



## Effect of formaldehyde treated soybean meal on chemical composition and cost of treatments

D.M. NALAWADE, R. M. ZINJARDE AND M.V. WAGH

### ABSTRACT

An experiment was conducted to study the effect of formaldehyde treated soybean meal on chemical composition and cost of treatments at Department of Animal Husbandary and Dairying, Nagpur during 2008-2009. The result showed that formaldehyde treatments did not affect the chemical composition of soybean meal. All the parameters like dry matter(DM), crude protein (CP), crude fiber (CF), ether extract (EE), nitrogen free extract (NFE) and total ash (TA) was found non significant in different treatments. Whereas protection of protein was done with minimum cost (Rs. 112 per qtls). Hence, formaldehyde treatments of soybean meal prove to be economic to animal feeding.

**KEY WORDS :** Incubation period, Formaldehyde, Protein, Soybean meal

Nalawade, D.M., Zinjarde, R.M. and Wagh, M.V. (2011). Effect of formaldehyde treated soybean meal on chemical composition and cost of treatments, *Res. J. Animal Hus. & Dairy Sci.*, 2 (1&2) : 71-73.

### INTRODUCTION

Protein content of ration is the important nutritional consideration for feeding animals. However, protein supplements being more expensive ingredients in ruminant ration. Protection of natural proteins of high biological value from degradation in the rumen seems to have great potential in ruminant nutrition for better growth and production. (Malik and Chopra, 1978. Tiwari and Yadav, 1989). Soybean seed is one of the richest protein source and suitable feed for high yielding animals to meet their increased nutritional demands but the soybean protein is highly degradable, therefore, it is being less efficiently utilized. Hence, the extent of protein degradation must be reduced without affecting its nutritional value by some means. Formaldehyde treatment has been found to be an efficient and comparatively cheaper method to protect highly degradable protein sources. Soybean meal is the important vegetative protein source for feeding livestock. Soybean meal is an excellent source of protein, because nearly 450 g/kg of the DM is protein and the protein quality is high

(Fan *et al.*,1995). Any process which leads to better utilization of such supplements will be of great value in livestock feeding. Hence, present study was undertaken to asses the protection of protein of soybean meal by different levels of formaldehyde treatments.

### MATERIALS AND METHODS

The soybean meal was treated with formaldehyde (37 per cent) solution at 0.0 (untreated), 1.0 (T<sub>2</sub>), 1.5 (T<sub>3</sub>), 2.0(T<sub>4</sub>) and 2.5 (T<sub>5</sub>) per cent per 100 g CP. The crude protein content of soybean meal was 46 per cent. Hence, amount of formaldehyde solution required was 0.0, 12.42, 18.60, 24.84 and 31.04 ml, respectively. The volume of the solution was made to 40 ml with water and formaline solution were sprayed over the samples and mixed immediately. There after, these samples were sealed airtight in polythene bags and kept for 7 days for proper reaction of formaldehyde with proteins. After 7 days the polythene bags were opened and dried the sample at 75°C for 24 hrs. The treated samples were ground finely after drying. These samples were used for further analysis.

The dried ground samples treated and untreated soybean meal were analysed on dry matter basis for the chemical composition *viz.*, dry matter (DM), crude protein (CP), crude fiber (CF), ether extract (EE), and total ash (TA) were determined as per the procedure recommended

#### Correspondence to:

D.M. NALAWADE, College of Agriculture, Department of Animal Science and Dairy Science, NAGPUR(M.S.) INDIA

#### Authors' affiliations:

R.M. ZINJARDE AND M.V. WAGH, College of Agriculture, Department of Animal Science and Dairy Science, NAGPUR (M.S.) INDIA