

CASE STUDY: BELJON PASTORAL

Jon and Belinda Lamond run Beljon Pastoral Co in South Australia's Limestone Coast near Mount Gambier.

Beljon Pastoral is mixture of sheep, cattle and cropping production covering 1250ha over 4 farms. The region has high rainfall with averages around 650-750mm annually and the added advantage of irrigation.



In 2020, Jon and Belinda Lamond joined the Meat & Livestock Australia (MLA) funded Producer Demonstration Site (PDS), investigating the economic benefits of variable rate ameliorate and fertiliser application. As existing customers of Precision Agriculture, the Lamonds were extremely positive about their previous results. "We decided to invest in grid soil sampling with Precision Agriculture to get the best from the land in both our cropping and livestock production".

They were very surprised by the levels of variability in their soil across a single paddock, as highlighted in the soil sample results.

Overall, their base nutrient and pH levels were reasonable, but the variability meant that certain areas of the paddock were receiving less fertiliser than required, while other areas were receiving more than necessary. Prior to undertaking grid soil sampling, their usual practice was to spread lime and fertiliser in a blanket application. The project results highlighted to the Lamonds that their fertiliser budget was not being spent where it was needed most.

The opportunity to be part of the PDS allowed them to hone in on specific soil nutrients and examine the cost benefits of spreading variable rate vs traditional blanket application.



The project subsidised testing for a number of analytes across a number of paddocks. The paddocks tested were then paired, one paddock to have a VR application and the other the standard practice which was optional – to do nothing or to spread a standard blanket rate. In the case of the Beljon paddocks Jon and Belinda identified Phosphorus as being their most limiting nutrient across the paddocks selected for the project. As can be seen in Map 1, their overall Olsen P levels were not bad but there was variability.



Map 1: Soil Phosphorus mg/kg

The Lamond's traditional blanket application was between 150-200kg/ha of single superphosphate, now with data to guide them they are targeting Olsen P levels of 20 in pasture paddocks and 30 in irrigated pasture paddocks. This targeted approach along with variable rate maps that are produced, allows the Lamonds to place the correct amount of Phosphorus where it is needed to reach

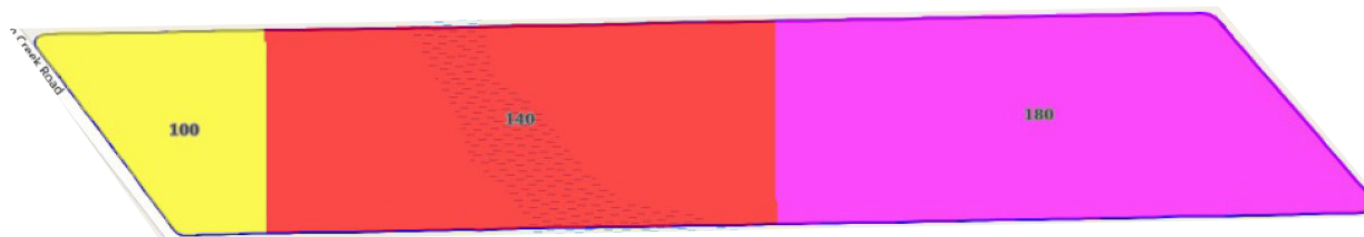
that target, using a variable rate spreader (see Map 2). Phosphorus wasn't the only nutrient the Lamond's wanted to work on. Potassium and pH in some paddocks also required their attention but for the purposes of the MLA PDS they decided to focus Phosphorus specifically.

On average, there is often a cost saving in tons of lime applied by variable rate application as opposed to a standard blanket application of 2.5t/ha. When using VR technology for other nutrients such as Phosphorus, a desirable target level needs to be set and often, considerably more fertiliser needs to be applied than standard practice. This can be budgeted over several years but ultimately the desired outcome is a more even paddock free of nutrient variables.

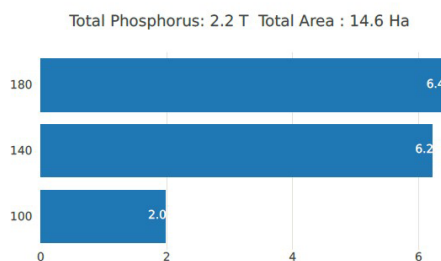
While it is early in the season, Belinda comments on how even the crop germination was this year and looks forward to seeing the results from the yield monitor at years end. As part of the MLA project, the Lamond's have been required to monitor their pasture paddock growth rates, beginning early winter, "in our pastures it has been hard to manage the exact result at this stage, but we can definitely notice by eye the evenness and colour of our paddocks. One of the biggest

notable changes is how even the stock graze the paddocks now compared to before where they would pick out areas and over graze them" recalls Belinda.

The project will run for another two and half years, after which, results from the motoring will be evaluated and released. Aside from the project Jon and Belinda plan to continue to grid map their farm, working on about 20-25% of their farm each year. "We run reasonably high stocking rates and we are continually trying to push our cereal crops to deliver 10+ tonnes per hectare every year. We understand that its extremely important to continue to replenish what we are removing after each harvest" Belinda explains. Both Jon and Belinda are passionate about the health of their soil as they believe it is the basis of achieving full farm potential.



Map 2: Variable application rates of SSP



FAST FACT:

Variable Rate application focuses on distributing phosphorus where it is needed most. This is not necessarily a short term economic saving but will result in better fertility results overall.



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