

New generation yeast hydrolysate affects milk yield and somatic cell count

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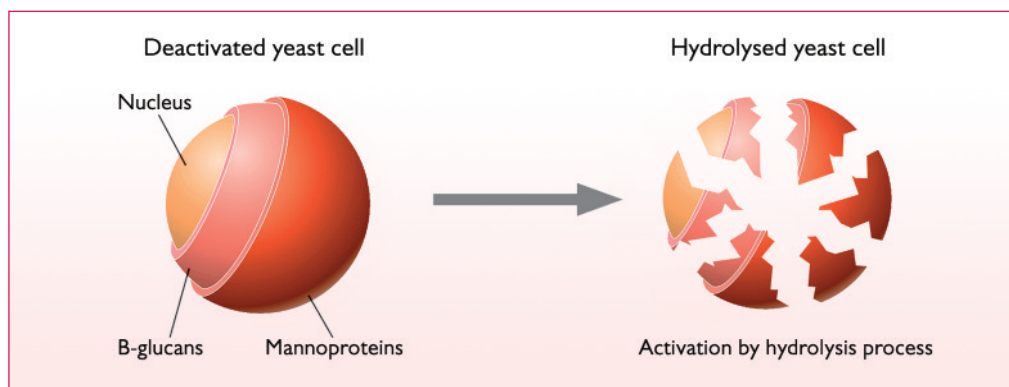
There is a new yeast product on the market for ruminant animals and results from a dairy trial presented at the ADSA-ASAS conference in July 2014 in Kansas City had some interesting results. Developed originally by Cultor, Finland and now sold under the Suomen Rehu brand, Progut Rumen significantly increased milk yield, while at the same time reducing SCC in a dairy cow study.

The objective of the study was to determine if supplementing cows with a yeast hydrolysate product (Progut Rumen) would have an effect on milk production, milk composition and somatic cell count.

The trial took place on a commercial farm with facilities suitable for research. The average milk yield per cow was 9,800kg on the farm at the time of trial. Cows were housed throughout the year and milked twice per day in a standard herring-bone milking parlour.

Trial protocol

Two groups of Holstein-Friesian dairy cows (n=248) were balanced for parity, DIM (days in milk), pre-experimental milk yield, milk composition and body condition score and assigned to either a control (n=127) or a Progut Rumen treatment (n=121). Cows were housed in two groups according to treatment. Progut Rumen was fed to the treatment group at a rate of 10g/cow/day. The trial was carried out over two replicates (10 week period and an eight week period). Milk yield, milk composition and somatic



Left, a deactivated yeast cell and, right, a hydrolysed yeast cell.

cell counts were recorded weekly for all cows. Somatic cell count was converted to somatic cell score (Log₁₀ (SCC)) for statistical analysis.

All cows were fed an ad-libitum basal diet of zero grazed grass, grass silage, maize silage and concentrates in a PMR (Partial Mixed Ration) formulated to support 24 litres of milk production per day. Extra concentrates were fed as a top up in the milking parlour according to a pre-defined plan and equal for both groups.

Data analysis

The dataset was divided in three ways for the analysis; the entire dataset, all cows with an average daily milk yield >24kg, and finally all cows with an average daily milk yield >30kg.

All data were analysed in SAS with a repeated measures mixed model with the appropriate covariance structure determined by Bayesian Information Criterion. The fixed effects included treatment, season,

parity (1 to ≥5), and week and the interactions between treatment and parity, and treatment and week with a random effect included for cow.

Results and conclusion

The addition of Progut Rumen to the diet resulted in a significant increase in milk yield for all cows on the treatment with cows milking >30kg increasing by 1.79kg (P<0.05) while cows in the >24kg dataset had a milk yield increase of 1.29kg (P<0.01). There was a significant decrease in somatic cell score (SCS) for Progut Rumen treated cows compared to the control treatment in the entire dataset (P<0.01), >24kg dataset (P<0.05) and the >30kg dataset (P<0.05).

Discussion

This combination of results is interesting. In this study, the use of Progut Rumen resulted in an increased milk production, while at

the same time a reduction in somatic cell scores. This could make it a very valuable component of dairy cow diets especially considering the fact that the results were highly significant.

It is worth noting that the milk yield increase was seen not only in high yielding cows but also in cows with more moderate milk yields.

Progut Rumen is a '3 in 1' yeast hydrolysate manufactured using a special hydrolysis process resulting in more soluble, more active components including betaglucans, manno-oligosaccharides, nucleotides and peptides.

In previous studies, using rumen simulation models, Progut Rumen was seen to act as a rumen stimulant, increasing the number of rumen microbiota, VFA and propionic acid production. It supported the growth of lactate utilisers in the rumen such as *Selenomonas* spp. and *Megasphaera elsdenii*. ■

References are available from the author on request

Table 1. Milk yield.

Milk yield	Control	Progut Rumen	Difference	Statistical significance
Entire group	25.32	26.09	0.77	p<0.01
Cows milking >24kg	28.36	29.65	1.29	p<0.01
Cows milking >30kg	33.19	34.97	1.79	p<0.05

Table 2. Somatic cell score.

Somatic cell score	Control	Progut Rumen	Difference	Statistical significance
Entire group	2.17	2.05	0.11	p<0.01
Cows milking >24kg	1.93	1.81	0.11	p<0.05
Cows milking >30kg	1.76	1.52	0.24	p<0.05