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Govind Kumar Choudhary
Subject Matter Specialist
(Veterinary Sciences), Krishi
Vigyan Kendra, IIVR, Bhadohi,
Utter Pradesh, India

RP Chaudhary
Subject Matter Specialist
(Agriculture Extension), Krishi
Vigyan Kendra, IIVR, Bhadohi,
Utter Pradesh, India

R Prasad
Senior Scientist & Head, Krishi
Vigyan Kendra, IIVR, Bejwan,
Bhadohi, Utter Pradesh, India

Prevention of mastitis in buffalo by supplementation of Bucomin-E

Govind Kumar Choudhary, RP Chaudhary and R Prasad

Abstract

Krishi Vigyan Kendra, Bhadohi has conducted an experiment under On Farm Trial (OFT) in 10 buffaloes and given Bucomin-E® 1 caplet 1 month prior to calving and upto 2 month of post calving. A control group were selected which were given normal feed and ration as per the farmer practices. During the experiment and lactation period all the animal were monitored closely for the sign and symptom of mastitis. It was observed that 31.25 % animal of untreated were suffered from subclinical mastitis whereas only 6.25% animal were suffered from subclinical mastitis.

The 12.50 % of the untreated animal were suffered with clinical mastitis whereas no clinical mastitis was reported in Bucomin-E® treated group. The average milk production were decreased by 37.20% in untreated group throughout the lactation period but in experimental group no any decline in milk production. The supplementation with Vit E and Selenium minimizes the incidences of mastitis in lactating animal.

Keywords: Mastitis, Vitamin-E & Selenium, Buffalo

Introduction

Livestock is major resources which play a vital role in improving the socio-economic conditions of rural youth. There are about 300 million bovines, 65.07 million sheep, 135.2 million goats and as per 19th Livestock Census in the country. India continues to be the largest producer of milk in world. Milk production during 2014-15 and 2015-16 is 146.3 million tonnes and 155.5 million tonnes respectively showing an annual growth of 6.27%. The per capita availability of milk is around 337 grams per day in 2015-16.

Mastitis is the inflammation of udder cell and alveolar cells, which leads to reduced and unhygienic milk production. It is a costly disease in dairy animals and causing severe losses to the dairy industry. Economic losses in mastitis not only the issue but other issues like animal health and welfare, quality of milk, antibiotic usage and the reputation of the dairy sector are also important reasons to focus on mastitis control programme. Mastitis affects the quality and quantity of milk production a great deal of reduction in productivity also to influence the quality and quantity of milk [1].

Vitamin E and selenium is a common essential nutrient which impart in various biological activities. It is helpful in building the immunity by providing antioxidant capacity and maintaining various antioxidant enzymes in the body [2]. These vitamin E and Selenium protect the neutrophil from the destructive action of ROS [3].

Research Methodology

The experiment was conducted by Krishi Vigyan Kendra, Bhadohi under On Farm Trial (OFT) in 10 buffaloes. The pregnant animal of last trimester were selected from different villages in bhadohi district and given Bucomin-E® (Copper Sulphate 228.00mg, Ferrous Sulphate 114.80mg, Potassium Iodide 2.28 mg, Zinc Oxide 31.11mg, Magnese Sulphate 457.14mg, Cobalt Sulphate 45.71mg, Sodium Selenite 0.50mg and Vitamin E 6.00mg) 1 caplet 1 month prior to calving and upto 2 month of post calving. A control group were selected which were given normal feed and ration as per the farmer practices. During the experiment all the animal were monitored closely for the sign and symptom of mastitis. The incidences of mastitis in lactation period were confirmed by California mastitis test. This experiment were conducted due the high incidences of mastitis in buffalo in adjoining area of Krishi Vigyan Kendra.

Results and Discussion

Supplementation of Vitamin-E and Selenium @ 6.00mg and 0.5mg per day per dairy animal in preparturient period to post parturient period the incidence of subclinical mastitis was 6.25% and no incidences of clinical mastitis were noticed but in untreated control group the

Correspondence

Govind Kumar Choudhary
Subject Matter Specialist
(Veterinary Sciences), Krishi
Vigyan Kendra, IIVR, Bhadohi,
Utter Pradesh, India

incidences of subclinical and clinical mastitis were 31.25 and 12.5% respectively. This may be due to the antioxidant properties of the Vitamin-E and selenium⁵.

Vitamin E and Se containing enzyme glutathione peroxidase are antioxidants which protect the neutrophils from ROS/RNS. The neutrophils are the blood cells have the properties of first defense of the living body due to bactericidal properties⁴. The average milk productions were diminished by 37.20 % in untreated group whereas the treated group doesn't show any diminution in milk yields. There is positive correlation with the blood level of Vitamin E and Se with the mammary health⁵.

During the preparturient period animal are immunosuppressed due to low plasma concentration of Vitamin E and Se. The Vitamin E and Se have beneficial effects on neutrophil function, thus it is recommended to provide extra vitamin E and Se during the preparturient period may reduce the incidence of mastitis. The subclinical and clinical mastitis is a very costly disease which reduces the milk production, quality, quantity of milk and economic losses occurred in treatment. There is no specific medicines which ameliorate the incidences of mastitis in dairy herd. Thus, supplementation of Vitamin E and Se should be incorporated in ration may reduce the prevalence of mastitis in herd. Thus, it has been concluded that during the dry period (one month and upto 2 month in early lactation supplementation of Vitamin E and Se decreases the prevalence of mastitis and control the subclinical mastitis in dairy animal. By intervention of this technology the farmers dairy economics may be uplifted and indian dairy become beneficial to reaches on top.

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