



# Are your soil nutrients - and farm profits - being washed away?

One of New Zealand's foremost soil experts, Dr. Gordon Rajendram, suggests that losses of phosphate and sulphur applied to pastures can be higher than expected, with an average of 35-65% soluble phosphate loss from certain soil types commonly found in Northland.

For Northland farmers, that could mean losses of around \$150 per hectare, as well as having implications for the environment.

Dr. Rajendram says: "The loss of phosphate is totally related to soil type, climate and the form of phosphate applied. Of course, you cannot change the soil type or the climate we live in, but you can change the amount and form of

phosphate applied to areas which are vulnerable."

Understanding your soil type is the first step, and Dr. Rajendram says studies have shown that phosphate loss is strongly related to the 'anion storage capacity' (ASC) of the soil.

"The ASC gives an indication of the soil's ability to hold onto anions, particularly phosphate and sulphur," Dr. Rajendram explains. "A low ASC soil will have low phosphate binding sites, while high ASC soils will have many binding sites. If your soil has an ASC of less than 40%, it is more likely to be vulnerable to phosphate loss."

That means a highly soluble phosphate fertiliser, even though it may

be cheaper on a per kilo basis, is not the answer for lower ASC soils.

Sulphur is even more easily leached than phosphate, says Dr. Rajendram. "It's like applying a whole year's supply of food in one day that will just sit in the solution in lower ASC soils. Plants can only use a certain amount daily, the rest is at the mercy of rainfall in the area."

So what can you do if you do have low ASC soil? Dr. Rajendram says: "The best way to reduce phosphate and sulphur loss is to apply less water soluble phosphate and sulphur fertilisers which slowly release nutrients, or apply a little bit more often as the pasture or plant requires it."



Dr. Gordon Rajendram is Eurofins Agri-testing soil scientist and technical manager. Eurofins Agri-Testing formerly known as Soil Fertility Service was originally set up by Ministry of Agriculture and Fisheries in the 1980's to help the farmers of New Zealand.

**Phosphorous  
leaching  
– a huge cost to  
farmers and the  
environment in  
Northland**

## Are your soil nutrients - and farm profits - being washed away?

Phosphate loss could be costing Northland farmers around \$150 per hectare, as well as having implications for the environment.

Learn the secrets of phosphate retention in Northland soils, from one of New Zealand's foremost soil experts, Dr. Gordon Rajendram.

To find out more, contact one of our Soil Consultants >

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