

IS YOUR BREAK CROP HELPING OR COSTING YOU?

By Ben Curtis

KEY POINTS:

- Consider profit when deciding on your rotation;
- Some break crops can cost your farm;
- Try the Farmanco rotations calculator to analyse your business.

Peas have been a staple part of the Esperance rotation for many years now and in fact there are more peas grown in the Esperance Port Zone (as a percentage) than anywhere else. This is due to their adaptation to our Mallee soils and the fact that pea breeding programs have been continually improving the varieties and their suitability, which fits the Esperance region.

In 2017 we've seen some fantastic results with peas which have yielded as well as they have ever done, in recent memory. There were many pea crops this year that were profitable, which is a great result, because this is not always the case.

In our travels, we often meet growers that are growing a break crop because they feel they should. It is important to question why and how it benefits you or if it is, in fact, costing you.

If you look at the Farmanco client average for pea profitability, it is well in the red. The medium rainfall loss is \$190/ha, on average. Last year, with strong pea performance in Esperance, pea profitability was slightly below breakeven at \$8/ha, with some growers achieving up to \$180/ha profit from peas, but there were still growers making a loss.

The fundamentals come back to agronomy and the suitability of peas to different environments. That's why you see a radical difference between growers and performance. There are many growers that make a loss every year from growing peas (see Figure 1). To justify this, you need to quantify the potential rotational benefits and see if they make up for this loss within the break crop.

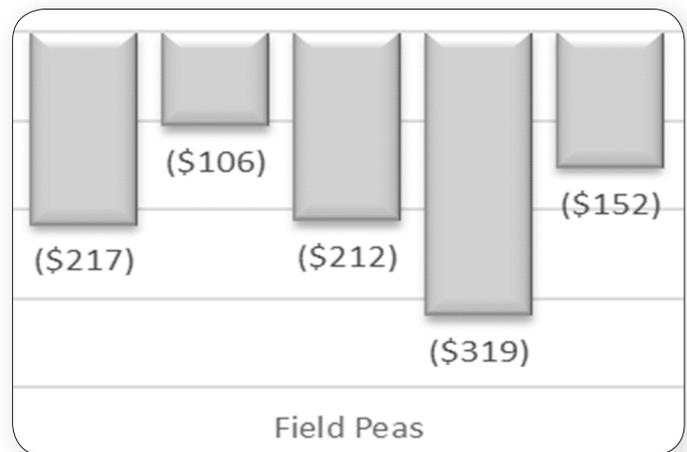


Figure 1: This grower has consistently lost money growing peas over the last five years.

Let's take an example in Figure 2 where a grower has decided to grow peas in one year, and then switches to wheat or barley in the following year. In the first year, he loses \$138/ha from his pea crop. However, in reality, had he grown another crop (for instance wheat or barley) that made \$110/ha profit, he's actually \$248/ha behind. This means he would have to achieve an additional 1.0t / ha wheat yield in the following year to make up for this shortfall. In most instances, however, this is unlikely. Even if you factor in some rotational benefits, through improved wheat yield, better quality and lower fertiliser required in the following year, this would still mean that the grower's loss is around \$168 per hectare.





Variable Costs	345
Pea Costs adjustment	-45
Fixed Costs	147
Total Costs	447
INCOME	
Pea Yield	1.03
Pea Price	300
Total Income	309
Pea Profit Loss	-138
Wheat Profit	110
Difference	248



Rotational Benefit	80
Difference minus rotational benefit	168

Figure 2: This graph demonstrates that by growing peas, this grower was \$248 worse off than if he grew wheat. By factoring in a rotational benefit of peas he was \$168 worse off.

Last year there were some fantastic results with wheat following various legumes and there was a significant yield improvement. However, even then, on average in the Mallee, you would only expect somewhere between 200kg to 300kg yield improvement in the following year's wheat crop.

Whilst there's enough evidence that the benefit of the pea crop in the rotation lasts for longer than one year and that the second year cereal crop also benefits, even when you factor this in, in many instances you don't make up for the loss that was experienced by the pea crop in the first year. Even with the lower input costs for nitrogen, combined with the quality improvement (if it achieves a higher protein level), it still doesn't make up for the original loss on the pea crop.

So, whilst pea crops may have their place and, in some cases, can yield consistently well in certain paddocks, the main problem is that, in general, their yield is reasonably poor, and so is the price.

There are many growers, throughout Esperance, who have reduced peas in their rotation and there is some talk and concern about the potential problems that may occur because of this, with a reduction in organic carbons and a lower disease break. Currently, we are yet to see any negative effects, however, you could argue that when this does occur then rotational legumes could be brought into the system to help remediate any issues.

This whole profit equation would be significantly different if the price for peas was higher. However, history tells us that the chances of this happening aren't great.

The very exciting thing happening in Esperance right now is the advent of lentils and their adaptation to Esperance. For the last two years growers have been trialling lentils and the performance of these crops has, in some environments, been outstanding, with above 2.0t/ha yields achieved.

Variable Costs	345
Lentil Costs adjustment	-45
Fixed Costs	147
Total Costs	447
INCOME	
Lentil Yield	1.1
Lentil Price	450
Total Income	495
Lentil Profit Loss	48
Wheat Profit	110
Difference	-62



Rotational Benefit	80
Difference minus rotational benefit	18

Figure 3: In this lentil example, by including the rotational benefit the grower is \$18/h better off than by growing wheat. The break crop adds profit to his rotation.

Even though the price for lentils is at an all-time low, \$450 is still 50% greater than the current pea price.

If you assume a pea yield for lentils and a price of \$450/ha, then the loss equation is significantly different. Many of these crops will make a profit in their own right and the rotational benefit required to make up any shortfall from the difference in profit from a cereal, is a lot lower. The example in figure 3 is for a 1.1 tonne lentil crop.

In fact, if we can consistently grow lentils with the yields and price that people have been achieving, their rotational profitability stands to increase in Esperance, depending on the sequence of crops used. There is a lot to determine before we can make too many assumptions here, as lentils aren't perfectly suited to the Esperance environment. They don't do well with frost, they're not good with waterlogging, they're difficult to harvest and they tend to set fire to headers.

The great uncertainty with lentils is the current pricing and what is going on in India with the tariffs. So, there is no guarantee that lentils will be a future rotational choice in Esperance, but the chance is there.

If this works out, then the exciting thing is that the rotational profitability will be greater. Also, as we've seen in South Australia, a potential knock-on effect is increased land values, and perhaps the farming system will become more sustainable at both an economic and rotational level.

The advent of lentils really highlights to me the importance of understanding why you're doing what you're doing when making rotational choices. It is sometimes easier to just do what you've always done without questioning it, but changing your rotation could increase or decrease profit, increase or decrease your risk profile, and have a significant effect on the long-term sustainability of your farming system.

Farmanco has a rotational tool that allows you to put in your own data, including variable costs, overhead costs, yield averages and then, using some science to calculate rotational effects of various crops, you can make adjustments that allows you to compare different length rotations against each other to determine their overall average profitability. It is quite simple, but allows you to quantify various changes you make, and it helps to gel the effects of these different decisions.

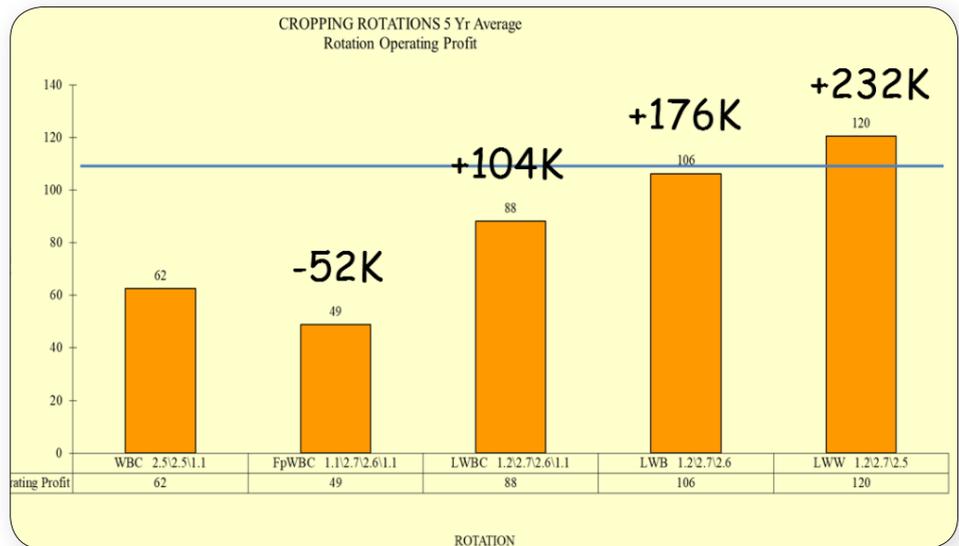


Figure 4: The graph demonstrates profit differences on a farm by altering the rotation.

The example graph in Figure 4 is an output from this model of a rotational comparison I did, with one grower, for a 4000-hectare cropping program. By adding peas into his current cereal/canola-based rotation he was costing his business on average \$52,000 per annum. Just by swapping his pea crop with a lentil crop made a significant improvement to his current rotational profit, increasing it by \$104,000.

It's a worthwhile exercise, to input your own data and analyse the effects on your farm, as rotational choices can make a big difference to your bottom line. 

