



Striving for Efficient Business Practice

John and Karen Hunt
Farm-Link Host Farm

Did you know? Efficient farm practices that improve productivity and profitability also reduce greenhouse gas emissions.

Whether or not you believe the climate is changing and whatever you believe the causes may be, the fact is that profitable dairying and reduced emissions go hand in hand.

This is because reducing emissions from dairy cattle means they are more efficiently converting feed into milk.

DairySA's Farm-Link project, part of Dairy Australia's national Profitable Dairying initiative, is demonstrating how dairy farm businesses can improve efficiency and profitability while reducing greenhouse gas (GHG) emissions.

Profitable Dairying recommends the key ways to reduce GHG emissions are:

- › **Identify and cull less productive animals.** Your most productive cows make the most money and produce the least GHG emissions.
- › **High quality feed is always best.** Feed a high quality diet to increase milk production and reduce GHG emissions.
- › **Get your nitrogen fertiliser strategy right.** Apply nitrogen at the right time, in the right place, with the right product and at the right rate to improve on farm nitrogen use efficiency and reduce GHG emissions.
- › **In calf, on time, every time.** This makes your herd more profitable and reduces GHG emissions intensity.
- › **Keep cows comfortable.** During extreme weather events this will reduce stress and associated losses in milk production.
- › **Smarter energy use.** Monitor electricity consumption and equipment performance.

Four Farm-Link farms across SA are demonstrating practical use and adoption of industry programs such as DairySAT and Fert\$mart, among others, which aim to improve productivity and profitability. The farms are located in different dairying regions of the state and they operate varying systems ranging from TMR to virtually entirely pasture-based.

Emissions and their sources have been calculated for each farm using the Dairy Greenhouse Gas Abatement Strategy (DGAS) tool and business analysis of all four farms has also been completed to identify the best areas for each business to focus on for improved profitability and reduced greenhouse gas emissions.

John and Karen Hunt, Mount Gambier

Farm facts

- › Allendale East
- › 186 ha (173.6 ha effective grazing)
- › Predominantly Friesian Jersey cross
- › Total herd 540 cows
- › 2013/14 milk production 236,000 kg milk solids

John Hunt's farming focus is to "always strive for efficient business practice".

"Our goal is to produce one kilogram of milk solids per kilogram liveweight across the herd," he says.

With the target being equivalent to 245,700kg MS (based on average cow liveweight of around 455kg over the 540 head herd) and actual production currently 236,000kg MS the gap is 9,700kg MS.

"We have a way to go, but I like a stretch target to get us focused," John says.

The herd is almost entirely pasture fed at 4.3 cows per hectare, with a maximum of four kilograms of wheat fed only when demand exceeds growth.

GHG emissions are highest per kilogram of milk solids when cows are fed poor quality diets. High quality, high digestibility feed will maximise milk production and minimise GHG emissions per kilogram of milk solids.

John's approach is to focus on home grown feed while monitoring the diet and supplementing to ensure nutritional requirements are met when pasture quality is low.



Figure 1.

With each cow requiring 70–80 kilograms of pasture every day, John irrigates under three centre pivots, aiming for 20 tonnes of dry matter under each.

John applies protected nitrogen weekly on a three-week rotation for nine months of the year and monitors pasture growth weekly. Potassium and sulphur are applied but no phosphorus is required on Lancaster’s soils.

“Any minerals required go into the cows, not onto the paddocks,” John says.

Nitrogen should be used strategically – when plants will respond to extra nutrition and when extra feed is required. It then comes down to the 4R’s of nutrient stewardship:¹ use the right source of nitrogen at the right rate, in the right place and at the right time. John monitors pastures through weekly walks.

He aims to renovate 20 ha each year to maintain his high-performance pastures.

Best practice irrigation and soil management will minimise nitrogen losses. Irrigation affects emissions by influencing soil aeration and water content. You can minimise emissions from the soil by applying irrigation evenly and according to plant demand and soil type.

John’s response is soil moisture monitoring at each pivot and he has also had a pivot surveyed as part of the South East Variable Rate Irrigation Project to examine the potential benefits of greater control of water application depending on soil type (see Figure 1).

1. <http://www.nutrientstewardship.com/about>

Benefits of soil moisture monitoring

With fuel to run the centre pivots costing nearly \$1000 per night, John Hunt was keen to make sure that the water he applied was required. In 2014, he installed moisture monitoring probes under the pivots.

Smarter energy use not only saves costs, it also reduces greenhouse gas emissions.

Integrated Irrigation’s Tim Powell installed the moisture monitors and provides the monitoring service. Soil moisture results are recorded and sent to John hourly, 24 hours a day, enabling him to make an informed decision about whether or not to turn on the irrigators.

At a cost of \$100/month per monitoring location, John says the three he has installed paid for themselves within two months in saved fuel costs. It also ensures that only necessary irrigation water is applied to the pastures.

“We only have one moisture monitor per pivot at present,” John says.

“Ideally we’d have three per pivot, especially on the hills, but at this stage we’re happy with the information we get.”

John’s soil moisture monitoring is not only a cost saver, it reduces greenhouse gas emissions by using less energy and ensuring that feed quality is as high as possible.

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