



**The Scheuerle Family**  
Kulpi  
Queensland  
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**Local climate**  
BOM Historical Data – Oakey

Mean Monthly Max Temp °C  
(Dec - Feb)  
**30.1 – 30.3**

Mean no of days/year above 35°C  
**11**

Mean no of days/year above 35°C  
**0.3**

Mean daily solar exposure  
**19.4 Mj/m<sup>2</sup>**

Mean annual rainfall  
**622mm**  
*Higher in Summer*

Av Max Monthly 9:00am Relative Humidity%  
**74 – 79%**  
*May – July*



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## COMPOST PACK BEDDING COW SHELTERS

# Compost barn with open outside feed alley and dry lot



*The Scheuerle farm was visited on Tuesday 17th April 2018, and the the case study below is a summary of Chris’s interview and observations made during the site visit.*

## Background

The Scheuerle family farm is at Kulpi, on the Darling Downs in Queensland. They milk approximately 300 cows, using full TMR. The feed is based on sorghum silage and winter crop hay.

## Reason to build the shelter

To give the herd, especially the fresh cows, shelter from the heat in summer, shelter from occasional extreme wet conditions, reduce feed waste, reduce energy loss from walking and provide better cow comfort and cow health. The desire was also to split the herd on per cow production to allow a greater focus on high production cows housed in the shelter with the aim of overall increased productivity.



## Construction

The 80m X 18m compost shelter is approximately 15 months old and was built on a ridged which captures a breeze for most of the year. The total pack area is 1,440m<sup>2</sup> and the shelter is oriented East/West for convenience and space availability. The base of the compost bedding is clay. The eave height is 4.5m with a 10% roof slope. A second similar sized shelter is planned for the other side of the feed lane.

The compost pack has free access to the feed alley, as well as a loafing area with two water troughs at each end.

## Operation

Chris started the bedding pack with sand, but this proved unsatisfactory, resulting in many lame cows. Now the bedding is 100% dry manure solids (DMS) and a new shelter will be started with DMS. Rain sometimes blows in, but this has not been a real issue with no increase in dirty udders or mastitis.

The pack is cultivated twice daily with a chisel plough to a depth of 20-30cm. Chris finds that if it is cultivated too deep, the pack doesn't dry well. If the pack looks clumpy following cultivation, sawdust (if available) may be added, or more dry manure solids from the dry lot is added. Some bedding has to be removed occasionally, specifically when it gets too deep, especially at the ends. The alleyway is dry scraped twice weekly.



The compost shelter is used for the milking herd only, being utilised full time in summer and hot weather

## Costs

### Capital cost

\$220,000

Outsourced concreting and shed frame

Erected the shed themselves

### Operating costs

The only extra cost is occasional sawdust replacement, fuel for pack cultivation and pushing-up the feed

## Shelter utilization

The compost shelter is utilised full-time for 160 of the higher producing cows on a compost pack area of 9m<sup>2</sup> per cow. The remaining later lactation cows are held on a dry lot on the other side of the dairy from the compost shelter.



## Issues

The initial sand bedding was an issue, as this caused lameness and was difficult to dry out.

Chris thinks that the shelter would probably operate better if it was oriented North/South, as the prevailing breeze is from the East, but is unsure of the effect of more sun entering the pack. Fans may be installed to cool cows.

Initially, the cows did congregate at the northern end of the shelter, and it is not known why. This has changed and now the cows distribute themselves evenly over the pack.

The low availability of sawdust is becoming an issue.



## Outcomes

The pack is composting well, being hot and steamy when cultivated. Chris is very happy with the system and will build a second one on the other side of the feed alley. The cows are generally clean. Production has increased by 2-3 litres to 28 litres/cow/day since using the shelter, with very little extra operating cost. The cows are comfortable and are laying well.

Cows and udders are very clean and the levels of mastitis have reduced from approximately three cases at any one time when on the dry lot, to about one case now at any one time on the compost pack. The somatic cell count is

approximately the same as before. The incidence of lameness is significantly lower now, with only the occasional footrot case.

There is an increase in labour requirements compared to the dry lot, with ploughing shed and pushing feed back onto the feed pad.



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### FOR MORE INFORMATION

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