Are you on the map?

Queensland phosphorus (P) map

Phosphorus (P) is an essential nutrient for livestock growth and development. Deficiencies are common across northern Australia but can be managed through strategic supplementation.

Soil plant-available P stocks are a key indicator of cattle productivity. The Queensland phosphorus map is the first of its kind, showing high-resolution (1ha) plant-available P in areas across the state.

The map has been especially developed for livestock producers to easily identify areas at risk of phosphorus deficiency and support more targeted and efficient phosphorus supplementation.

Produced by Queensland Government of Environment and Science with support from Meat & Livestock Australia, this helpful tool and supporting data is readily available online.

About

The map shows bicarbonate extractable phosphorus, also known as Colwell P, in the top 10cm of the soil.

The measure of P is shown in milligrams per kilogram (mg/kg) equivalent to parts per million (ppm). This is how it is commonly referred to in soil analyses.

For beef production, soil P levels with:

- 6mg P/kg or less are considered deficient to acutely deficient
- 6–9mg P/kg are marginal
- more than 9mg P/kg are considered adequate.

Refer to MLA's *Phosphorus management of beef cattle in northern Australia* for more information.

The mapped P represents the natural unfertilised soil P concentration. Values may differ with actual values in cropping fields or other fertilised areas.

The value is a prediction made from a model.

Areas covered

The first release of the map covers coastal catchments from NSW to the Wet Tropics/Tablelands, including the Darling Downs and Maranoa-Balonne regions.

Mapping is occurring in stages to allow time for soil analysis, data collation and collaboration with complementary projects.
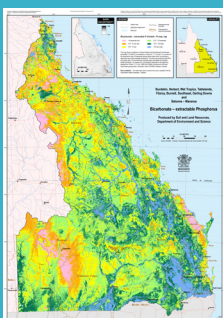
The next stage covering Central Western Queensland will be available late 2021.

Format

The map is made from raster data with a 1ha resolution (each pixel represents 100 x 100 m on the ground). This data can easily be loaded into a GIS. Each pixel has a P value.

Data

It is open data and can be freely downloaded from the Queensland Spatial Catalogue – Qspatial.

How was it made?

A model that predicts P was made using 5,812 soil samples combined with 27 other maps developed from the NASA Shuttle Radar Topography Mission, airborne geophysical data collected during mineral exploration, satellite data and climate data from the Bureau of Meteorology.

All these maps relate in some way to soil phosphorus. They have been combined using machine learning algorithms to produce a map resolution that was not possible before.

Access the P map here:

For more information visit the phosphorus (P) hub at **mla.com.au/phosphorus**