

BRINGING FERTILISER APPLICATION INTO THE 21ST CENTURY

Ian Yule and Miles Grafton

NZ Centre for Precision Agriculture, Massey University

Ten years ago it was pointed out that “Field CV” that for both aircraft and ground spreaders was significantly worse than the “Tested CV”. This tested CV is the result of a transverse spread pattern test conducted under controlled conditions used to determine bout width to attain minimum standards of spread pattern uniformity. There was a big misconception that somehow the tested CV’s were transposed to field performance, indeed in the majority of agronomic studies assume perfectly uniform spreading which is unobtainable. This led to a lack of interest in this matter. The advent of GPS and GIS helped researchers measure “Field CV” and results for ground spread equipment from around the world have been fairly consistent, that “Field CV” is around double the “Test CV”. Results obtained by the authors have shown that aircraft “Field CV” is higher. These factors create far greater economic loss from uneven spreading than previously imagined and underline the fact that achieving targeted variable rate application to achieve precision agriculture was a forlorn hope.

The last decade has seen considerable advances in both ground spread equipment and aerial topdressing to a point where considering targeted and variable rate application is now a realisable goal.

What we need to turn our attention to now is how we can apply the principles of precision agriculture to fertilising our hill country in an appropriate way in order to achieve greater efficiencies, and achieve improved financial and environmental goals. Historically it has always been difficult or too labour intensive and expensive to gather sufficient data from this sector to make informed decisions. The advent of improved information gathering through remote sensing technology of both spatial and temporal information has the potential to better inform our nutrient management strategies. We now have the necessary equipment to deliver the right product to the right place at the right rate at the right time. Earlier financial studies indicated that this technology could benefit an under pressure hill country sector.

Editor’s Note: A manuscript has not yet been submitted for this presentation.