

Effect of DMX-7 Mold Inhibitor on Mold Inhibition and Nutritional Composition of Commercial Layer Feed Stored under Room Temperature

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DMX-7 is a mold inhibitor used in the animal feed industry. The objectives of this study were to determine the effect of DMX-7 on layer feed, the effective dosage which could be used under Sri Lankan condition, and to analyse the proximate composition of the prepared layer feed. Four different inclusion levels of DMX-7 were used as treatments such as 1 kg^t⁻¹, 1.5 kg^t⁻¹, 1.75 kg^t⁻¹, and zero levels as the control of the experiment. The treatments were stored under room temperature. Proximate composition, mold colony count, and aflatoxin detection during 60 days of storage duration were measured in triplicate at biweekly intervals. Statistical data were analysed using one-way ANOVA and Tukey's multiple range test at $p < 0.05$. Proximate analysis was done to determine the moisture, crude protein, crude fat, crude fiber, and total ash. Feed samples were inoculated on Sabouraud Dextrose Agar and mold colonies were counted after 7 days incubation period at 25° C. Isolated colonies were inoculated on Coconut Agar Media (CAM) and were incubated at 25° C for 7 days. Aflatoxin analysis was performed in the presence of fluorescence ring on CMA under UV light. During the storage period except for moisture, the proximate composition of all the treatment was not shown a significant difference. The mold colony count was increased in all treatment with storage duration. The highest mold count was recorded in the control. DMX-7 added treatments were not shown a significant difference in the mold count with each other. The presence of the fluorescence ring firstly appeared at 45th day of storage on the control and others were not present the fluorescence ring at the rest of storage duration. In conclusion, DMX-7 can be used to control the growth of mold in layer feed. Based on microbial, nutritional, and cost basis the effective dosage of DMX-7 is 1 kg^t⁻¹ of feed. The aflatoxin contamination has reduced by the effect of DMX-7 and the nutritional composition of prepared layer feed was not altered by DMX-7.

Keywords: DMX-7 Mold inhibitor, Layer feed, Proximate analysis