

# Nutrient News

**SPRING 2019 UPDATE**

For more than 70 years, Avoca have been supplying farmers with expert advice and top quality agricultural lime and fertilisers to ensure better crops and healthier livestock.

## IN THIS ISSUE

### Look into Avoca Dicalcic Phosphate

We all want to get the most from our fertiliser. Avoca Dicalcic phosphate is non-water soluble, reducing the chances of losing your phosphate from runoff and leaching. It's better for your budget and better for the environment.

### Get your races sorted

Races looking a bit worse for wear after winter or problems with lame cattle? Check out our Lime Race Rock and prepare your farm for next winter.

### Book a free soil fertility consultation

Contact your local Avoca Lime and Fertiliser Consultant to arrange an on-farm visit to test your soil nutrient levels.



# Avoca Insights: Phosphate Losses

## Avoca Dicalcic Phosphate

There has been some media coverage recently about phosphate (P) runoff and leaching into waterways. Soluble phosphate fertilisers are not suitable for many New Zealand soils and often the best way to reduce phosphate losses is to apply a less water soluble phosphate.

Avoca's Dicalcic Phosphate (DCP) is a unique combination of Avoca lime and superphosphate which has been cured and processed to produce an easy to handle, stable fertiliser. With a near-neutral pH from 6.5 - 7, DCP does not impact soil biology in the same way that the highly acidic superphosphate can. Being non-water soluble, DCP is less prone to leaching and runoff. Also it is not fixed or immobilized in high P retention soils. DCP pastures will get a better long term supply of P for sustained pasture production throughout the year.

The benefits of DCP are supported by a three year trial by P.W. Shannon which compared the effectiveness of applying two proprietary dicalcic phosphate products with using superphosphate alone. The study found the DCP products outperformed superphosphate. Avoca's DCP is a cost effective option to increase P efficiency at the same time reducing environmental impacts.

DCP is available throughout the Avoca network, in Northland and Waikato. For more information on DCP visit our website or contact your local Avoca Lime and Fertiliser Consultant to find out more.



**Near-neutral pH reduces impact on soil biology**



**Reduced leaching, runoff and P fixing losses**



**Non water-soluble for sustained pasture production**

## Phosphate Losses in NZ Soil

Gordon Rajendram, Eurofins Soil Scientist and Technical Manager, has spent many years working within the agricultural research and testing industry. His experience in soil testing and sampling with Eurofins, AgResearch and the Ministry of Agriculture and Fisheries (MAF) has given him an extensive understanding of the impact of phosphate loss. The following is an excerpt from an article published recently by Eurofins entitled **Figuring Phosphate Losses from Soils<sup>2</sup>**:

*The losses of phosphate (P) from NZ soils can be higher than expected and are totally related to soil type, climate and the form of P applied. The Anion Storage Capacity (ASC) also known as phosphate retention (PR) gives an indication of the soils ability to hold onto anions particularly P and sulphur (S).*

*NZ soils generally have a range of ASC between 0-96%, soils with ASC less than 40 are likely to be more vulnerable to P loss. Studies done on low ASC soils in Northland have found on average 35-65% of applied P can be lost via drainage. Recently an AgResearch study on Waikato peat soils showed up to 46kgP/ha/year loss. As a consequence these types of losses have a large financial cost to the farmer and have implications for the environment.*

*A highly soluble P fertiliser is not the answer for lower ASC soils which can be found in all regions of NZ.*



**You cannot change your soil type but you can change the form of phosphate applied.**

The best way to reduce phosphate and sulphur losses is to apply less water soluble phosphate and sulphur fertiliser or apply small amounts more often.



**Check that you are applying the right type of fertiliser with an Avoca Anion Storage Capacity test.**

<sup>1</sup> Shannon, P. W. (2017). A Comparison of the Effectiveness of Two Proprietary Phosphate Products Compared to Superphosphate as Pastoral Fertilisers. Science and policy: nutrient management challenges for the next generation. Occasional Report No 30 FLRC Massey University.

<sup>2</sup> Rajendram, G. (2019). Figuring Phosphate Losses from Soils. Eurofins: <https://www.eurofins.co.nz/news/figuring-phosphate-losses-from-soils>



## Avoca in the Waikato

Avoca has a rich history in improving the pastures of Northland farms since 1947, and now we are extending our expert advice and knowledge into the Waikato. The Avoca network now includes a store at Te Kauwhata offering North Waikato and Hauraki Plains farmers and growers access to the same cost-effective solutions and expert advice that Northlanders have come to know and trust. The full range of Avoca Lime and Fertiliser products are available throughout our network, along with advice specific to both the Northland and Waikato regions.

To highlight the importance of lime in the Waikato, Avoca has participated in a four year lime trial at Te Akau. With the trial now complete, we look forward to the final report. During year three of the trial we saw significant growth in pasture, up to 60% more than the control.



**Indicative trial results show lime contributing up to a 60% increase in pasture growth**

Full results will be available from the four year trial. Contact your local Avoca Lime and Fertiliser Consultant for details.



## Lime Race Rock

Avoca's limestone aggregate, or lime race rock, is a popular choice for spreading on farm races to improve cattle flow and form a hard wearing and stable base in high traffic areas. Now that we are through the worst of winter it is time to start thinking about getting your races right while it is dry. Lime race rock's cementing properties forms a durable surface with no sharp stones as found when using other rock types. With natural calcium and smooth edges, lime race rock reduces stone bruises and lameness in cattle.

Lime race rock is measured on the same scale as other metal products as 'general all passing', also known as GAP. Avoca's lime race rock is a popular choice by Northland farmers for over 20 years. Now available at Avoca's Te Kauwhata store, GAP 20 and 30 graded lime race rock will get races into the right condition for next winter.

**Contact your local Avoca Lime and Fertiliser Consultant to find out more.**



# The Importance of Lime

As far as fertilisers go, lime really bats above the average. Over the years, many trials have shown the wide range of benefits of lime when applied to New Zealand pastures.

## Benefits of lime



**Increased pasture production**



**Increased microbial activity**



**Increased earthworm activity**



**Improved animal performance**

The benefits of lime are interlinked, but let's look at their combined effects in more detail. Lime works in a number of ways, firstly it reduces the soils acidity but more importantly it supplies calcium. Calcium plays an important role in soil structure due to its flocculating ability it aggregates together clay minerals increasing the porosity of the soil. This improved porosity allows more space in the soil for air and water - meaning soils are less wet in the winter and can hold more water in summer.

More air means increased microbial activity improves decomposition of organic matter and availability of nutrients from the soil so overall, less fertiliser needs to be applied.

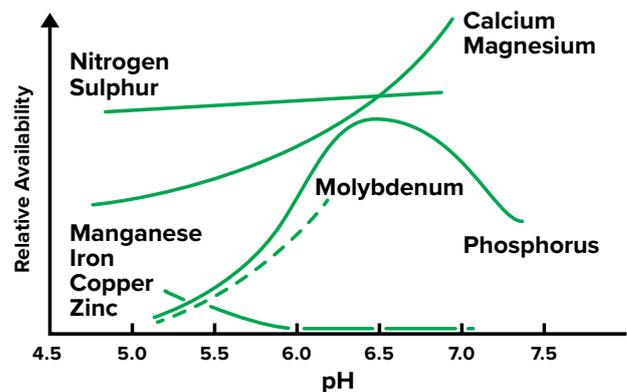
Improved soil structure also assists in cultivation, meaning less work for the soil to become satisfactory for planting crops. It also means roots can go deeper so plants have a greater ability to extract both water and nutrients from the soil.

At low pH (acidic conditions) the presence of aluminum can be toxic, restricting root growth and function. By applying lime and increasing soil pH the effect of aluminum decreases allowing plant roots to proliferate again encouraging greater pasture growth.

Lime can increase the availability of many nutrients in the soil. The availability of phosphorus (P) increases significantly as pH increases to around 6.2-6.3.

If you haven't applied lime in the past year or two, get in touch with your local Avoca Lime and Fertiliser Consultant to maximise you farm's performance and productivity.

## Relationship Between pH and Relative Availability of Individual Nutrient McLaren and Cameron 1996



## Contact us

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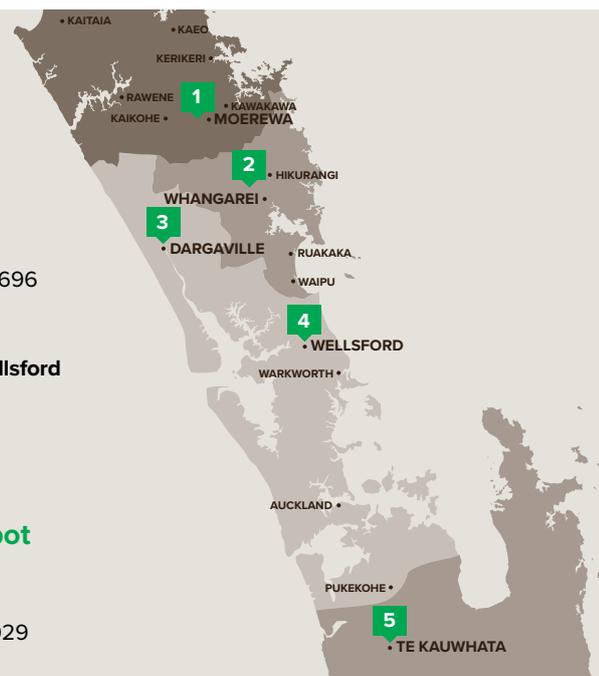
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