

# lumensa™

## For Ruminants

Nutritional Supplement for Dairy Cows



### Lumensa for Ruminants

Is a revolutionary, naturally derived supplement, combining the power of fermentation metabolites formed by multi-strain probiotic microorganisms, bio-available vitamins and minerals, antioxidants and active ingredients of plant extracts to enhance the nutrition and well-being of ruminants. It contains antioxidants to eliminate harmful free radicals, vitamins, minerals and trace elements to help maintain balanced nutrition, and probiotic metabolites to support a healthy digestive tract and immune system. Through a proprietary multi-stage process, product components are activated and stabilized in an easy to use liquid concentrate.

Lumensa for Ruminants compliments daily feed intake. Trials have proven that the product increases milk production, butterfat content and milk solids, for an overall improvement in productivity and profits.

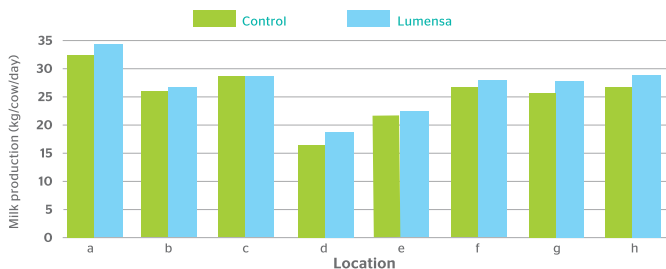
Lumensa for Ruminants is safe to use, is not a drug and does not contain live microorganisms.

### Lumensa™ for Ruminants

- Increased milk production & milk solids
- Greater butterfat content
- Increased protein content
- Better overall health
- Reduced somatic cell concentration

**Trial Results:** Lumensa for Ruminants increased milk production by 6.3%, based on 13 trials, in 3 countries over 8 years. Increased butterfat production by 6%, based on 10 trials, in 2 countries over 5 years and increased production of milk solids by 8%, based on 6 trials, in 2 countries over 4 years.

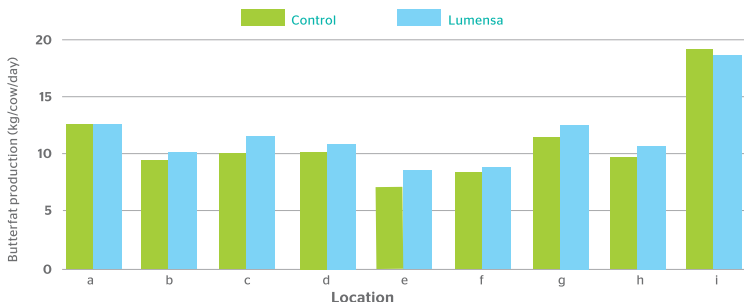
### Lumensa for Ruminants increased milk production by 4.7% in trials conducted in USA



**Location:** a) Erda, Utah; b) Ogden, Utah; c) West Weber, Utah; d) Petaluma, California; e) Sebastapol, California; f) Salinas, California; g) Sonoma, California; h) Tremonton, Utah

Lumensa for Ruminants increased milk production by an average of 4.7% in eight trials, conducted in the USA, in the top-producing commercial dairy facilities in California and Utah over a 10 year period.

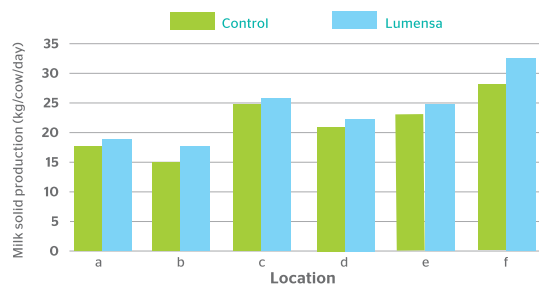
### Lumensa for Ruminants increased butterfat production by 4.8% in trials conducted in USA



**Location:** a) Erda, Utah; b) Ogden, Utah; c) West Weber, Utah; d) Hollister, California; e) Petaluma, California; f) Sebastapol, California; g) Salinas, California; h) Sonoma, California; i) Tremonton, Utah

Lumensa for Ruminants increased butterfat production by an average of 4.8% in nine trials conducted in the USA in top-producing dairy facilities in California and Utah.

### Lumensa for Ruminants increased milk solids production by 8%



**Location:** a) Sebastapol, California; b) Petaluma, California; c) Salinas, California; d) Hollister, California; e) Sonoma, California; f) Dos Pinos, Costa Rica

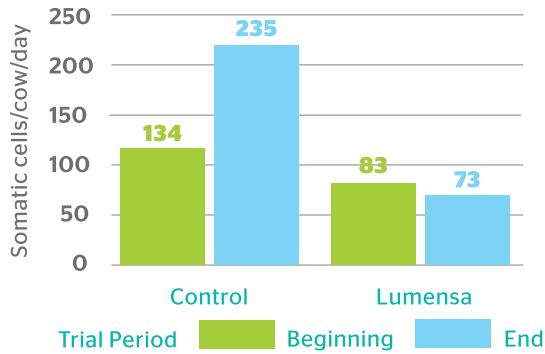
## Lumensa for Ruminants

- Produced through Cytozyme's proprietary multi-stage technology
- Utilizes highest quality, feed, food, FCC/USP grade materials approved by AAFCO (Association of American Feed Control Officials)
- Does not contain GMO (Genetically Modified Organism) materials
- Uses only materials which are on the FDA GRAS (Generally Recognized as Safe) List
- Produced using GMP (Good Manufacturing Practices) and following National Animal Supplement Council (NASC) standards

## Trial Results continued

**Lumensa for Ruminants improved milk production and quality and aided in animal health**

|         | Difference from the beginning to the end of the trial% |                   |                 |
|---------|--|-------------------|-----------------|
|         | Milk Production  | Butterfat Content | Protein Content |
| Control | -9.5%  | -13%              | -11.0%          |
| Lumensa | 8.6%   | 11.0%             | 6.0%            |



In a trial conducted in a commercial dairy facility in Idaho, USA, for a duration of three months Lumensa for Ruminants increased milk production, butterfat and protein content by 8.6, 11.0 and 6.0%, respectively, while in the control group animals milk production, butterfat and protein content decreased by 9.5, 13 and 11%, respectively. During this three month period, the somatic cell count in control animals increased 75% while in the treated animals the count decreased by 12%, indicating better health of the treated animals.

## Application

Shake well before using. Apply Lumensa for Ruminants to the finished feed. The recommended rate is 3 ml/head/day for dairy cattle.

## Compatibility

Lumensa for Ruminants is compatible with standard vitamin and mineral supplements. It can be added with these products as a premix. Ensure thorough blending of these ingredients before adding the premix to the feed.

## Storage

Store Lumensa for Ruminants in a dry place at a temperature below 110°F (43°C). Avoid freezing. Keep container tightly closed. Do not store diluted product. Do not store in direct sunlight.

### Economic Benefits of Ration Plus for Ruminants on Dairy Cattle Production

Average milk production\*: 28.56 kg/cow/day

Average production increase: 6.3%

Milk price\*: \$0.74/kg

**Increased revenues  
by \$1295/day/1,000  
head herd**

\* Source: NAAS - Dairy Forecast 2018