



Indian Journal of AgriVet Research  
Volume 1, Issue 5, 2021, Pp. 202-204  
Available online at <https://aavpublisher.com>  
ISSN: XXX-XXX



ORIGINAL RESEARCH



## Zootechnical additives for optimum production in livestock during COVID 19 lockdown

Naveen Kumar Singh\*, Ramakant, S.V. Singh, J.P. Singh and Sonu Jaiswal

C.V.Sc. & A.H., A.N.D.U.A. & T. Kumarganj, Ayodhya, U.P. INDIA

Corresponding Author: [vetnaveen@gmail.com](mailto:vetraveen@gmail.com)

Article Received: 25.05.2021

Article Published: 28.05.2021

### ABSTRACT

One of the points of interest of the use of zootechnical additives in ruminants is to control the accumulation of lactate in the rumen. The primary cause of acidosis is feeding a high level of rapidly digestible carbohydrate. During the lockdown of COVID 19, as a mark of affection large numbers of family members are feeding their livestock with whatever they get. Not accustomed to such feed, this leads to sudden change of ruminal environment causing sub acute or chronic acidosis. Ruminal acidosis can be prevented by Zootechnic additives such as *Saccharomyces cerevisiae* and *Megasphaera elsdenii* or adding sodium bicarbonate to the ration.

**Key words:** acidosis, livestock, zootechnic additives

The old group of 'microorganisms' and the term a 'probiotics' disappears for being too general and is now replaced by that of 'zootechnical additives' in which microorganisms and enzymes are included. One of the points of interest of the use of zootechnical additives in ruminants is to control the accumulation of lactate in the rumen and stimulate the synthesis of propionate; the most commonly used in ruminants being the yeasts (*Saccharomyces cerevisiae* and *boulardii*) as well as *Aspergillus niger* and *oryzae* (Caja et. al., 2003 and Owens et. al., 1998).

Rumen acidosis is a one of the most commonly encountered metabolic disease of cattle and like most metabolic diseases it is worth mentioning that for every single cow that shows clinical signs, there will be several more which are affected sub clinically. Also clinical rumen acidosis remains a major cause of morbidity and mortality in modern ruminant production systems. Acidosis is said to occur when the pH of the rumen falls to less than 5.5 (normal is 6.5 to 7.0).

The primary cause of acidosis is feeding a high level of rapidly digestible carbohydrate, such as wheat, barley and other cereals. Acute acidosis, is most commonly seen in 'stall fed cattle' animals where cattle have obtained access to ad-lib feed, often resulting in death. In dairy cattle, a milder form, sub acute acidosis, is seen as a result of feeding increased concentrates compared to forage.

During the lockdown of COVID 19, when most of (nearly all) the family members are confined at home for protection against Corona Virus as per Govt. directives, definitely all are showering their love and care to each other and to the animals too. As a mark of affection large numbers of family members are feeding their livestock with whatever they get, mostly the carbohydrate rich feeds like grains especially the left over rice, breads etc, especially in town areas where availability of roughage is a problem. Not accustomed to such feed, this leads to sudden change of ruminal environment causing sub acute or chronic acidosis.

### **SYMPTOMS**

Acute and chronic acidosis is prominent production problems for ruminants fed diets rich in concentrate. Often occurring during adaptation to concentrate rich diets, chronic acidosis may continue during the sudden change of feeding period.

With acute acidosis, ruminal acidity and osmolality increase noticeably as acids and glucose accumulate; these can damage the ruminal and intestinal wall, decrease blood pH and cause dehydration that leads fatal. Laminitis, polioencephalomalacia, and liver abscesses often accompany acidosis. Even after animals recover from a session of acidosis, nutrient absorption may be retarded and less production too. With chronic acidosis, feed intake typically is reduced and performance is depressed, probably due to hypertonicity of digesta, poor body condition and weight loss, unexplained diarrhea, pulse rate and respiratory rate may rise and also leads to chronic mastitis. Acidosis control events include feed additives that inhibit microbial strains that produce lactate, that stimulate activity of lactate using bacteria or starch engulfing ruminal protozoa, and that reduce meal size.

### **TREATMENT**

Animals with mild clinical disease might recover with little to no specific care. In animals with more severe clinical disease specific therapy is necessary. The use of yeast in ruminants reduces subclinical acidosis (Bach et. al., 2007 and Vyas et. al., 2014a ).

### **PREVENTION**

Ruminal acidosis can be prevented by Zootechnic additives such as *Saccharomyces cerevisiae* and *Megasphaera elsdenii* (Bol. Ecotas, Bioboost, Provisac, Himalaya Balisha etc.) as well as essential oils, or adding sodium bicarbonate to the ration. It is also important to consider the forage/concentrate ratio, the forage particle size, as well as the cereal's rate of degradation in the rumen.

There is a possible benefit for using some plant extracts to improve the profile of ruminal fermentation in production systems when the ruminal pH is low (pH 5.5). *Allium sativa*, *Capsicum*

*anuum*, *Yucca schidigera* and *Cinnamomum cassia* extracts alter the fermentation of rumen microorganisms in favor of propionate (Cardozo et. al., 2005).

## REFERENCE

- Owens, F.N., Secrist, D.S., Hill, W.J. and Gill, D.R., Acidosis in cattle: a review. *J. Anim. Sci.*, 1998; 76(1): 275-86.
- Esaul, J.L., Mateo, F., Itza O., Gwendolyne, Peraza, M., Jose, M. and Carrera, C., Ruminant acidosis: strategies for its control. *Austral. J. Vet. Sci.*, 2017; 49: 139-148.
- Cardozo, P., Calsamiglia, S., Ferret, A. and Kamel, C., Screening for the effects of natural plant extracts at different pH in vitro rumen microbial fermentation of a high concentrate diet for beef cattle. *J. Anim. Sci.*, 2005; 83: 2572-2579.
- Bach, A., Iglesias, D. and Devant, M., Daily rumen pH pattern of loose housed dairy cattle as affected by feeding pattern and live yeast supplementation. *Anim. Feed Sci. Tech.*, 2007, 136: 146-153.
- Vyas, D., Uwsvizeye, A., Mohammed, R., Yang, W.Z. and Walker, N.D., The effects of active dried, killed dried yeast on subacute ruminal acidosis, ruminal fermentation and nutrient digestibility in beef heifers. *J. Anim. Sci.*, 2014a ; 92: 724-732.
- Caja, G., Gonzalez, E., Flores, C., Carro, M. and Albanell, E., *Alternativas a los antibioticos de uso alimentario en rumiantes: probioticos, enzimas y acidos organicos*. FEDNA XIX Curso de especialización, Madrid, Espana, 2003.