

INNOVATION PROFILE



BUSINESS SNAPSHOT

OWNERS

Daniel, Jeff, Lincoln and Chris Evans

PROPERTY NAME

Evandown

PROPERTY LOCATION

Wunkar, SA

SIZE OF PROPERTY

8,000 hectares

BRIEF ENTERPRISE DESCRIPTION

Merino sheep and cropping

NUMBER OF PEOPLE WORKING IN THE BUSINESS

3 full time equivalents plus casuals

AVERAGE ANNUAL RAINFALL

250mm

WHY THIS IS A PASTORAL ZONE INNOVATION

Once empty, most farm chemical shuttles are surplus to requirement and commonly sit wasting away. This is a simple, cost effective way to supply hay or straw to livestock whilst minimising wastage.



Chemical Shuttle Hay Feeder

Daniel, Jeff, Lincoln and Chris Evans run a property near Wunkar in the South Australian Mallee. They crop around 3,000 hectares and run their Merino sheep enterprise over the remaining 5,000 hectares.

The Mallee is a low rainfall area, and therefore requires businesses to be resilient, patient and innovative to remain profitable and productive.

The Evans' low rainfall environment breeds innovation; innovation to stay ahead and adapt. The Evans' family is handy with a welder, thrifty and tirelessly looking for a way to perform a task that can be done quicker, safer and more cost effectively.

This innovation profile demonstrates that a 'waste' item can be utilised on a farm very effectively. The chemical shuttle hay feeder has been in use on the Evans' lamb feedlot yards and they have so far been very impressed with it. They have made two prototypes, trialling different formats. They are now looking at its usage elsewhere on the farm to aid the supplementary feeding process.

Figure 1: Prototype 1 Shuttle feeder.



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WHAT WAS THE MOTIVATION TO CHANGE?

Chemical shuttles commonly don't have a deposit incentive to return them anymore, meaning many lie around rural properties, rusting away, and they never get used beyond their intended purpose. This didn't fit well with the Evans' mentality of being able to recycle and use objects on the farm at a fraction of the cost of buying something new.

They needed a way to feed livestock in their lamb feedlot, where hay could be deposited easily and effectively contain the feed, as well as minimising wastage by stock. Ideally this would be something that could be easily moved around or removed from the yards by hand when empty or handled with a forklift.

The Evans' family decided a very slightly modified chemical shuttle may be of use to them. It was light and easy to manage by hand, sturdy and the perfect size to fit a bale of hay and allow the stock to easily access the feed. Above all, it recycled something that was previously of little use and taking up valuable space around the farm yard.

HOW DOES THE INNOVATION WORK?

This innovation requires little in the way of work to achieve the outcome! Firstly, the plastic chemical container is removed from the metal 'cage'. The chemical shuttle's metal base is kept to add stability. One or two of the bottom metal rails are removed by breaking the weld with a hammer to allow stock access to the feed. The corners are then cut on all sides, and the sides opened outwards slightly, much like an inverted pyramid. Metal spacers are then welded on to each of the remaining lateral rails to keep the shape.

A 44 gallon drum is cut in half lengthways and placed on the base of the shuttle to help spread the feed evenly to the sides.

The result is a functional hay feeder where the only real investment is one and half hours of your time!

KEY FEATURES

The key features of this hay feeder are:

- It's made of metal and is durable.
- The 44 gallon drum distributes feed evenly.
- It is light and can be moved by hand or with a forklift.
- Is made from a used chemical shuttle.

Figure 2: Used chemical shuttles.

Figure 3: Shuttle feeder finished prototype.





Figure 4: Prototype 1 on the left, prototype 2 on the right.

WHAT ARE THE KEY BENEFITS?

The Evans have observed the following benefits since the implementation of these hay feeders:

- It uses something that otherwise goes to waste.
- Is easy to move (either by hand or by a frontend loader)
- Feed wastage is reduced as sheep cannot drag hay out and trample it.
- It is extremely quick to build.
- It can be placed strategically across the property to aid supplementary feeding.

Figure 5: Shuttle feeder detailed corner view.



KEY RESOURCES REQUIRED FOR THE INNOVATION

The key materials needed to complete this innovation are:

- An empty chemical shuttle.
- Half a 44 gallon drum.
- A hammer to break the weld from lower lateral rails.
- Metal strips to weld as spacers.
- A welder.

POTENTIAL CAUTION AND RISK

Daniel Evans suggests making sure that the 44 gallon drum and chemical shuttle are both clean of flammable contents before cutting into them.

When building the feeder, sharp edges of the metal spacer strips and the shuttle itself should be minimised where possible. This will reduce the risk of injury to those handling it and to livestock.

WHAT COULD BE DONE DIFFERENTLY NEXT TIME?

The Evans initially built two prototypes. The first was kept in the standard chemical shuttle form (vertical bars) up to half way and then opened up to allow the loading of hay. They then trialed the second prototype with the chemical shuttle opened up from the base to the top and this was found to be a far more effective design.

LOOKING FORWARD

The Evans are keen to build more hay feeders and use them around the property at strategic locations. They are investigating ways in which hay can be loaded into them from a ute or trailer easily. This may involve leaning the shuttle and rolling the hay into it, although they realise it will need a way of stabilising it to stop it rolling too far the other way.

COST BENEFIT ANALYSIS

The only real cost of this endeavor is the time it takes to build it. The chemical shuttle is a cost attributed to the enterprise in chemical costs. New hay feeders may cost several hundred dollars to buy and may not be as manageable or as effective as this.

Not all will have a chemical shuttle available. To obtain one, it is always worth asking a fellow farmer who may be likely to have one you could use or ask your rural supplies merchant.

THE FINAL WORD

“The feed is being used by the animals and not wasted as it’s all contained with the feeder effectively.”

Bestprac acknowledges the contribution of Daniel Evans in the development of this innovation profile.

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Figure 6: Prototype 1 Shuttle feeder.