Media release

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Ballance field day highlights benefits of nitrification inhibitors

Research undertaken by Dr Stewart Ledgard from AgResearch and presented at a field day in Rotoura today has clearly demonstrated the benefits of using Ballance's nitrification inhibitor product, DCn, to reduce nitrate leaching and nitrous oxide emissions as well as increase pasture growth. Dr Ledgard was speaking to an audience made up of regional council staff, farm consultants and interested farmers.

Dr Ledgard is one of the world's leading scientists in nitrogen cycling. He has been involved in research into this and other aspects of New Zealand's agricultural industry for more than 25 years, and is one of the key New Zealand scientists assessing ways in which the New Zealand agricultural industry can continue to prosper while meeting the challenge of environmental sustainability.

With the increased concern of the effect of nitrogen (N) loss on the environment, Ballance's nitrification inhibitor product, DCn, has been developed to help farmers more effectively utilise some of the naturally cycling N from urine and enhance the benefits of any N fertiliser inputs to increase overall pasture growth.

The credentials of Ballance's nitrification inhibitor product have been presented to government officials, and the Ministry of Agriculture and Forestry's draft climate change policy highlights the environmental benefits to be gained from using nitrification inhibitor products such as DCn.

DCn is an additive that helps strategically manage the nitrogen in soil. The active ingredient in DCn is dicyandiamide (DCD), a nitrification inhibitor, which temporarily reduces the potential for nitrate leaching, by holding the nitrogen in ammonium form, so that plants have time to utilise N to the maximum.

Ballance's Head of Agro-Science Warwick Catto explains that this results in less N loss to the environment and pasture growth increases.

'As farms come under pressure to manage N inputs and N effectiveness, research has shown that DCn offers a simple way to reduce nitrate leaching by up to 32% and nitrous oxide emissions by 75%, with increased pasture growth ranging from a minimum of around 5%, up to 15% in favourable conditions.'

'Actual levels of reduction and subsequent improvements in pasture growth achieved are dependant on the soil type, soil temperature, rainfall, soil nitrogen levels, number and timing of DCn applications,' says Mr Catto.

Mr Catto says that one of the best features of DCn is the granular form, making it more convenient to apply.

‘In DCn, the active ingredient is adsorbed onto a granule, making application simple. These DCn granules can be applied directly to the soil using correctly calibrated fertiliser spreading equipment.

‘Another key advantage is that DCn can readily be mixed with other fertilisers such as n-rich urea for the combined benefits of reducing spreading costs as well as nitrogen leaching and increased pasture response,’ says Mr Catto.

‘By retaining more N in the soil, you reduce fertiliser inputs, and retain cations like calcium, magnesium, and potassium, that would otherwise leach away.’

Most N leaching occurs from May to September. Research indicates that on well-drained soils, for best results, DCn should be applied in April/May and July/August to cover the high-risk leaching period over winter and retain autumn N in the system. On wetter soils best results are achieved from two applications of DCn around March and May, or one application in April.

Mr Catto says that that reducing N losses on your farm has clear benefits for the environment and for your pocket.