



## Ruminant response to non-live probiotic microorganism extracts

Canterbury, 2012

### Introduction

A trial was established at Gleneyre, Oxford to investigate a possible relationship between a probiotic extract product RumenZyme Plus (Donaghys Industries Ltd) and lamb growth rate.

### Materials and Methods

The trial involved ram lambs weaned in mid-December 2011. On 22 December, lambs were allocated randomly to either treatment (64 lambs) or control (63 lambs). Where lambs had similar tag type, and level of growth from birth to weaning, half were randomly assigned to treatment and half randomly assigned to control. The treated lambs received 4 mL per head of RumenZyme Plus while the control animals were not drenched.

Lambs were weighed again on 20 January 2012 and treated lambs that were located received a further 4 mL dose of RumenZyme Cobalt Plus. A final weighing was conducted on 2 February prior to slaughter. In the final weighing lambs had generally lost weight compared to the weighing 13 days prior (this appeared visually to be largely a reduction in fat level). Some lambs were not located in the final weighing and their data has not been included in the following analysis. Only one treated lamb that was present at the final weighing was not located during the middle weighing and thus did not receive the second treatment of RumenZyme Cobalt Plus.

At the final weighing, 55 (87.3%) control lambs and 60 (93.8%) treated lambs were located and are this included in the trial analysis. While some of the missing lambs may have died they also may simply have been missed in the drafting.

### Results

RumenZyme Cobalt Plus treated lambs tended to have higher growth rates than control during the trial, this was statistically significant for growth over the whole trial ( $p=0.040$ ). Taking lamb growth rate in the 13 day period between the second and the final weighing, treated lambs tended to lose less weight ( $p=0.017$ ).

**Table 1: Growth Data for Lambs Present at Final Weighing – mean values per lamb**

Treatment	Growth Since Weaning before Trial (kg)	Starting Weight for Trial (kg)	Middle Weight for Trial (kg) <sup>b</sup>	Final Weight for Trial (kg)	Trial Growth Period 1 (kg) <sup>b</sup>	Trial Growth Period 2 (kg) <sup>b</sup>	Growth Over Trial (kg)
Control	1.93	35.12	39.19	38.26	3.81	-0.87	3.15
RZP	1.98	34.85	39.47	38.95	4.60	-0.49	4.10
p-value for difference <sup>a</sup>	0.863	0.645	0.664	0.294	0.081*	0.017**	0.040**

a: two tailed t-test, unequal variances method used for trial growth data due to lower variance of treated lamb growth rates. \* = weakly statistically significant, \*\* = statistically significant

b: Missing lambs from the middle weighing (six control and one treated) mean a slight discrepancy for these three figures that are calculated on the middle weight value



The difference in growth over the trial period was an extra 0.955 kg live-weight for RZP treated lambs. This has an estimated value of \$2.94 (at \$6.15 per kg carcass weight assumed at 50% of liveweight) for an RZP product cost of around 31.5 cents per lamb (for two doses).