

Soil Phosphorus (Part 6) – Common Inorganic P Fertilisers Used in NZ

In this final article in this series on soil phosphorus, we have listed in tabular form some of the common phosphate fertilisers used in NZ and some of their properties. Other organic fertilisers are also used which supply phosphorus and other nutrients. However, the composition of the nutrients in compost and animal manures is usually quite low i.e. generally in the order of 0.1 – 3.0 % P, depending on the supply source.

Common Inorganic Phosphate Fertilisers Used in NZ

Name	Common Name	Formula	P%	Solubility	Other Nutrients	Acidity of Product	Acidity as Assimilates	Impact on Soil Biology	Effect on Soil pH	Best Soil Conditions To Use	Best Used in Situations Where:
Triple Superphosphate	Triple Super, TSP	$3\text{Ca}(\text{H}_2\text{PO}_4)_2$	20	Water	Ca 16%	Yes	Extreme	Detrimental as assimilates	↓ pH	All conditions, esp alkaline soil	Plant available P is low &/or a quick boost of P is required
Diammonium Phosphate	DAP	$(\text{NH}_4)_2\text{HPO}_4$	20	Water	N 18%	Neutral	No	Mainly neutral	↓ pH	All conditions, esp alkaline soil	Plant available P is low &/or a quick boost of P is required
Reactive Phosphate Rock	RPR	$\text{Ca}_{10}(\text{PO}_4)_6\text{F}_2$	14	Weak acid	Ca 36%	Neutral	No	Neutral to positive	Nil	Acidic soil, good precipitation.	Plant available P is adequate &/or a steady supply of P is required
Superphosphate	Super, SSP	$\text{Ca}(\text{H}_2\text{PO}_4)_2$, CaSO_4	9	Water	S 11% Ca 20%	Yes	Extreme	Detrimental as assimilates	↓ pH [*]	All conditions	Plant available P is low &/or a quick boost of P is required
Mainphos (Mainland Minerals)	Guano	$\text{Ca}_{10}(\text{PO}_4)_6\text{OH}_2$	9	Weak acid	Ca 22%	Neutral	No	Neutral to positive	Nil	Acidic soil	Plant available P is adequate &/or a steady supply of P is required
Dicalcium Phosphate (Zealyn)	DCP	CaHPO_4	18	Weak acid	Ca 25%	Neutral	No	Neutral to positive	Nil	Acidic soil	Plant available P is adequate &/or a steady supply of P is required

* Superphosphate lowers the pH dramatically whilst it is being assimilated into the soil

Note 1: Properties can vary depending on the source materials from which the fertiliser is manufactured and soil type/properties e.g. anion sorption capacity

Note 2: The nutrient status might vary slightly, depending on supply source and manufacturer

Note 3: The table lists the base fertiliser product i.e. other blends with different nutrients are available for some products

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