

## Unique benefits of Progut® Rumen:

- 1 Patented hydrolyzed yeast
- 2 Stable during storage and pelleting
- 3 Acts as a rumen stimulant

### For cows:

- 4 Active for cows with different milk yields
- 5 Scientifically proven milk yield increase
- 6 Scientifically proven SCC reduction

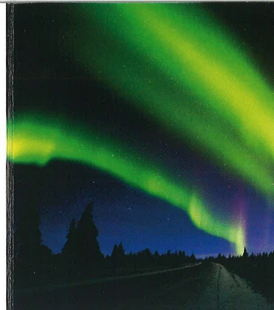


### For calves:

- 7 Scientifically proven immune stimulation
- 8 Scientifically proven to improve faecal + health scores

## Recommended dosage rates:

<b>Dairy cows</b> 2 weeks before calving and during the lactation	10 g/day
<b>Beef cattle</b>	1.5 g/100 kg/bw
<b>Calves</b> In starter feed or milk replacer	2 g/day
<b>Sheep and goats</b>	1 g/day



Nature creates  
– we refine

At Suomen Rehu, we combine large scale animal feed production with dynamic and highly innovative research and development.

Coming from a country so far north as Finland, it has always been the case that we must add value and be innovative to survive.

New product innovations and patented feeding solutions are the forces that drive us forward.

Progut® Rumen is a unique new generation yeast which, in trials, has been seen to significantly increase milk yield in cows while at the same time reducing the somatic cell score. Trials with calves saw an improvement in the faecal score, health score and a stimulation at the immune system.

*The harsh winter climate covers the country in a blanket of snow and ice. Temperatures fall to -25°C, the seas freeze over and the beautiful Aurora Borealis lights up the sky.*

We are inspired by nature.

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progut® rumen



**NEW GENERATION  
HYDROLYZED YEAST**



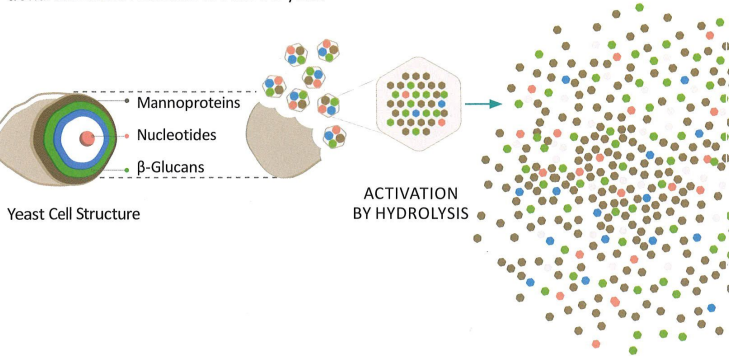
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# What is Progut® Rumen?

**Progut® Rumen** is a '3 in 1' yeast-based feed ingredient. Whole yeast cells are extracted from the brewing industry and processed in a way that enhances all the nutritional and health benefits of both the yeast

cell wall and cell contents. It is rich in mannoproteins, beta glucans, nucleotides and peptides. It is stable during storage and pelleting.

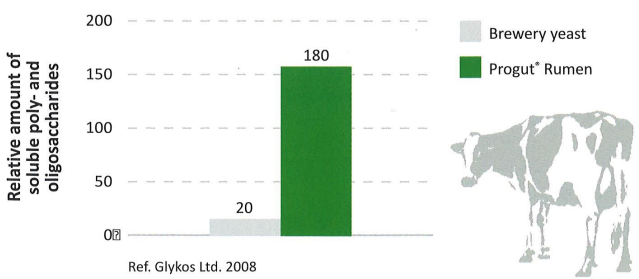


# What makes it unique?

What makes Progut® Rumen unique is the hydrolysis process we use to break down the yeast cell. Yeast cells are first deactivated by heat treatment before being hydrolysed to release more effective soluble,

**bioactive particles.** This is a controlled process which results in a more consistent product with consistent results. Suomen Rehu has patented the use of this yeast hydrolysate in animal feeding (EP1387620).

## 9 times more soluble, bioactive particles



After hydrolysis, Progut® Rumen contains 9 times more soluble poly and oligosaccharides than the deactivated yeast raw material before hydrolysis. – Glykos Ltd Finland

# Progut® Rumen enhances rumen fermentation

Our extensive rumen simulation trial work at Alimetrics, Finland and Hannover University, Germany has shown that Progut® Rumen can enhance rumen fermentation by:

- ↑ Numbers of rumen microbiota
- ↑ Volatile fatty acid production
- ↑ Propionic acid production

# Recently published trial work for Progut® Rumen

Suomen Rehu have conducted many trials on Progut® Rumen which demonstrate the effects on animal performance and production. The most recently presented trials are as follows:

## 1. Dairy Trial 2013

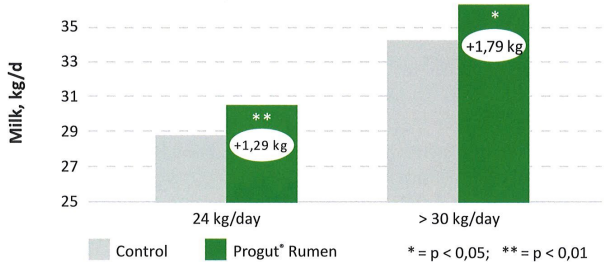
**The effect of supplementing dairy cows with a hydrolyzed yeast product (Progut® Rumen) on milk production and somatic cell scores.** Gaffney D., Sheehy M., Vuorenmaa J., Fahey A. (2014). In: Journal of Animal Science. Vol. 92, E-Suppl. 2/1. Dairy Sci. Vol. 97; E-Suppl., Abstract 1609.

### Significant findings:

#### A. Progut® Rumen increased milk yield for all cows

The trial was carried out on 248 Holstein-Friesian cows with an average milk production of 9800 kg. Before the experiment the control and treatment groups were balanced for parity, DIM, BCS, pre-experimen

tal milk yield and composition. Cows in both groups were fed similar diets of fresh grass, grass silage, maize silage and concentrates.

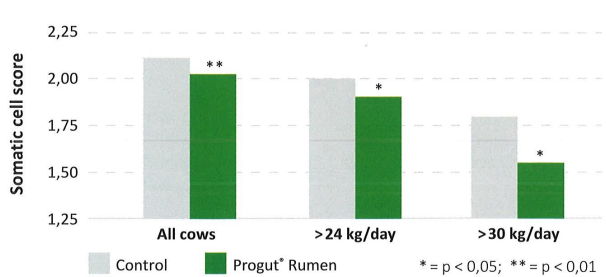


Ref. Gaffney, Sheehy, Vuorenmaa, Fahey 2013

**Progut® Rumen 10 g/hd/day was fed to cows in treatment group.** Progut® Rumen significantly increased the milk yield of all the cows in the treatment group (P<0.01). Cows milking >30 kg/day increased by 1.79 kg/day (P<0.05) while those milking >24 kg/day had an increase of 1.29 kg/day (P<0.01).

**Progut® Rumen can increase milk yield for moderate, as well as high yielding cows.**

#### B. Progut Rumen reduced somatic cell count for the entire treated group



Ref. Gaffney, Sheehy, Vuorenmaa, Fahey 2013

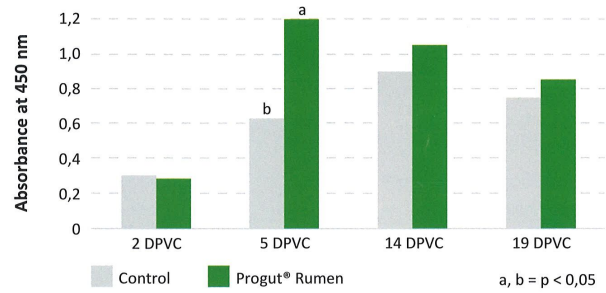
The reduction in SCC, as measured by somatic cell score (Log10 (SCC)), was significant for the entire group (P<0.01). The greatest reduction came from the higher yielding cows. The SCC figures for the entire group of cows showed that the treated group had a SCC of 62,000 cells less than the untreated group (384,990 cells vs. 322,370 cells).

**Progut® Rumen can reduce SCC as part of your milk quality program.**

## 2. Calf trial – immune response

**Effects of hydrolyzed yeast supplementation in calf starter on immune responses to vaccine challenge in neonatal calves.** Kim, M. et al(2011). In: Animal, 5, 953–960.

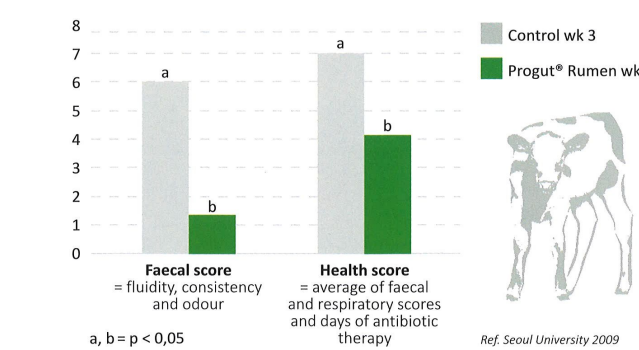
### A. Calves fed Progut® Rumen produced antigen specific IgA more efficiently after vaccine challenge



Ref. Seoul University 2009

5 days post vaccine challenge, the Progut® Rumen fed calves had significantly more (P< 0.05) antigen specific IgA than the control calves.

### B. Calves fed Progut® Rumen displayed a significantly better faecal score and health score (P< 0.05) than untreated calves in this trial



Ref. Seoul University 2009

### Progut® Rumen contains a 3 in 1 solution for calves:

- Binds E.coli, salmonella and prevents scour.
- Stimulates the immune system.
- Helps develop rumen function.

**Progut® Rumen can be fed in the starter feed or through the milk replacer.**

Other publications: Kettunen, H. et al. (2016). Yeast hydrolysate product enhances ruminal fermentation in vitro. In: Journal of Applied Animal Nutrition, Vol. 4; e1, 7 pages.

Meissner, H. et al. (2014). Efficacy and mode of action of selected non-ionophore antibiotics and direct-fed microbials in relation to Megasphaera elsdenii NCIMB 41125 during in vitro fermentation of an acidosis-causing substrate. In: Livestock Science, 162, 115–125.