

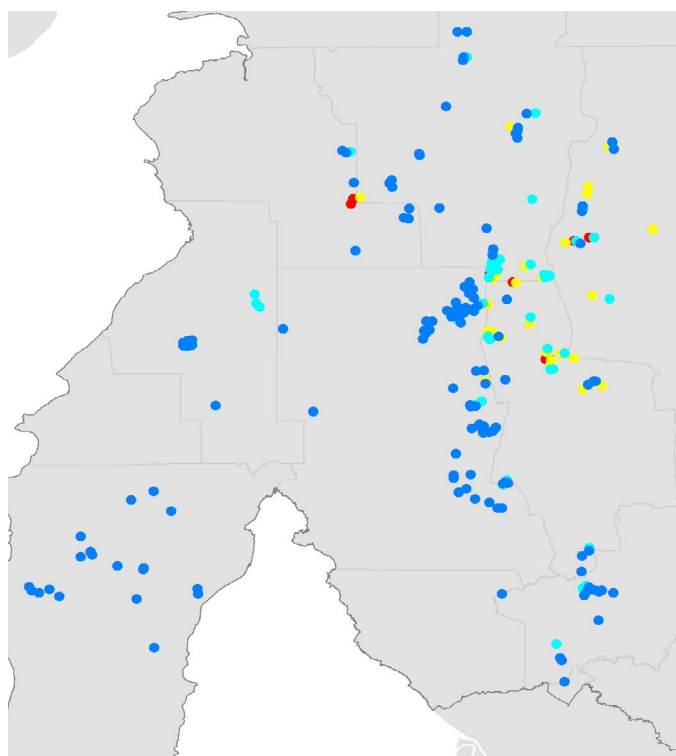
Soil pH Summary

Mid North and Yorke SA Regional Insights



Soil pH is a significant constraint to agricultural production across Australia. Soil pH directly affects the concentration of major nutrients and the forms of microelements available for plant uptake and can result in deficiencies or toxicities. Improvement of soil pH is usually achieved through the application of agricultural lime, with pH mapping allowing the quantity applied to be varied across the paddock to reflect actual requirements.

Soil data from 230 paddocks sampled in the Mid North and Yorke region of SA can provide valuable insights into the extent of soil acidity and variability seen at the sub-paddock scale. Across the entire dataset, the average paddock scale pH was 6.2, ranging from 4.5 to 8.2. Figure 1. shows the spatial distribution of paddock average pH.



■ Below 4.49 ■ 4.50 - 4.79 ■ 4.8-5.19
■ 5.2-5.79 ■ Above 5.80

Figure 1. Map of paddock average pH of grid soil sampling from 2018-2022 in the Mid North and Yorke region.

Within any individual paddock, pH varied on average by 2.1 pH units but by as much as 3.7 units in one paddock. This within paddock variation is higher than Precision Agriculture has seen in other regions where the average range in pH is around 1.2 units within a paddock. Figure 2 shows the pH data for the individual paddocks. The orange line is the minimum pH to average and the green line is the average to maximum pH for each paddock. The red line highlights the point of 5.5pH, which is the ideal pH target for cropping or pasture enterprises. Nearly a third (31%) of the dataset has an average pH less than 5.5. Furthermore, 78% of the paddocks tested had a minimum pH below 5.5 and 67% had a minimum pH below.

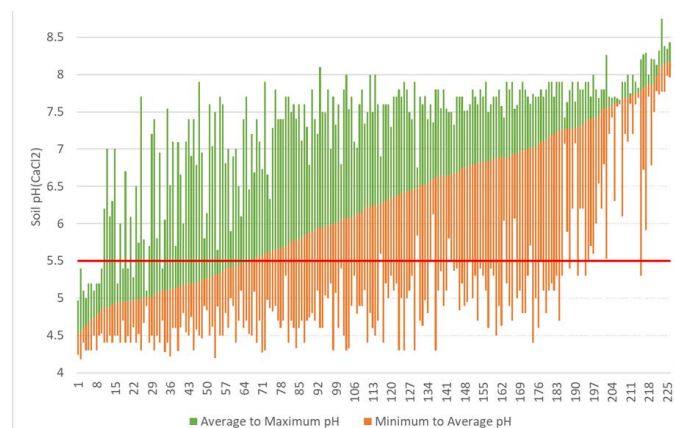


Figure 2. The red line marks 5.5pH across the 230 paddocks, indicating that 47.8% of paddocks tested had a pH below the optimum 5.5pH.

These results may be best understood through a pH map of an individual paddock. This paddock (figure 3) was tested in 2022 with an average pH of 6.4 (ranging from 4.3-7.9). This level of variation was typical across the region.

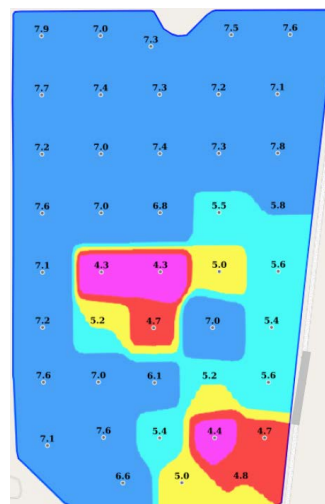


Figure 3. Individual Paddock in the Mid North and Yorke Region SA tested in 2022, the average pH was 6.4 (ranging from 4.3-7.9)

■ Below 4.49
■ 4.50 - 4.79
■ 4.8-5.19
■ 5.2-5.79
■ Above 5.80