

# Calorgreen Pvt. Ltd.



Empowering farmers with science and  
sustainability





## About Company

Calorgreen Pvt. Ltd is a pioneering biotechnology-based company specializing in innovative feed supplements that enhance the health and productivity of livestock. Our mission is to revolutionize animal nutrition through the power of science, sustainability, and cutting-edge biotechnological advancements. At Calorgreen, we are driven by the belief that animal feed should not only improve performance but also promote overall well-being in a way that is environmentally responsible and sustainable. Our product range includes bio-based supplements that optimize nutrient absorption, boost immunity, improve digestion, and enhance growth rates—all while reducing the environmental impact associated with conventional feed practices.

Founded by a team of experts in biotechnology and animal nutrition, Calorgreen integrates research-driven innovation with a deep understanding of the dairy industry. Through the application of natural, bio-based ingredients and advanced fermentation technologies, we strive to make a lasting impact on the future of animal husbandry and food production.

## Why Choose Us?

- **Optimize Digestive Health:** Enhance nutrient absorption and gut health for improved cattle performance.
- **Boost Immune System:** Strengthen the immune system to reduce the risk of disease and improve overall herd vitality.
- **Sustainable Farming Practices:** Reduce the need for antibiotics and other chemicals while improving the efficiency of feed.
- **Increase Productivity:** Promote faster growth rates and higher milk production

## Our Products:

- Rumigreen
- DiaYeast Junior
- Rumisoak
- DiaYeast



## Our Technology:

### What is Solid State Fermentation (SSF) of yeast?

Fermentation is a process brought about by microbial action in any organic medium where acid/gas/alcohol is produced. e.g. curd making from milk, idli batter from soaked rice, etc. Solid state fermentation is a fermentation process occurring in absence of free flowing water, employing either a natural support or an inert support as the solid material.

### What happens during SSF of yeast?

Yeast grows in a medium comprising of

- Agricultural residues like wheat bran
- Nutrient medium with carbon and nitrogen source
- Inoculum of probiotic culture
- Moisture content of 35 – 40 %

The culture multiplies and secretes many biochemicals such as vitamins, organic acids, peptides and enzymes collectively called as nutrilites. Probiotic culture grows along the solid state particles and remains attached to the same matrix.

### Final products of SSF:

- Live probiotic culture
- Partially digested solid state matrix having protein content of approximately 30% and crude fibre content of approximately 12%
- A range of nutrilites

These nutrilites bypass rumen and promote growth of desirable bacteria in the gut. They withstand pelleting temperature and are heat stable.



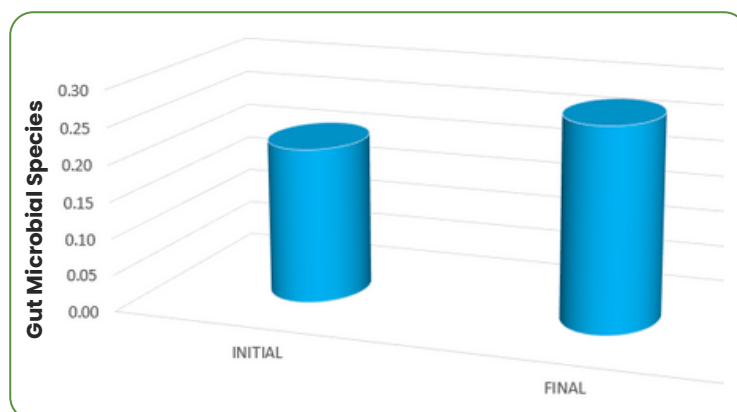
# Rumigreen<sup>®</sup>

## Solid state fermented yeast for cattle

- The feeding practice in ruminants in the developing and under developed countries mainly depends on low quality fibres, grasses and crop residues which results in reduction of digestibility of nutrients.
- Manipulating rumen digestion system through the addition of direct feed microbials (DFM) to ruminant rations enhance cellulose digestion and improvement in the performance of the animals
- Probiotics or direct fed microbials (DFM) are live microbial food supplement which when fed improve microbial balance of the host. Commonly used probiotics include *saccharomyces cerevisiae* for enhancing the activity of beneficial microbes in the gastrointestinal tract, thus improving the digestibility of nutrients and production potential of the animals.
- Besides, yeast supplementation also reduces the risk of lactic acidosis in ruminants by stabilization of the ruminal pH. High lactic acid concentrations in the rumen and decreased ruminal pH often result in ruminal dysfunction when high concentrate diets are fed.

## Effects of Live yeast culture on ruminants:

Yeast increases the total number of culturable bacteria in the rumen. Rumen contents are absolutely anaerobic, but low concentration of dissolved oxygen can be detected during the daily feeding cycle. Oxygen enters the rumen while the animal is eating, both with the feed and saliva. Yeast consumes the available oxygen from rumen and creates an anaerobic condition (without oxygen) which stimulates the growth and multiplication of cellulolytic and proteolytic bacteria in rumen. It improves the digestibility of nutrients and a significant improvement is seen in fibre digestibility in rumen. Also, it increases volatile fatty acids (VFA) production in rumen which improves the milk production and milk fat.



**Fig 1:** Change in gut microbial species in mixed ruminal fluid due to yeast supplement

## Unique Features

- **Contains solid state fermented yeast:** Due to this feature, nutrilities are obtained along with the live yeast which is an additional advantage.
- **Withstands pelleting temperature:** As solid-state fermented yeast in Rumigreen is surrounded by organic medium (due to the production of nutrilites by yeast) they are protected from the high temperature of pelletization. Only marginal drop in the count of yeast occurs during pelletization. The yeast cells are anchored to the solid medium along with the nutrilites.
- **It is a synbiotic containing probiotic and prebiotic:** As Rumigreen contains both pro and prebiotics, it significantly improves the growth and multiplication of ruminal microflora and beneficial microflora in the intestine. So, the ruminal and the intestinal environment is improved through supplementation of Rumigreen.

## Advantages

- Stimulates anaerobiosis in the rumen
- Helps improving dry matter intake and nutrient digestibility
- Helps in microbial digestion
- Strengthens the activity and count of beneficial bacteria in the gut and rumen
- Prevents colonization of pathogenic bacteria in the digestive tract
- Increases milk yield without causing stress to the animals
- Improves milk fat and maintains milk SNF

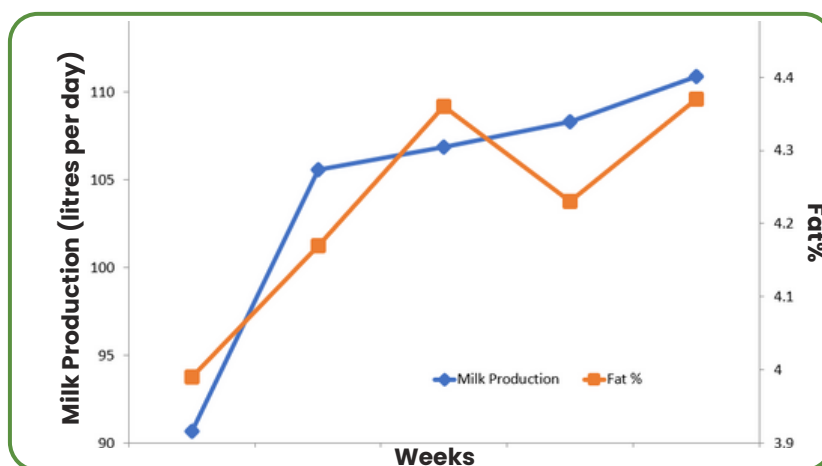


Fig 2: Weekly milk production and fat% change in field trials at Gujarat

# Contents of Rumigreen

## PROBIOTICS

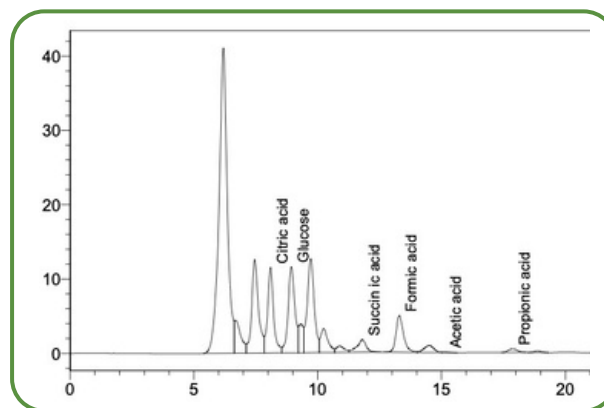
- Probiotics are micro-organisms which encourage the growth of other beneficial micro-organisms in rumen compartments and intestine of the cattle.
- The probiotics associated with the ruminants are mainly yeast such as *Saccharomyces cerevisiae*.
- Probiotics encourage the growth and proliferation of the anaerobic rumen micro-flora responsible for almost 75% of rumen digestion.

## PREBIOTICS

- Prebiotics are non-digestible carbohydrates in feed which favourably influence the animal by stimulating the growth and activity of beneficial micro-flora such as Lactic acid bacteria. e.g. Mannan oligosaccharides (MOS) in the small intestine.
- Prebiotics bypass the rumen and reach the intestine. They block the attachment of pathogenic bacteria to the animal's intestine and prevents its colonization that can result in disease. They bind to the pathogens and are excreted out of the body.
- Feeding of prebiotics helps in proliferation of these probiotic bacteria which inhibit growth of pathogens like *E.coli*. This helps in reduction of flatulence and diarrhea and also, improving the quality of dung.

## NUTRILITES

- Nutralites are a large number of secondary and tertiary metabolites secreted during growth and multiplication of yeast cells in solid state fermentation which are retained in this product.



**Fig 3:** Chromatogram of organic acids

- Nutralites in Rumigreen are: Peptides, amino acids, organic acids, vitamins, minerals, reducing sugars & various digestive enzymes. Some nutralites are utilized in the rumen and they help in proliferation of cellulolytic bacteria by providing micronutrients and metabolizable energy, others bypass the rumen and reach the intestine supporting the proliferation of lactic acid bacteria. Amino acids, vitamins and minerals are absorbed through gut wall.

## For Top dressing:

### COMPOSITION:

Saccharomyces cerevisiae – 10 billion cfu/gm  
Extracellular yeast metabolites –  $5 \times 10^5$  mcg

### RECOMMENDED USAGE:

Cow/Buffalo and Camel: 10 gm per animal per day  
OR as directed by nutritionist

## For Compound/pellet feed:

### COMPOSITION:

Saccharomyces cerevisiae – 5/10 billion cfu/gm  
Extracellular yeast metabolites –  $5 \times 10^5$  mcg

### RECOMMENDED USAGE:

1 to 2 kg per ton of feed  
OR as directed by nutritionist

## Available Packaging:



1 kg



25kg

# DiaYeast Junior<sup>®</sup>

## Need for the solution?

Newborn calves are sensitive to environmental changes and colonization by opportunistic and potentially pathogenic bacteria, which may lead to their high morbidity and mortality, causing huge economic and productivity losses that undermine healthy and sustainable development of animal husbandry.

Moreover, even if calves recover from the diarrhea, their subsequent growth and development are hindered, which later affects their productivity in adulthood. Supplementing probiotics is a comparatively easier way to manipulate the microbiome during early life, when gut microbiota is being established, because in later stages it is less effective as the rumen is large and highly anaerobic.

## What is Diayeast Junior?

We have developed our product Diayeast Junior a solid state fermented consortium of multispecies probiotic viz. *Saccharomyces boulardii*, *Lactobacillus sporogenes* and *Bacillus subtilis* which improves calf growth performance by improving immune function and balancing structure of intestinal microbiota. Diayeast Junior reduces the incidence of diarrhea and improves the health of calves. It also reduces heat stress and improves dry matter intake leading to overall increase in weight gain. Consortium of probiotics improves the immune responses by increasing serum IgA and IgM concentration leading to reduced infection.

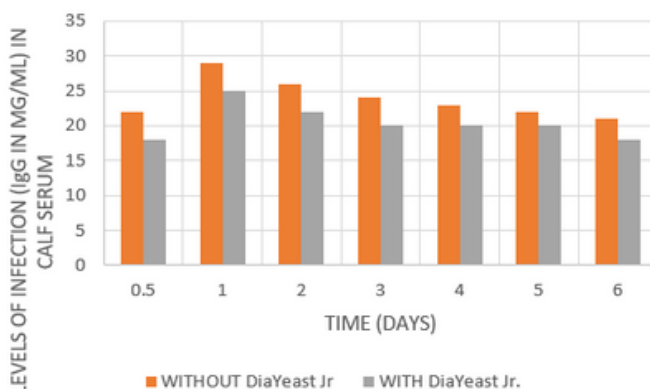


Fig 4: Percentage reduction in infection level (IgC) vs. time

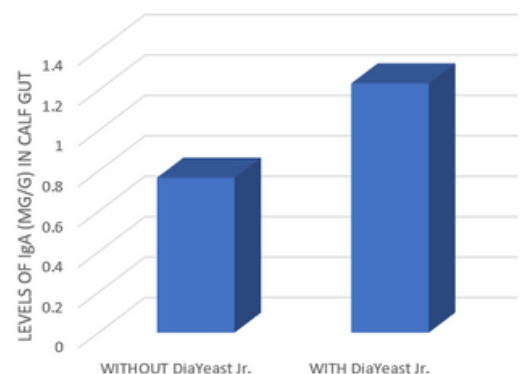
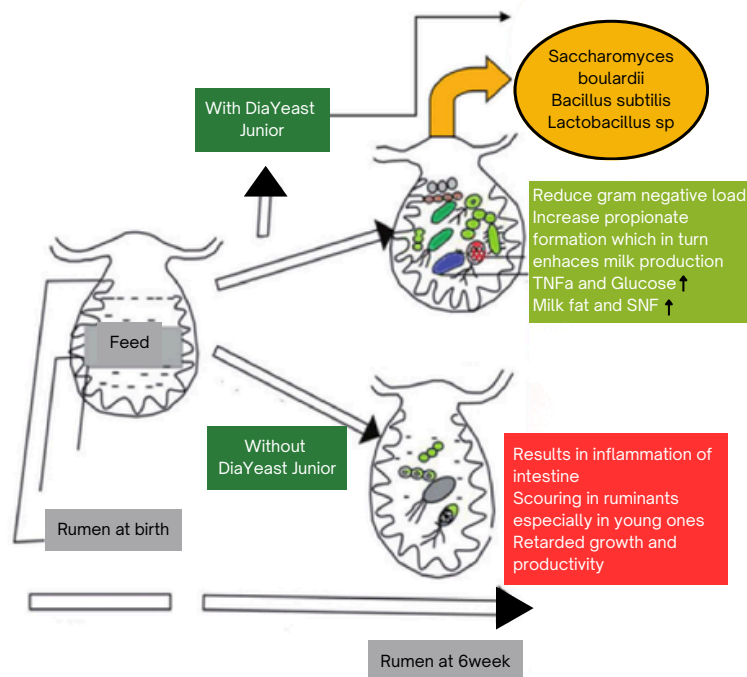


Fig 5: Protection against infections (IgA) increases due to supplementation with DiaYeast Junior

# Novel probiotic consortium supplement for calves



## Advantages

- Reduces the heat stress
- Improves dry matter intake
- Decreases diarrhea symptoms which results in low mortality and better growth rate
- Works as an alternative anti-stressor in the diets of young dairy calves
- Useful for the treatment of GI tract disorders such as diarrhea symptoms

## For Top dressing:

### COMPOSITION:

Saccharomyces boulardii –  
10 billion cfu/g  
Bacillus subtilis – 10 billion cfu/g  
Lactobacillus sp – 10 billion cfu/g

### RECOMMENDED USAGE:

1 gm per animal per day  
OR as directed by nutritionist

## For Milk replacer/ Calf starter:

### COMPOSITION:

Saccharomyces boulardii –  
10 billion cfu/g  
Bacillus subtilis – 10 billion cfu/g  
Lactobacillus sp – 10 billion cfu/g

### RECOMMENDED USAGE:

500gm per ton  
OR as directed by nutritionist

# RumiSoak<sup>®</sup>

## What is Soaked feed?

- Soaked feed is the process of preparing ruminant feed ingredients e.g. coarse corn, cotton seed cake, ground nut cake etc in wet form.
- Some of these feed ingredients are in powder form, which spread in the atmosphere during their application and so are mixed with water to avoid loss during its application while some feed ingredients are in cake form which is very hard and available as big pieces for application. Hard cake is made soft by soaking in water.
- Ratio of agriculture residue and water mixture is 1:2. It is soaked in water for minimum 6-8 hours before feeding to ruminants

## Role of microorganisms in making Soaked feed

- Main role of probiotic microorganisms is to attack cellulosic and hemicellulosic material including starch and release nitrogen in amino acids form.
- Probiotic microorganisms also release easily metabolizable simple sugars and organic acids which impart fruity flavour and results in protein rich feed.
- If soaked feed is prepared by just mixing agriculture residues with water for treatment span of 6-8 hours various aerial microorganisms spoil the wet nitrogen rich soaked feed ingredients which results in undesirable smell.
- If specific probiotics, Bacillus, Lactobacillus and yeasts are used to prepare soaked feed they will reduce the possibility of contamination by aerobic microorganisms.
- Role of microorganisms is to produce highly palatable, nutritive soaked feed with fruity odor for ruminants

## Advantages

- Stimulates partial digestion of nitrogen rich feed ingredients In soaked feed
- Helps in improving palatability
- Imparts fruity odour
- Prevents contamination by aerobic microorganisms in nitrogen rich wet ingredients.
- Increases milk yield without causing stress to the animals

## For Top dressing:

### COMPOSITION:

Bacillus subtilis – 1 billion cfu/gm  
Lactobacillus sporogenes –  
1 billion cfu/gm  
Saccharomyces cerevisiae –  
1 billion cfu/gm

### RECOMMENDED USAGE:

100 gm RumiSoak to be mixed with 10  
kg agriculture residues  
OR as directed by nutritionist

# DiaYeast

## Novel probiotic yeast supplement for cattle

### Yeast in Ruminant feed

- Diayeast is probiotic yeast supplement containing live *Saccharomyces boulardii* along with metabolites
- It is non-pathogenic yeast
- Often used for the treatment of gastrointestinal tract disorders such as diarrhea symptoms
- Genetically close to the model yeast *Saccharomyces cerevisiae*
- It secretes special protease enzyme which neutralize certain bacterial toxins.
- It stimulates an immune response in the intestinal mucosa

### Advantages

- Non-pathogenic yeast to normalize bowel transit time.
- Gluten-free, modulates immunity
- Results in healthy and balanced gut
- Improves digestive health
- Useful for the treatment of GI tract disorders such as diarrhea symptoms

### For Top dressing:

**COMPOSITION:**

*Saccharomyces boulardii* -  
10 billion cfu/g

**RECOMMENDED USAGE:**

1 gm per animal per day  
OR as directed by nutritionist

## Contact Information



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