

Managing a Variable Climate Considering Investing in a Feed Pad?

1. Andrew Bacon - Toora

- Andrew milks 300 cows on 140ha on coastal flats at Toora, South Gippsland, in a sharefarm arrangement with his parents. Numbers were down slightly this year due to the extremely wet conditions. The farm is capable of milking 360 cows (stocking rate 2.6/ha) and there is interest in pushing numbers towards 380 in the future (2.7 cows/ha).
- Calving date has shifted over the past season or two from a winter-spring calving to a start of calving date of 10th March in 2012. This has been achieved by delaying mating and extending the lactation rather than bringing cows forward. Andrew feels that early autumn calving better matches the pasture growth pattern on the farm, with the majority of cows dry during the worst period for growth, mid-January to early March.



- The Bacon's feed pad was installed in 2007, out of a desire to enable flexibility in feeding during the wet winter months. During the months of June, July and August the feedbase on the farm is under intense pressure due to the high stocking rate, the wet nature of the farm and now the earlier calving date.
- The feed pad is constructed with a base of 200mm deep Fish Creek rock (75mm), and a single row of u-shaped concrete feed troughs. It has been constructed to ultimately hold 480 cows. It was deliberately built larger than initial requirements to allow for possible farm expansion in the future.
- Some of the initial site preparation and works during the installation were done by the Bacons, but the majority was via contractors under the direction of the Bacons. The total works and materials cost \$46,000, with \$16,800 of this being the feed troughs. No additional money has been invested on the pad since installation.
- The pad is constructed as a part of one of the two main farm laneways, allowing cows to walk on to the pad and back past before and after milking. The pad is used prior to milking, with the cows being shut on the pad for around an hour to feed. They are generally only fed during the winter months, as a means of easily feeding forage produced on the farm, saving on pasture damage and reducing wastage by around 25%. At times this winter, the cows would not have been able to have been fed had it not been for the feed pad. Savings are in the form of reduced wastage, minimal pasture damage, cow ease and comfort.
- During calving time the springers are also fed on the pad, cleaning up the silage that the milkers don't eat. This also saves on feed, reduces wastage and minimises paddock damage.

- Only home-grown forage is fed on the pad, although at some times silage is mixed with grain in a mixer wagon and fed to the cows. The mixer wagon was owned prior to construction of the feed pad and the Bacons decided that the feed pad would complement the equipment already owned. A linkage round bale feeder has been purchased since construction, and this allows the easy feeding of bale silage by driving alongside the troughs.



- The pad has required little or no maintenance since installation over four years ago, although this wet winter has created the need to top-dress the pad with some more Fish Creek rock, mainly close to the troughs.
- Effluent is managed by allowing the solids to dry for several days, then is scraped to the dairy's effluent area, or removed down the paddock to be applied as additional nutrient. It requires scraping only around twice annually, needing a few drying days prior to scraping.
- The Bacon's feed pad was modelled on a pad they visited on a similar tour at Poowong a few years prior to installation.

2. Paul and Louise Sherar, sharefarmers for Phillip Ould - Loch

- Paul and Louise Sherar milk up to 300 Jersey and cross breed cows on 100 ha in a sharefarm arrangement with the farm owner Phillip Ould at Loch, South Gippsland. The farm is undulating to hill, with parts of the farm well-drained and others heavy flats.
- Calving on the farm is split, with around one third commencing February-March and the remaining two thirds July-August.
- The district experienced extremely wet conditions in the winter and spring of 2010, the time the Sherars commenced on the farm and the wet conditions remained for autumn, winter and spring 2011. A decision was made to install a feed pad and loafing area on the farm during the autumn of 2011, despite the wet conditions, as pasture damage was already high and even feeding cows was posing to be a problem.
- Phillip Ould sought advice from local contractors and construction commenced in April and was completed in May. Additional earthworks and back filling were required to ensure a firm base was achieved, and this caused the costs to increase beyond original estimations.
- The pad is 60m long by 15m wide, with a base of stone and topped with 150mm of Cranbourne rock. There are seven Waste-Not feeders, as well as additional hay rings allowing for the feeding of up to 120 cows at any one time.

Total cost of the project was \$56,000 with \$42,000 in earthworks and rock, \$11,500 for the feeders and \$2,500 in fencing. Considerable extra expense was required in stone and earthworks to form a solid foundation in the wet conditions.



- The pad is alongside one of the two main farm laneways, and this allows the cows access to fodder on the way to, and from the dairy. As this season was the first with the pad, it involved a degree of trial and error. Cows were fed in batches during milking, and then removed ready for the next batch. This allowed around 20 minutes feeding time per batch, and allowed all the cows in each batch to receive fodder.
- A calving pad is close by, allowing for springers to be fed on the pad between milkings and reducing the pressure on the calving pad area. If the need arises, cows could be shut in the laneway and feed pad area during the day or night in times of extreme wet, reducing paddock damage considerably. At times, paddocks were left open to allow cows to wander back to the pad should they wish.
- No additional equipment has been purchased by Sherars for feeding fodder on the pad - it just forms part of the farm's feeding infrastructure. The idea is to feed home-grown silage and any purchased fodder, to minimise wastage of conserved or purchased fodder, to reduce pasture damage incurred during feeding in the wet and to reduce the risk of injury from feeding on wet steep country.



- As the feed pad was installed this season, during a wet autumn and winter period, a few things could not be completed. A laneway is required to improve cow flow off the pad and prevent the need to move cows in batches and open and shut gates. Some additional drainage works are also required to allow excess water to flow to the dairy's effluent ponds rather than onto the cow yard. Access to one paddock has been made difficult but will be improved when the rear laneway is completed.
- It is early days for the operation of the Ould/Sherar feed pad, and it will be interesting to see what level of wear and tear is experienced on the stone base.
- The feed pad has been an extremely valuable resource to the farm in this extremely wet season. The job was made a lot more difficult and more expensive by being installed in the middle of the wettest season in years!

3. Matt Loader and Megan Kirk, sharefarmers for Ken and Val Kirk - Krowera

- Matt Loader and Megan Kirk sharefarm on a hill farm at Krowera, South Gippsland. They milk 300 seasonally calving cows on 110ha (2.7cows/ha), with the first cows commencing calving on 1st June. When the weather in April and May 2011 became even wetter than it already was, a decision was made in late May in conjunction with farm owners Ken and Val Kirk, to install a feed pad. This was just prior to the commencement of calving!
- The feed pad was completed some two weeks later, after 21 truck and dog loads of rock was shifted by Ken with the tractor and bucket as it was too wet to get the trucks to where the pad was being constructed.



- The pad was built adjacent to the existing main laneway on a dry knob close to the dairy. The cows are held back before being crossed over the Loch-Wonthaggi Rd, and so now can have access to silage on the feed pad at this time during the winter months. When not in use, it is fenced off and the laneway functions as normal.
- Construction is of 12 loads of 150mm rock on the base, topped with 10 loads of Cranbourne 20mm rock that is used on cow laneways. There are enough Waste-Not feeders to comfortably feed 200 cows.
- The cost of installation was around \$32,800, not counting the time of Ken and Matt doing minimal earthworks, tree removal, a trough removal and carting the stone some 100 metres. It was estimated that around \$7500 of the cost was additional stone because of the wet conditions. Without this additional stone, the project would have cost around \$25,000.
- It is the intention to use the pad solely to feed silage during the winter, however if the need arises to purchase northern hay, it would more than likely be fed on the pad even in summer or autumn to save time and reduce wastage.
- The pad allows for the feeding of fibre to the cows prior to grazing, although at times the cows were fed both pre and post milking. It can also be used as a stand-off area in extremely wet conditions should the need arise.



- The feed pad is estimated to have reduced feed wastage by up to 50% this winter, and it was felt that at some times the cows may not have been able to be fed in the paddocks as it was too wet and dangerous. Throughout the winter of 2011, they were only fed in the paddock once. The incidence of LDAs was reduced from a usual 5 or 6 in a normal year to none this year. It has been a huge time-saver, with feeding taking around one hour per three days to fill the feeders and prepare bales, compared to two hours a day before-hand.
- A silage bale grab was purchased to enable bales to be moved and stacked closer to the pad, saving time and making feeding time easier. No other machinery or equipment has been purchased. In the future, they will investigate the manufacture of chopped bale silage to prevent cows pulling longer feed out from the feeders and dropping it.
- Words of advice from Matt and Megan were if they had the time again, they would never attempt to build it in winter!

4. Peter and Elaine Notman - Poowong

- The Notmans milk 500 cows on 168 ha on an undulating to hilly farm in Poowong South Gippsland (stocking rate 3 cows/ha). Their feed pad was installed 10 years ago, in 2001, at the same time as they were integrating an adjacent property into their existing farm. As laneway works were being done to link the farms, it made sense at this time to build the pad and integrate it into a new major laneway heading to the new area of the farm.
- The new laneway needed to be larger and flatter, to enable better cow flow, and so considerable earthworks were required to be undertaken. This made the decision to install the pad a little easier.



- The South Gippsland hills can be quite dangerous when wet, and as the farm has a number of staff, it was deemed to be a safer way to feed cows, reducing the risk of accidents as well as minimising feed wastage and paddock damage.
- Ten years ago, the feed pad cost \$99,000 to construct, and this involved considerable labour by Peter and Elaine, who became instant experts at laying concrete! Assistance was sought from Dean Ford from Darnum, who helped to install the pad. Construction is of 260 cubic metres of 32mpa concrete with fibre mesh, that took four people a day to lay. Curb and channel feed troughs were constructed totalling 200 metres in length on each side of the pad. These are secured to the pad with steel holding pins. Steel work and electric wires prevent cows entering the feed troughs.
- Effluent is managed via a flood wash system, with the effluent from the pad travelling via a drain some 500m to the dairy effluent pond.

- Generally the pad is used to feed silage when pasture is short, but is also used as a stand-off area in winter and late summer periods when pasture damage from over-grazing may occur. The feed pad allows for feeding of up to 600 cows, and up to 500t dry matter may be fed in a season.
- Feeding on the pad reduces wastage considerably. Should this silage be fed in the paddock, wastage is estimated to be around 15%, or 75 tonnes DM. The savings could be around \$11,250 at \$150/t DM. Another big saving is in the time reduced feeding out silage. The stacks are located close to the pad, and the feeding process takes 30 minutes per day compared to around 2 1/2 hours in the paddock. The labour saving alone based on two hours per day for 120 feeding days is around \$6000. Pasture damage is also kept to a minimum, as carting enough silage daily to paddocks for 600 cows can result in considerable traffic damage from cows and machinery!
- When the pad was built a second-hand \$20,000 tractor was purchased to pull a feed mixer. The mixer is now used only to feed the silage on the pad, as Peter wanted something robust requiring minimal repairs and maintenance. No other machinery has been required.
- Now that it has been operational for ten years, Peter looks back and thinks he should have installed some additional water piping to allow the feed troughs to be flushed to remove uneaten feed, preventing build up in the troughs, as occasionally happens. The base of the feed troughs should also be smooth concrete to allow easier cleaning of residual feed. Peter also thinks the back curb of the feed troughs should also be around 200mm higher to prevent any feed spillage.

5. Stuart and Jacqui Tracy - Waratah Bay

- The Tracys milk 450 early autumn calving cows on 180ha at Waratah Bay in South Gippsland. After many varied seasons milking on flat coastal country, that at times can be extremely wet or extremely dry, they decided to install a feed pad to ensure greater feed security to their farm business.
- The feed pad was installed in 2002, and is used to feed the milkers all year, with the feed mix varying depending on the time of the season and the stage of lactation. A mixer wagon was already at use on the farm, and the feed pad has been a welcome addition to enable easier feeding, less wastage and allow for the heavy machinery to be used away from wet paddocks. Most of the time cows are fed prior to milking, as it forms the entrance to the cow yard and is the main laneway access. In the current season, extremely wet conditions created the need to lock the cows on to the pad to minimise paddock damage.



Cont. 5.

- Springers are also fed on the feed pad, and it forms a good place to sort cows out. Cows can be batched on the pad, with four sections allowing for the feeding of up to four batches of cows if it was required.
- The pad was constructed by the Tracys along with the expertise and efforts of Dean Ford and Peter Farrell. In 2002, the total cost was around \$150,000. The pad consists of feed space on either side of a central feeding area of length 190m, a 20mx17m space at one end to turn around feeding machinery, a six metre space mid-way along the feed troughs to allow for good cow flow and a 15m turn area at the other end. The pad comfortably holds 500 cows, but with head stalls could hold up to 600 cows.
- Effluent management and cleaning involves a floodwash tank allowing for the pad to be cleaned every milking and every second day the pad is scraped to remove solids. The slope is only 1 degree, and possibly should be greater to allow for better effluent movement. The feeding area only requires cleaning about once per month, when enough residue has accumulated. Solids are retained and applied to paddocks, and liquids are pumped back to the farm effluent dam.
- A large amount of silage is imported from nearby turnout area, and this is all fed on the feed pad. About 80t oaten hay is purchased annually for feeding on the pad, as well as bread and almond hulls, and this replaces some grain in the dairy.
- If they had the opportunity to do things again differently, the Tracys would ensure a greater slope on the pad to improve washing and install a larger tank for the flood wash. The feeding area in the middle of the pad would also slope slightly outwards, to get the feed to fall to the outside of the trough, minimising wastage and improving the cleaning. These are relatively minor issues compared to the value that the feed pad brings to the farm feeding infrastructure.

6. Ray and Bec Stefani - Fish Creek

- Ray and Bec Stefani milk 270 cows on 90ha effective milking area on a wet farm at Fish Creek in South Gippsland. A high production herd with relatively high inputs, meant that the construction of a concrete feed pad was always on the cards for Ray. The farm had a pad made from a base of rock with hay rings, which had been in use since the last very wet winter of 1996, soon after the farm was purchased. In 2008/09, the Stefanis decided that a larger pad was required, and one that was closer to their new dairy.
- The pad was designed by Ray, who had some clear thoughts about what he wanted to achieve with the pad. It was built by Geoff Taafe with assistance from Ray, and is constructed of 32mpa concrete with reo mesh, a central concrete feed trough topped with steel hoops, allowing enough space for up to 320 cows should it be required. There is enough space down either side of the feed trough for easy cow flow, and the feeders can easily be filled or cleaned out by Ray with the tractor with plenty of turning space.
- The pad cost around \$140,000 to install, and this included an estimated \$30,000 in excavation costs, as some back filling was required in some areas, and cow tracks had to be widened and elevated to the level of the pad.

- The pad is solely used to feed fodder conserved on the milking or turnout area, with minimal fodder bought in. The pad allows full flexibility around feeding bale, pit or maize silage, and the design and layout means that fodder can be fed every few days if required rather than being a daily task.



- The pad is mainly used June to October for the late winter-early spring calving herd, and usually again over January-March in the height of summer when it functions as a holding area to feed fibre prior to the feeding of a fodder crop. At times it is open purely to allow access to fibre should it be required during joining when up to 8kg grain may be fed.
- During the extremely wet winter of 2011, the pad was invaluable, allowing for the herd to be fed minimally on pasture and brought home to be shut on the pad if required, minimising pasture damage.
- It is estimated that the pad reduces fodder wastage by 15-20% over the drier months, and in 2011, at least 50% during the wettest months. Paddock damage was kept to a minimum despite the wet, with only two hospital paddocks needing renovation and some smaller sections of high traffic flow in other paddocks. Had they not had the feed pad this year, it is unlikely the Stefanis could have even fed the cows. Ray believes stocking rate would have had to drop to 2.5 cows per ha - a drop of at least 45 cows. Production was also maintained, and whilst you never know what would have happened, Ray believes they saved a drop of around seven litres per cow per day, or just under 2,000 litres per day! It is possible that with the last two seasons being as wet as they have been, the pad has been paid for through preventing production losses alone. Reduced wastage and minimal paddock damage is an additional saving!
- Effluent is managed by scraping the solids twice weekly with the tractor to holding areas along the side of the pad, and liquids run to a pit and flow to an effluent dam close to the end of the pad. This was a small old dam rarely used, that was enlarged and now acts as a place to store liquid effluent from the pad. There is no flood wash system nor is one required. Solids are applied to the paddocks when it is possible to do so.
- Feed troughs are cleaned weekly to remove any build up of uneaten fodder, keeping fodder fresh and palatable. This is done by Ray with the tractor and front end loader.
- A scraper attached to the tractor for cleaning and an extension on the silage wagon made from an old conveyer for feeding out are the only items of machinery purchased, so while the initial investment was relatively high, additional and on-going expense has been negligible. Only one cow has been lost on the pad, when bulling. None have even slipped over!
- Ray feels that he got it "fairly much right", after giving a lot of thought to the pad prior to construction. He believes that it levels out the highs and lows of the farm's feedbase, and allows for much better feed security in a variable climate.