

Southland Case Study Demonstrates Biological Efficiency

A three year proof of concept (POC) case study of the BioAg agronomic system commenced in September 2009 at Frei Dairy, Riversdale, Southland. This coincided with the final three years of dry matter monitoring undertaken by Dairy NZ technicians for benchmarking the Southland Demonstration farm for seasons 2008/09 to 2011/12. Frei Dairy was one of six farms selected for this purpose.

The purpose of the POC study was to demonstrate that a conventional mainstream dairy system could adopt a biologically orientated soil and pasture fertility system and maintain production levels while at the same time improving fertiliser N efficiency and overall feed efficiency i.e. dry matter to milk solids.

The case study recorded all dry matter intake and fertiliser inputs for the three seasons and recorded all relevant production statistics. In addition observations on soil structure, pasture density, clover performance, pasture resilience and animal health factors were undertaken to provide a holistic farm performance overview.

Frei Dairy is a System 2 seasonal dry land farm. Current farm details are 358 cows peak season with 74 R2, 110 R1 and rearing 110 bull calves. Milking platform is 174ha with a 94ha run off support unit. Soil types are Kaweku sandy loam with clay and Dipton on the top terrace. Rainfall average is 900mm with typical distinct dry periods in December and February/March.

Performance summary – 70 to 80% reduction in N applied averaging 11kgN/ha/season. No urea or DAP has been used since 2008/2009 season. Milk solids per hectare and per cow have been maintained. Feed to milk solids efficiency up to 50% higher than Dairy NZ guidelines (Facts & Figures publication).

Production statistics from the 480kg LW Friesian cows averaged 416kgMS/cow or 1040kgMS/ha at 2.4-2.5 s.u./ha for 270-275 days in milk (1.5MS/day) . Total DM average per cow for the three seasons has averaged just 4.1t or 9.8kgDM per kg/MS. Based on DM at 12.0 MJ ME/kg this compares with published Dairy NZ Facts & Figures guidelines of 14.55kg/DMS/MS for a 500kgLW cow to produce 1.5kgMS/day or 4.73t DM/cow/yr to produce 400kg/MS.

The BioAg system comprises inputs of high energy biological cultures in combination with conventional mainstream minerals focusing on biologically functional soils to enhance animal, pasture and crop production whilst contributing to nutrient efficiency, profitability and environmental performance.

BioAg are the Australasian market leaders in agricultural microbial ferment technology.



