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Is Superphosphate the best option?

With the price of superphosphate going up 79% in the last 3-4 months, what are your options and how best should you manage the soil fertility part of your farm business?

A lot of factors will influence these decisions and some of these include; your current soil fertility levels, the future market values for lamb and beef, and where you see the price of fertiliser sitting in the next few years.

The first question you need to ask is; what are your current Olsen P levels for each land management unit on your property? This information will dictate some of the possible options. Optimum Olsen P levels are between 18-23 for pasture production. Maintenance phosphate levels are about 1.5 times your stocking rate for the particular land management area.

If your current Olsen P levels are above optimum, there is the opportunity to mine your P levels and apply no phosphate fertiliser over the next year or two. You can expect that Olsen P levels to drop by up to 3 units per year on the assumption that you try to retain the current stock levels. Effects on production will start once your Olsen P levels drop below optimum. Research from AgResearch's Ballantrae long term fertiliser trials concluded in the mid nineties showed withholding fertiliser from a high input system resulted in a cumulative decrease in pasture production of 4.6% per annum.

If your Olsen P levels are low and you decide to with hold fertiliser, the results of the Ballantrae trials show that the impacts are much less compared to withholding fertiliser from a high fertility system. On average the pasture production was reduced by 1.7% per annum.

Other results from the same Ballantrae trials showed that ewe production (liveweight and fleece weight) was much less affected by withholding fertiliser than was pasture production. Thus ewes were able to buffer much of the drop in pasture production. But after six or seven years of no fertiliser on a high fertility system there was a significant drop in reproductive performance. You would expect this reduction to be greater now with average lambing percentages 20-30 points higher than 10 years ago when the trial was completed.

So what are your options? The most obvious is not to apply any fertiliser in the short-term and try and weather the storm. This is a serious option but you can expect reduced pasture productivity, reduced lambing percentages, lowered stocking rates, changes in botanical composition, and as a result lowered stocking rates. On blocks with low Olsen P manuka regrowth will re-emerge as a challenge. The longer the withholding period the greater the effect. Producers with good levels of soil fertility have the most to lose from withholding fertiliser.

Another option is to apply less fertiliser than maintenance. This is effectively spending the same fertiliser budget dollar, but with significantly less product. This approach was typical in the mid to late eighties when farming experienced similar poor returns. The effects of applying some fertiliser at less than maintenance means that the long term impact on the

soil nutrient levels is significantly reduced. Applying fertiliser at lower rates will however attract higher spreading costs.

One thing the recent price rise does highlight is the necessity of having good land resource information for your property. It is essential to know what each land management unit is producing (stocking rate), have good soil fertility monitoring information for each unit and an accurate assessment of what fertiliser you are applying to each of the different land management areas. In today's economic climate it is about maximising your fertiliser dollar and with this information you can be confident that your dollar is being spent in the right way.

Another option is to only apply fertiliser to the better land management units. This makes practical sense as the better land management units carry a higher stocking rate and generally is utilised to produce the higher value product.

A serious consideration could be applying lime on those soils with a pH of 5.4 to 5.6. The cost of applying lime is now effectively cheaper than super. There may only be a 5% increase in productivity but there are advantages of animal health and livestock performance that have never really been quantified by science as lime research has been largely limited to looking at pasture production gains. This option is not a long term solution and should not be used as a replacement option for phosphate.

It is questionable how long these prices will remain high. Some industry commentators suggest a couple of years before another source phosphate are found. Likewise they are predicting lamb prices to increase to $80 for this coming season.

The key is to keep in mind that when the price of product lifts, your farm business needs to be in position to produce great product. Choosing to apply fertiliser, particularly targeted applications to better land management units will put the business in a position to achieve this.