



ONESYSTEM PRILLED UREA BOOSTS ACCURACY AND N RESPONSE

SOUTH ISLAND FARMERS ARE GETTING THE BENEFIT OF A NEW PATENTED SYSTEM THAT HAS BEEN SHOWN IN INDEPENDENT TRIALS TO DOUBLE THE EFFICIENCY OF UREA APPLIED TO PASTURE.

OneSystem uses prilled urea, which has 10 times as many granules as other urea. During spreading, OneSystem wets the prilled urea with water and a urease inhibitor to significantly reduce volatilisation.

Global Sustainable Farming Limited has been developing OneSystem for several years and it has extensively tested the technology on farms throughout New Zealand. The developers say it optimises the efficiency of fertiliser at little extra cost per kilo of nutrients applied.

Co-developer Shane Harold says the results they are seeing with OneSystem include significant cost savings per kg of dry matter produced.

"This is the result of increased dry matter responses per kg of nitrogen applied. OneSystem achieves responses up to 26 to 1, which equates to 2 kg of milk solids."

Shane says OneSystem also gives improved application accuracy because the prilled urea can be spread at rates as low as 35 kg/ha.

Recently OneSystem has been integrated into a combination made up of a Case IH Puma 150 CVT tractor, a Kuhn 50.2 Axis H-EMC fertiliser spreader, and an AFS XCN 1050 GPS system running ISOBUS task control.

Case IH NZ AFS product specialist Ben

Payne was given the task of integrating a GPS and data collection and processing system with the OneSystem unit.

"The AFS XCN 1050 display is the brains of the operation," Ben says. "It is an Android-based display that steers the tractor and controls the rate and section control of the spreader."

A farm manager or contractor can send jobs directly to the display from the office via Trimble Ag software to limit paperwork and ensure the operator receives accurate job information in real time.

The actual applied rate map data is then sent via modem to the Trimble AG software to allow a simple platform to pass the information on to the farmer

"Our local Case IH dealer, Cochranes of Canterbury Timaru, has spent considerable time and effort helping develop the system," Ben says.

"Working with our business partners Agri Optics NZ, we have come up with a simple and efficient system to allow the science of the OneSystem to operate at 95-98 percent accuracy, and to produce an accurate and reliable data collection and processing system."

Shane is a part-owner of the first two of these Case IH-Kuhn-OneSystem units. Both are being used in his contracting business Cutting Edge Spreading. One of the units is based in Rangitata and the other in Omakau, Central Otago.

Shane says the aim is to improve the accuracy and coverage of prilled fertiliser application and reduce nutrient loss to the environment.

"We are now achieving all three of those goals," he says. "In New Zealand under Spre-

admark, you only have to apply urea at 15 percent CV (coefficient of variation) and it's only measured once every two years. For phosphate its 30 percent CV. We are now achieving a significantly better CV than 15 percent for both products."

Shane says this achievement is not only due to OneSystem, but also the accuracy of the Kuhn 50.2 HEMC spreader and the Trimble technology.

"As you drive across the paddock, if the variation is greater than 1 percent it starts showing as a colour change on the map. Part of improving the efficiency of nitrogen and phosphate application is the accuracy of application.

"We have taken the OneSystem technology and put it into the latest spreading technology and Trimble GPS system. That combination is allowing us to achieve unprecedented accuracy."

Omakau dairy farmer Gerard Flannery did half his farm with Sustain urea at 60 kg/ha using conventional application, with the other half using OneSystem at 50 kg/ha.

"After 21 days, the results were so dramatic towards OneSystem that they switched to 90 percent using OneSystem," Shane says.

"After a further round, they were able to lengthen their grazing round to 30 days, while also increasing milk production through the increased responses they achieved with OneSystem.

"Gerard has now changed to 100 percent OneSystem and the pasture growth rates have allowed him to look at taking silage off a percentage of the farm. At the same time, they are using less nitrogen per hectare than they would have with Sustain." **RC**



CONTRACTOR SHANE HAROLD IS USING HIS ONESYSTEM PRILLED UREA UNIT IN COMBINATION WITH A KUHN AXIS SPREADER AND CASE IH PUMA TRACTOR.