

Use of dried caged layer litter for replacing molasses in Total Mixed rations (TMR) for dairy cattle

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
in partial fulfillment of the requirement of
the degree of
Bachelor of Animal Science

by

Ampegama Gamage Madushan Kalhara

**Animal Science Degree Programme
Department of Animal Science
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

2018

Abstract

This study was carried out to investigate the use of dried caged layer litter in replacing the expensive molasses in total mixed ration (TMR) for dairy cattle. Litters samples from layers at different age groups (14, 17, 33, 37, 59, 72 weeks) were selected and were analysed for proximate composition. Litter from 14 weeks old layers showed the best proximate composition (dry matter 79.56%, crude fiber 30.86%, and crude protein 0.709%). Selected dried caged layer litter samples were tested for *Salmonella* and *E coli* using XLD and EMB selective media, respectively and results were negative for both. Further selected litter was heat treated (105 °C till 2 hrs.) and control (*Pennisetum purpureum* 40 kg, Molasses 2 kg, concentrate 3kg, mineral supplement 50 g), treatment one (control+1 kg of both litter and molasses) and treatment two (control+ 2 kg of litter) were prepared. Nine Jersey cross milking cows in second lactation (BW 437 ± 19.4 kg) were randomly assigned to three groups and formulated TMR was fed (45 kg/cow/day). During experiment period, adlibitum supply of water was given and no medication was practiced. After one week of acclimatization period, daily milk production and feed intake were measured individually up to two weeks duration and results revealed that significant difference in average daily milk production and the feed intake (p value<0.05). Results suggested that the dried caged layer litter could be successfully incorporated to the dairy cattle diet replacing molasses however further studies are required regarding improving aroma and subsequently the palatability of the dried caged layer litter which might affect to significantly higher daily milk production.

Keywords: cattle feed, caged layer litter, molasses, Total Mix Ration (TMR)