EFFECT OF REPLACING CORN BY DATE INDUSTRY WASTES ON ENERGY AVAILABILITY IN LACTATING ANIMAL RATIONS

By

MAHMOUD FAHMY SAYED ALI

B.Sc. Agric. Sci. (Animal Production), Fayoum University, 2011

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ABSTRACT

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This study was conducted to evaluate the effect of replacing corn grains by treated date press cake on lactating animal's performance.

At the first experiment (*in vitro1*), more than one treatment was tested for date press cake (DPC) and compared to corn grains. DPC was used with Zad1, Zad2 and urea additives. The treated DPC was divided into ensiling and non-ensiling groups (3 jars per each treatment) and stored for 45 days. There was no significant difference in the rumen activity when using date press cake (DPC) or corn grains. Moreover, the ensiling process did not cause a clear improvement in rumen fermentation.

At the second experiment (*in vitro2*), In this experiment, more than one treatment was used to replace DPC instead of corn grains with different percentages, 25%, 50%, 75% and 100% with or without Zad1. It was observed that the treatment of 25% DPC instead of the corn grains with or without Zad1 achieved the best results relative to the other treatments. At the *in vivo* experiment, six mature rams about 4 years old and ranged between 58-64 kg were used to digestibility trials and sixteen lactating buffaloes were divided to four groups (four animals each) were used to study different parameters of milk production. The feeding treatments were the control ration contain 100% corn grain (T1), the control ration + Zad1 (T2), the control ration contained 25% DPC instead of the corn grains (T3) and the control ration contained 25% DPC instead of the corn grains + ZAD1 (T4). The control ration was consisted of concentrate feed mixture: rice straw (50%: 50%, on dry matter basis). The most important results of the digestion experiment were that T4 and T3

showed a significant increase in the value of DMD, OMD, and NDFD. Also, the nitrogen balance increased significantly with treatments T3 and T4 than control. The highest ($P< 0.05$) values of milk yield, milk composition content (total solids, fat and protein) and ECM were obtained with T4 followed by T3 then T2. In conclusion replacing corn grains by treated date press cake to ruminant's rations had beneficial effects on nutrients digestibility and rumen fermentation. Moreover, it could improve milk yield and compositions.

Key words: Date press cake, dairy animals, Milk production, Rumen activity, Blood parameters.

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