WHOLE FARM TESTING: A REVIEW OF DATA
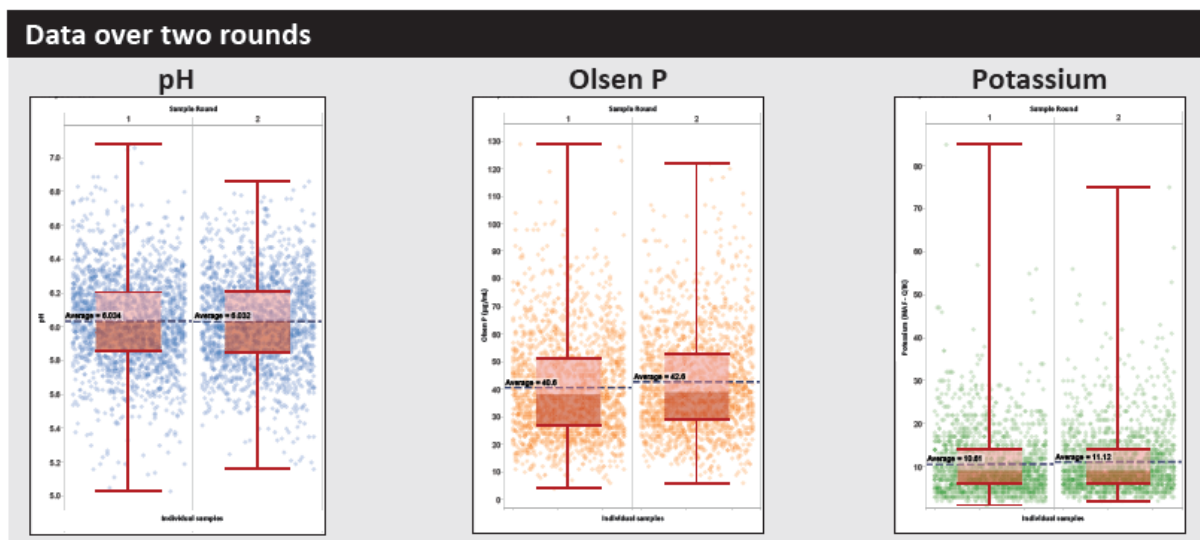
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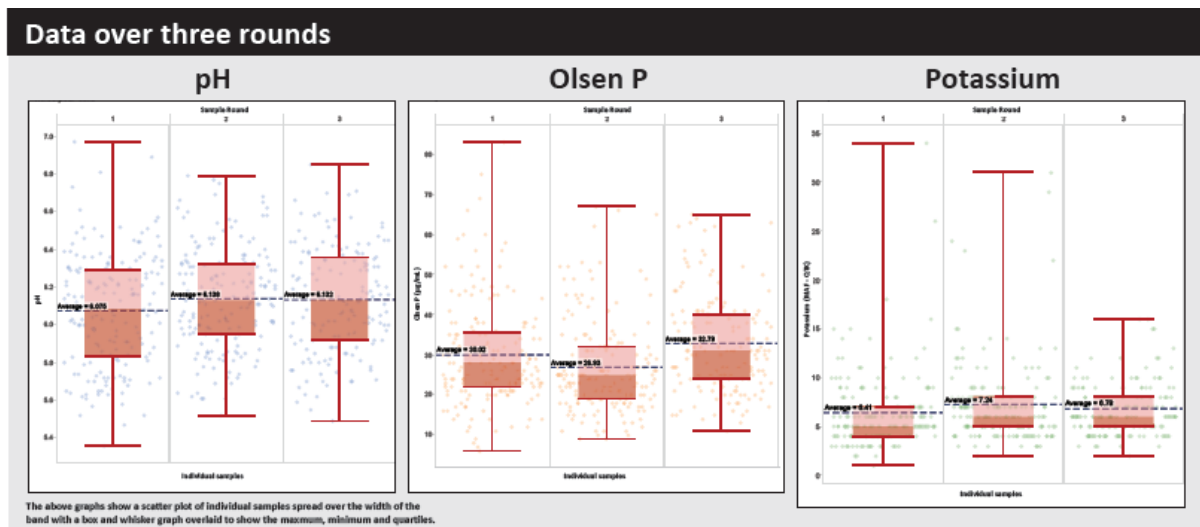*Email: rebecca.withnall@ravensdown.co.nz*

Traditionally, fertiliser plans have been generated by sampling a limited number of paddocks to represent the soil type and farm use of the whole farm. In more recent times, intensive soil testing has taken place over the whole farm, so that the fertiliser plan can be tailored to the specific nutrient requirements of each paddock. By using this approach the soil fertility variation between paddocks can be narrowed. Ravensdown has been offering whole farm testing since 2012 and couples this with paddock specific fertiliser application, to help farmers optimise their nutrient investment. ARL provides the soil analysis component of this offering. This report is a review of the whole farm testing data collated by ARL.

Since 2012 more than 300, predominately dairy farms, have participated in whole farm testing and then adjusted their fertiliser applications based on the results. Approximately 15% of these farms have completed a second round of whole farm soil testing. For this report we have used a sub set of data comprising dairy farms that have applied paddock specific fertiliser rates and have completed at least two rounds of whole farm testing. We have aggregated the data across pH, Olsen P, potassium and magnesium and evaluated the results.

The first data set, show below, comprises 30 farms with 1708 samples in round 1 and 1637 samples in round 2.

The second data set comprises 3 farms with 176,174 and 151 over rounds 1, 2 and 3 respectively.

Data over three rounds

The above graphs show a scatter plot of individual samples spread over the width of the band with a box and whisker graph overlaid to show the maximum, minimum and quartiles.

As the overall data set is reasonably small, it is difficult to draw conclusions, but trends have been identified. It is encouraging to see that, for all components, the spread of results has reduced. This suggests that more fertiliser has been applied to the areas of lower fertility and less to the areas of higher fertility.

We will continue to evaluate the data as it accumulates to see if this trend continues and if others can be identified. As the data set grows, we will look to break subsets down by soil type to evaluate how the trends are moving with respect to the optimum levels.