Storm and Flood Industry
Recovery Program - Case Studies

# Dairy Farmer Response to Storm and Floods 2021/22

## Flexible feeding systems keep cows well fed during record wet winter

*Overview*

- *Flexible partial mixed ration feeding system and focus on feed conversion efficiency support production during persistent wet conditions of 2022*
- *Established farm adviser and contractor network, as well as a skilled family team supported decision making and recovery.*
- *Ongoing repairs and infrastructure development in a high rainfall area improves cow comfort and climate resilience.*

### "Willow Vale"

The Sherborne family dairy near Burrawang in the Southern Highlands of New South Wales. Operating for 60 years, the management structure has changed recently to a partnership between Grant and Jane and their 3 children Georgia, William and Sam.

The rich and free draining volcanic soils of the Southern Highlands escarpment are a feature of the undulating property whose creeks form an important part of the Sydney Water catchment. With reliable autumn and spring rainfall, the property has an established ryegrass production

base supported with a partial mixed ration (PMR) delivered on a concrete feed pad, kept clean with a Yard-Blaster® high pressure hose system. Concentrate pellets are fed in the dairy.

Normally milking around 300 Holstein Friesian cows, the herd had grown to 330 cows when the 2022 storms and floods hit delivering over 650mm of rain falling in both March and July and a total of 2600 mm rain for the year which is more than double the farms normal average. The 100 ha milking platform supports an annualised stocking rate of 3.5 cows/ha with 300 ha of lease properties used for fodder production, rearing replacement heifers and dairy-beef steers to mature slaughter weight.

## Farm development and flexible feeding systems increases preparedness

Despite the farm's normally reliable rainfall, the Sherborne's realised that the region's exposure to east coast lows and occasional droughts alongside their rising stocking rate brought with it increased climate risk. Well in advance of the 2022 storms and floods, there had been a transition to PMR feeding to support their pasture base. A mixer wagon had been purchased in conjunction with the development of the feed pad in addition to investments in shed storage for hay, processing of grain, and regionally sourced byproducts. Regular attendance by family members at industry training events and use of a nutritionist value-added to their investment in herd genetics and facilities. With a focus on per cow production and feed conversion efficiency, the Holstein herd's annual milk solids production had risen to exceed 650kg MS/cow/year.

Feed supply risks had always been managed carefully with good on farm storage and well-developed relationships with multiple regional feed suppliers reducing exposure to freight costs and longer-term feed market volatility. With plenty of ingredients on-hand, quick ration changes could be made if supply issues were encountered or in response to rapid change in weather conditions.

Before the 2022 storms and floods, a calf shed was constructed to protect calves from the extreme weather and increase labour efficiency. Additionally, fences around creek systems had been redesigned to allow for minor floods without loss of fences.

**"We were used to wet weather but 2022 was unprecedented"**

Creeks running through the property certainly experienced major flooding in both March and July of 2022. The hilly

*Investment in a hoof crush and developing trimming skills allowed quick and safe treatment of lame cows.*

*Cows in a sacrifice paddock during the wet period.*

nature of the farm meant that most damage was restricted to gullies, low lying fences, creek crossings, riverbank erosion and some paddocks in areas adjoining watercourses. However, even the free draining volcanic soils could not handle the extreme and persistent wet that saw the soil profile become saturated and water remain on paddocks for up to 6 months. Draining surface water resulted in erosion and landslips with liquified soils becoming extremely pugged and untrafficable. Rain and running water over laneways brought stones to the surface and removed previously applied gravel. Despite an extensive network of conveyer belt rubber along edges of laneways providing softer footing for the herd, lameness was a constant challenge. Luckily some family were training in hoof trimming and with a good supply of hoof blocks stocked up during Covid, saw lame cows being treated quickly and efficiently in the covered hoof crush.

The 3-day power outage at the peak of the March 2022 event highlighted the critical importance of the on-farm generator and fuel supplies that could operate the dairy, water pump, refrigeration units and deliver pellets in the dairy. There were no interruptions to milking or shed feeding.

The milking herd was maintained on the concrete feed pad for feeding and resting in extremely wet conditions but sacrifice paddocks were used for resting as conditions improved. The PMR remained the focus of feeding with the amount of fed able to be reduced during periods of temporary reprieve where paddocks could be safely accessed by the herd.

Grant described the huge physical toll the wet took on the herd and the despair of seeing exhausted cows collapse while being walked or milked. Winter is normally cold and a bit wet but the mud in laneways and paddocks was debilitating for cows and the family. Reproductive performance suffered with a decrease in cows cycling and staff also at times losing focus due to the debilitating conditions.

With a large number of autumn calving cows, difficulty accessing the springer paddock by machinery and the constant mud saw increases in calving problems and other metabolic disorders with more problems with calves.

To add to their challenges, the retaining wall over the machinery yard where the calf hutches and machinery were stored collapsed, limiting truck access to the feed shed and the dairy. Compounding

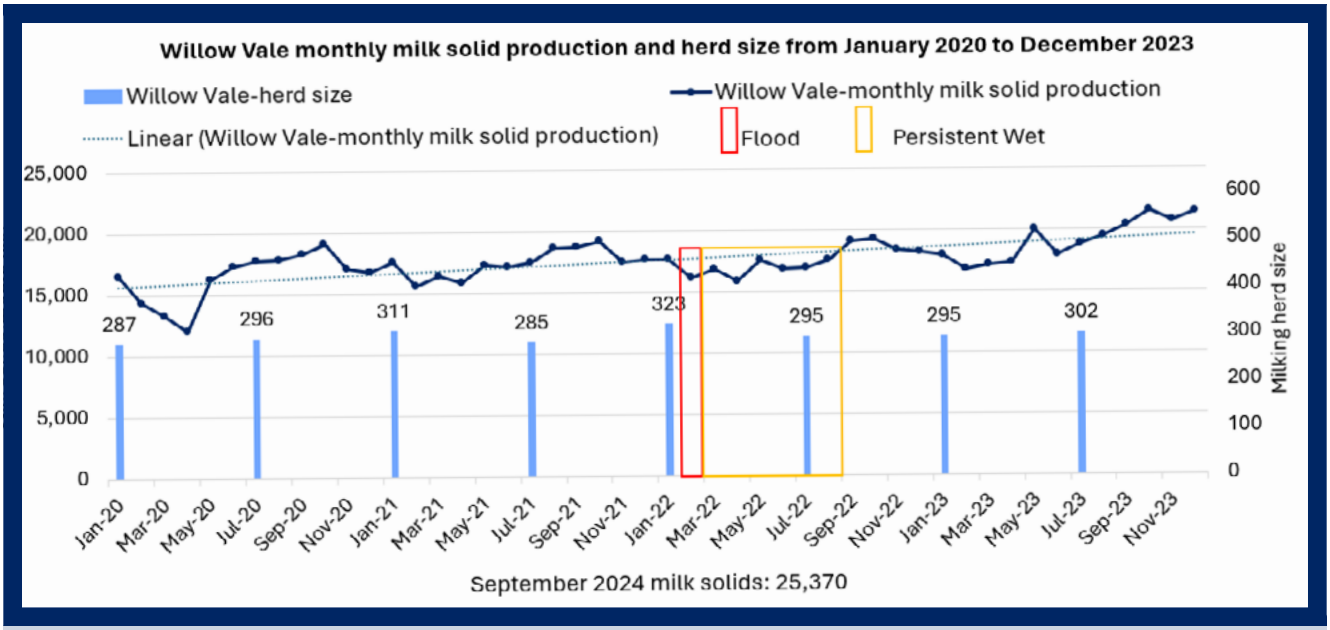


*Figure 1. Willow Vale dairy monthly milk solid production and herd size.*

this damage to the retaining wall, the entrance was damaged in addition to 100 meters of council road either side of the farm entrance was severely eroded further impacting truck access.

## Focus on feeding cows minimizes the impact on production

With no interruptions to milking or feeding, the Sherbourne's investment in feeding and storage infrastructure with dedication towards feeding cows minmised the event's impact on milk production (Figure 1). While the herd's normal spring production peak was dampened, this only provided a temporary interruption of a decrease of 4-5% in the herd's overall trend of increased annual productivity. Maintaining milking, with a strong focus on udder hygiene and being able to keep the feed pad clean kept mastitis rates manageable and somatic cell counts below 200,000 in all but the wettest of months during 2022.

Despite the overall experience being mentally and physically draining, the Sherborne family felt their decision making was well supported by their local contractors, dairy community and consultant network. Council was quick to assist with temporary road repairs and cultivation of longer-term relationship with contractors ensured rapid repair and maintenance and damaged infrastructure.

**"The 'roads to recovery' needed some repair and we know we can do better for next time!"**

*Cows can now calve safely in all weather in a clean, stress-free environment.*

The Sherborne's felt they were well prepared for most adverse weather events, but the extremes of 2022 highlighted some areas of risk and potential for further improvement in climate resilience.

*"While the belting helped our cows walk, even it got damaged by the volumes of water"*

## Key improvements made on the farm include:

1. **A larger vat installed allowing skip-a-day pickup with room for further herd and production expansion**. With a larger herd and more production per cow, limited vat capacity required daily pick-up, and milk was dumped when tanker access was restricted.
2. **More water troughs installed** in paddocks increasing the number of sacrifice paddocks that can be used in future events. Additionally, this aids in heat stress mitigation.
3. **Investment made in an all-weather compost barn for the springers.** The terrible weather conditions made feeding springers and retrieving freshly calved cows and calves from the paddock challenging during this critical phase of the production cycle. This ensures easy access for monitoring and allows pre-calving cows to be easily fed a TMR, while protecting them from extremes of wet or hot weather. As a bonus, an extra paddock has been freed up for use by the milking herd.
4. **Revitalise their herd health programs.** Led by Georgia, the Sherborne's have worked with their veterinarian and consultant to get more out of the data they collect with their herd management software. A "fresher" herd further value-adds their investment in the calving barn in turn feeding into improved feed conversion efficiency.
5. **Reform, add drainage and resurface laneways with regular track-maintenance.** Laneways did not handle the extremes of rainfall with long-term waterlogging, surface erosion and a number of conveyer belts and culverts giving way. Recovery grants and savings assisted with upgrades to laneways and tracks. According to Grant, "The laneways have held-up brilliantly during wet period this past year [2024]".

6. **Farm entrance repaired, expanded and resurfaced** with council now fully repairing the road. Bidirectional b-double access has improved driver safety and reduces freight costs. **The retaining wall of the machinery yard has been strengthened to increase trafficability and ensure access to the commodity shed and dairy.**
7. **Continued focus on calf rearing and ongoing pasture development of lease properties** sees most heifers calving by 2 years of age with 1st lactation production approaching that of their older herd mates. Will and Sam continue to work to optimise the lease properties driving surplus pasture for green-chop and silage for use in the dairy herd when pasture supply in grazing areas is reduced. They also use the property to grow and finish over 150 dairy steers per year with slaughter weights of over 520 kg reached at 14-18 months of age.

While the Sherborne's feel that their business has recovered and is performing well, they are aware that the next climate or economic challenge is just around the corner. "We want to keep growing and improving but with this comes more risk". There has been investment in more grain storage, and they are considering future housing of the cows as a way to intensify sustainably and improve returns from the high valued land in the region. Continued improvement in herd nutrition, genetics, and pre-calving management, combined with increased skills and better use of service providers has reproduction back on track. Grant also attributes these improvements to the herd consistently breaking its monthly production records throughout the year.

"While we are still feeling the effect of 2022, we are optimistic about our future in the dairy industry"

*Hopefully, our new walls are here for the long-haul.*


## Acknowledgments

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We would like to acknowledge the NSW dairy farmers who shared their experiences during this program. This case study was compiled by Scibus in collaboration with DPIRD. For more information on this work, please contact the NSW DPIRD dairy unit dairy@dpird.nsw.gov.au.