paradise for them. But for Merinos it is a different story.

Steel purlin in adjacent laneway used for feeding grain.

"Merinos like to fossick about the paddock. A SCA is a confined space and it doesn't suit their nature as much."

He will never forget what happened when the two breeds were put in the one SCA.

"The crossbreds bossed them around and the Merinos sulked. I won't ever box them up together again."

Learning

"You learn from your own mistakes and if you don't there is something wrong. My biggest learning is you must drench and vaccinate before putting them in, and preferably put sheep in with the minimum amount of wool on them. If you don't, their fleece gets full of dirt and you are wasting all the feed on wool," he says.

"It is important to have shade and shelter but you also have to allow the air to flow through the area. And think carefully where you put the containment yards. Can it be connected to your sheep yards (and serve several purposes)?"

Trees in his containment areas have been protected by several old gates that were around the farm and one fence has been sheltered with several old bales of straw.

CASE STUDY

Ben and Jodie Greene, Elmhurst

Ben and wife Jodie live at 'Millbanks', near Elmhurst, in the upper catchment of the Wimmera River in the Pyrenees ranges. The diverse farm has steep hills, intermediate rises, undulating land and river flats.

The Greenes run a self-replacing Merino flock for meat and wool, grow out Friesian bulls and run Friesian steers on an adjacent property.

Ben's father constructed purpose-built stock containment areas (SCAs) in the early 1990s that were used to feed sheep in the 1994 drought.

The SCAs also proved pivotal in feeding sheep during the drought years of 2002, 2006, 2007, 2008 and 2016.

Ben said the hardest thing was making the actual decision to lock up sheep.

"Once that is all done and dusted then it is relatively easy to manage," he said.

Feeding

Ben said it was important to do your numbers before putting stock in containment.

"We do a quick feed budget when heading into drought and work out what we need to feed the sheep until 30 June. Feed budgeting and money budgeting are the two big ticket items in drought planning.

"You have to draw a line in the sand and say 'this is what we are up against'. Then you can work out if you have enough feed on hand, and when you may have to buy some in and how much."

Sheep are fed 1-2 kg/head of straw for roughage and about 4.5 kg/head of grain per week. This usually involves grain being fed on Monday, Wednesday and Friday.

"Feeding can generally be done within 2-3 hours in the morning. This is a huge time saver because we don't have to drive over the farm delivering feed to multiple paddocks. Grain is stored within 200 m of the SCAs and the sheep yards are there as well."

Farm information

Producer: Ben and Jodie Greene

Location: 'Millbanks', Elmhurst

Property size: 1,300 ha

Annual Rainfall: 600 mm

Soils: Sandy loams, heavy river flats

Enterprise: limited cropping of 100-200 ha triticale for feed; self-replacing Merino ewe flock; bought-in Friesian bulls and steers.

Grain consists of wheat and triticale grown on the farm. Lime is added to the grain for calcium but Ben has calculated that the sheep get adequate salt from the water supply.

Ben says it is important to carefully watch sheep while in containment. "A change in grain can upset them," he says, citing an example of a mob developing acidosis when introduced to a different batch of grain.

Shy feeders are removed from containment weekly as they are identified and are typically turned back out into the paddock. They respond well to being fed without the competition.

After three months off green feed, Vitamin E deficiency can be a problem. It is identified when otherwise healthy sheep are unable to rise. Sheep in containment for more than three months are drenched with Vitamin E to prevent this condition.

CASE STUDY Ben and Jodie Greene, Elmhurst

Water

While feeding is a major consideration, the other huge benefit of containment is having one water point. "A big reason for containment on our farm has been to manage, develop and refine a system to avoid carting water."

If reliable stock water is a challenge, having one watering point saves time and effort. Keeping sheep off vulnerable paddocks also preserves the pasture base and prevents soil erosion.

Millbanks' dams, springs and wells all dried up in the 2006-07 drought. Since then, Ben and Jodie have sunk deeper bores and consolidated many smaller dams into one larger, deeper dam. They then started reticulating water around the farm. To date, 70 per cent of the property has piped water and the process of combining dams to larger, low evaporation storages, continues.

While reticulation requires more labour (cleaning and checking troughs), it has reduced the problems of stock getting stuck in muddy dams and large losses of water to evaporation.

Multi-purpose

Drought has been an important time to use the stock containment yards, but it is certainly not the only use.

With steep hills that must retain ground cover over drier times of the year, the containment areas provide an excellent place to feed sheep when the hills may be vulnerable if stocked.

"Stock containment areas help you manage your ground cover (on these hills) and preserve the asset of your pasture base. There is great winter and spring feed available on that hill country," Ben says.

The areas are also ideal holding paddocks for times including shearing, drenching, crutching and for quarantining brought-in stock.

Containment yards and adjacent lane way.

Environmental benefits

The Greenes have honed their feeding and water conservation skills, improved their understanding of sheep health in containment and seen many advantages that stretch way beyond Millbanks' boundary.

The summers are not as dusty, the Wimmera River is not at risk of silting from soil off the hills and the land is more productive.

"I see containment areas as benefitting the whole community and not just us. The last thing I want to do is damage the river," Ben said.

"Containment benefits the community because soils and water quality are protected."

CASE STUDY

Matthew Ipsen, Wareek

The Ipsen family have been using the five stock containment areas (SCAs) on their Central Victorian property since 2007.

The areas, located near the stock yards, were home to the family's 2,000 breeding ewes for six months in 2015. They are also used during shearing and at other times during the year.

"We are constantly using them. Their versatility is amazing and I don't think enough people realise what they could have," Matthew said.

Matthew said that, with good laneways on the property, it only takes a few minutes to move the ewes and lambs into the yards.

The five SCAs can hold 2,500 sheep and Matthew and Robert see them as a vital piece of farm infrastructure in drought, fire and even flood. "When you lose fencing, you have somewhere secure to put stock."

Site selection

Matthew said it was important to select a suitable site on higher ground with stable soil. The Ipsens reinforced the soil in their yards with 1,000 cubic metres of blue metal to further stabilise the soil and prevent erosion. They also chose a location adjacent to some existing trees to provide shade.

Matthew and Robert were keen to ensure that nutrients did not run off into the nearby Bet Bet Creek. A minimum distance of 200 metres was set and they always try to maintain good groundcover in the paddock below the yards to filter the runoff from the SCAs.

Proximity to other infrastructure was also important. The Ipsens' SCAs are adjacent to the existing shearing shed and sheep yards. They have often used the SCAs during other activities, including shearing.

Farm information

Producer: Robert, Barbara and Matthew Ipsen

Location: Wareek (near Maryborough)

Property size: 1060 ha

Annual Rainfall: 500 mm

Soils: Sandy-Clay

Enterprise: Cereal cropping; self-replacing Merino ewe flock

Sheep in containment .

CASE STUDY Matthew Ipsen, Wareek

Water

The Ipsens' farm has a reliable bore close to the SCA, with another on a nearby property connected to the same pipeline. Their airwell pump provides water directly to the troughs in the yards and they can change the direction it pulls from if they need to get water from the alternative bore.

Robert tests the water regularly for salt content. Mathew said they planned to install a tank nearby to gravity feed the troughs so they don't have to rely on the pump in power failures. The 600 litre concrete water troughs are cleaned out regularly.

Design and feeding

Each SCA is about 50 x 50 metres in size and contains 500 sheep. Four of the containment yards have an adjacent laneway. A feed trough running the full length of the laneway was constructed using shade cloth and wire. Matthew said this had been an effective way of feeding grain – he drives alongside the 'trough' with the grain feeder dispensing a pre-calculated and measured amount of feed. Then he opens the gate to one SCA and the sheep come out to feed.

When they have eaten, the sheep walk themselves back into their yard, and a short while later Matthew comes back and repeats the process with another yard. This process repeats for the other two yards in the afternoon.

During containment Matthew calculates the feed ration based on the daily nutritional requirements for each class of sheep. Grain is provided on the first two days of a three-day rotation and hay and straw is provided on the third day.

The fifth SCA is adjacent to the shearing shed and yards with separate laneway access to the other four SCAs.

The feeding laneway and grain trough.

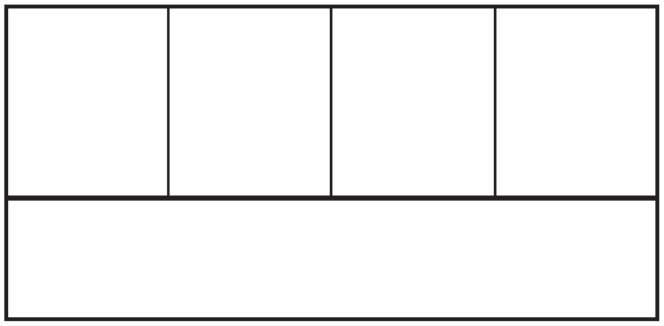

Figure 1: The Ipsens' SCA design with the feeding laneway running full length of the four SCAs.

Disease management

"The commitment of feeding sheep every day for sometimes up to six months can be daunting and exhausting," Matthew said.

"People should also be aware that containment yards can increase the risk of a disease spreading. With any intensive livestock system, the risk of spreading an infection or disease increases due to the close proximity of the animals.

"It is mentally challenging when you come and check on the stock and find a dead animal. This is on top of a poor season and having to feed out for months on end.

"The key to managing disease and infection is getting it diagnosed early," Matthew said.

The Ipsens use their containment yards most years to allow their pastures to recover and build up a feed wedge prior to lambing in August. "It is such an important part of our system now but we are learning all the time," Matthew said.