



## Effect of ProDairy on Milk Production

Canterbury, 2002

### Introduction

Donaghys ProDairy is a scientifically formulated probiotic extract designed to enhance digestion, feed conversion and increases milk production. It aids the establishment and performance of healthy rumen microbes which are required for efficient digestion and overall performance of dairy cattle.

### Materials and Methods

The trial was conducted over a six-week period from 11 February to 27 March. Twenty cows were drenched with 6 ml of ProDairy per cow per day and twenty untreated cows were left as controls.

The purpose of this study was to determine the effects of ProDairy on milk solid (MS) production, liveweight gain and somatic cell count (SCC).

Production was generally declining over the period of the trial. Herd tests to measure MS, milkfat, milk protein and milk volume were taken at 0 weeks, 2 weeks, 4 weeks and 6 weeks.

### Results

Trial animals were unfamiliar with drenching and this appears to have caused a temporary decline with the ProDairy treatment. A comparison twenty cows that were drenched with placebo demonstrated this drench aversion. After 6 weeks of treatment the cows were noticeably more at ease with being drenched.

The final herd test data shows a significant advantage from using ProDairy, including an increase of milk protein of 15.3% (Table 1) relative to control. Relative to control, ProDairy increased milk volume, milks solids and increased milk protein in proportion to milk fat production.

**Table 1: Relative Change in Production Parameters (change in ProDairy Treated cows over Control).**

Parameter	Herd Test		
	1	2	3
Milksolids (kg)	-2.43%*	0.70%	10.52%**
Milk fat (kg)	-4.84%*	-2.68%	6.62%*
Milk protein (kg)	0.43%*	4.75%*	15.33%**
Volume (L)	3.40%*	5.42%*	16.78%**

No asterisk = no statistical significance (P<0.10)

\* = weakly statistically significant (P<0.10)

\*\* = statistically significant (P<0.05)

**Table 2: Herd Test One Corrected for Placebo (% increase due to ProDairy over Placebo)**

Parameter	Herd Test 1
Milk Solids kg	6.4%**
milk fat kg	7.1%**
milk protein kg	5.9%**
Volume L	8.2%**

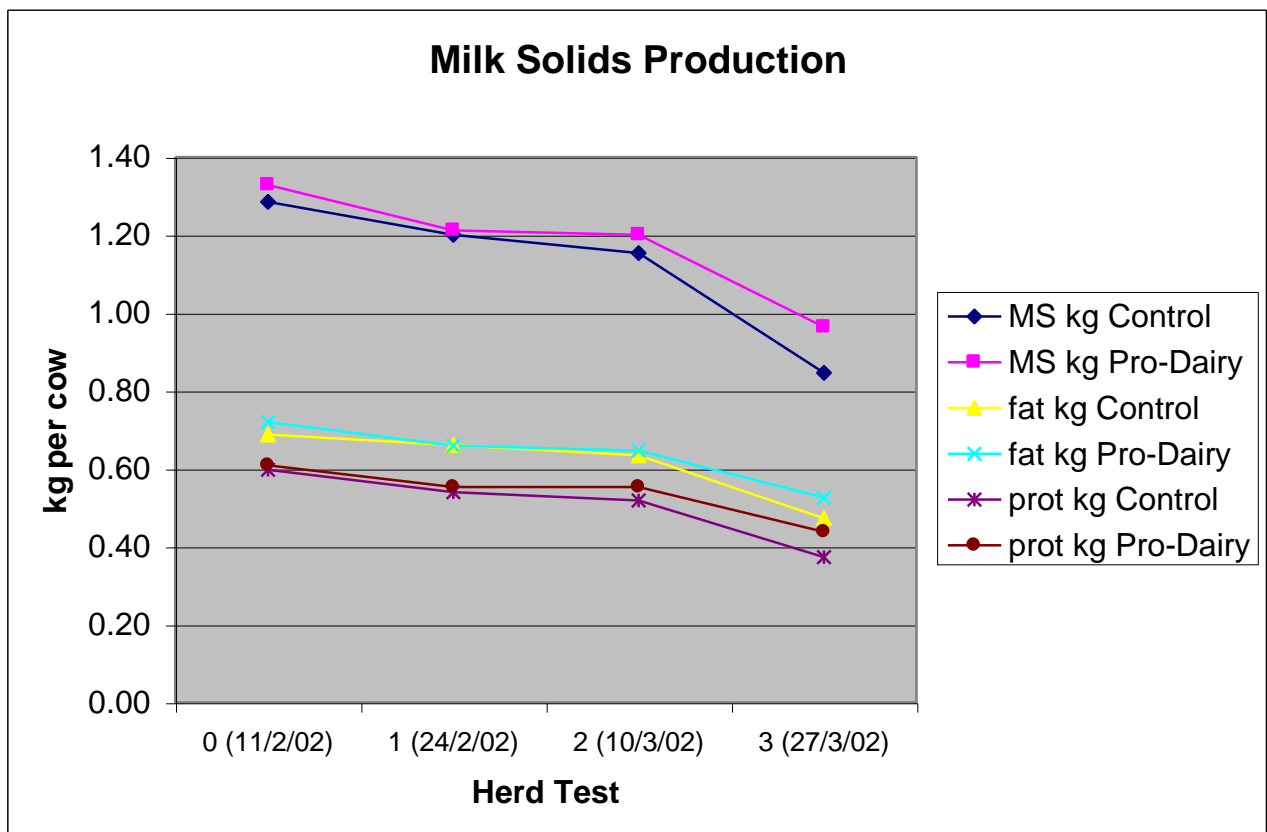
\*\* = statistically significant (P<0.05)



The ProDairy cows started off producing slightly more milk solids (0.04 MS kg/day), which was statistically insignificant. Table 3 shows the trend towards increased milk protein, milk fat and total milk solids over the course of the trial. Again, the response to ProDairy was masked in the first two herd tests by an aversion to drench treatment.

**Table 3: Relative Change in Production Parameters (increase due to ProDairy over Control)**

Parameter	Treatment	Herd Test			
		0	1	2	3
Milksolids (kg)	Control	1.29	1.20	1.15	0.85
	ProDairy	1.33	1.21	1.2	0.96
	<b>Difference</b>	<b>0.04</b>	<b>0.01</b>	<b>0.05</b>	<b>0.11</b>
Milk Fat kg	Control	0.688	0.661	0.635	0.473
	ProDairy	0.719	0.659	0.647	0.526
	<b>Difference</b>	<b>0.031</b>	<b>-0.002</b>	<b>0.012</b>	<b>0.053</b>
Milk Protein kg	Control	0.597	0.540	0.519	0.373
	ProDairy	0.609	0.553	0.553	0.438
	<b>Difference</b>	<b>0.012</b>	<b>0.013</b>	<b>0.034</b>	<b>0.065</b>





### Effect on Body Weight and Somatic Cell Counts

An important factor in assessing the effectiveness of ProDairy on dairy cows is to determine if the increase in milk production results in less allocation of resources to body weight. Also it is interesting to analyse any effect on somatic cell count.

In this trial it can be seen that at the same time as increasing milk production relative to control, the ProDairy treated cows tended to gain more weight (115% of weight gain in control cows, Table 4) though this was not statistically significant. It does however show that the increased milk production was not “coming off the cow’s back”.

**Table 4: Weight Gain of Cows over Trial Period**

	<b>Start Weight (kg)</b>	<b>End Weight (kg)</b>	<b>Weight Gain (kg)</b>
Control	427.1	449.3	22.2
ProDairy	415.9	444.2	28.3

ProDairy treated cows also had reduced somatic cell counts over the duration of the trial. However, this reduction was not statistically significant. By the end of the trial, the somatic cell count of the control cows had increased by 78,000 to average 183,000 whereas the somatic cell count of the ProDairy treated cows had increased by 50,000 to 144,000.