بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

PRACTICAL STUDIES TO IMPROVE NUTRITIONAL EFFICIENCY OF BEET PULP IN RUMINANTS

By

SAHAR MOHAMED ATTIA SALEM

B.Sc. Agric., Sci. (Animal Production) Ain Shams Univ., 1995

A thesis submitted in partial fulfillment

of

the requirements for the degree of

Master of Science

in

Agriculture

(Animal Nutrition)

Department of Animal Production

Faculty of Agriculture

Ain Shams University

2000

APPROVAL SHEET

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ABSTRACT

Sahar Mohamed Attia Salem. Practical studies to improve nutritional efficiency of beet pulp in ruminants. Unpublished Master of Science, University of Ain Shams, faculty of Agriculture Department of Animal Production , 2000.

The present research consists of two parts. The first part is concerned with evaluating the sugar beet pulp in four forms : 1) Sugar beet pulp 100% (SBP), 2) Ureated sugar beet pulp (97% SBP + 3% Urea), 3) Molassed sugar beet pulp (90% SBP + 10% Molasses) and 4) Urea- molassed sugar beet pulp (87% SBP + 3% Urea + 10% Molasses). The second part of this work, Ureated (3% urea)- sugar beet pulp is used to replace ground yellow corn at levels 25, 50 and 75 % (w/w on as fed basis) in the daily rations of finishing Ossimi male sheep. In the first part; the crude fiber and crude protein contents of SBP were affected by both urea, molasses and urea plus molasses treatments. The highest crude fiber value (19.40%) obtained was in the sugar beet pulp only. The percentage of cellulose was slightly lower in ureated sugar beet pulp compared to sugar beet pulp, while addition of molasses or urea plus molasses to beet pulp decreased the percentage of cellulose. The percentage of hemicellulose were slightly lower in molassed sugar beet pulp and urea- molassed sugar beet pulp compared to sugar beet pulp, while addition of urea to beet pulp decreased the percentage of hemicellulose. The (ADL) of SBP was not affected by addition of urea, while addition of molasses or urea plus molasses decreased (ADL) compared to SBP. In- Vitro dry matter and organic matter disappearance (IVDMD, IVOMD) procedure was conducted through three incubation periods (24, 48 and 72 hrs.) in different forms to SBP (SBP, USBP, MSBP and UMSBP). After 24 and 48 hrs. of incubation, the highest IVDMD and IVOMD values were obtained in the USBP and the lowest values were obtained in the MSBP, while after 72 hrs. of incubation, the highest IVDMD and IVOMD values were obtained in the SBP and the lowest were in the MSBP. In the metabolism trial ; feed intake, nutrients digestibility and nitrogen

balance were determined for the four rations (SBP, USBP, MSBP and UMSBP), which were fed to four mature male goats in 4 x 4 Latin square design as a sole feed. Animals fed USBP recorded the highest CP digestibility and N- balance followed by UMSBP and SBP, while the lowest values were obtained in MSBP. Animals fed SBP recorded the highest CF digestibility followed USBP and UMSBP, while the lowest value was obtained by the animals raised on MSBP. Sugar beet pulp recorded very similar TDN values relative to USBP and UMSBP but higher than MSBP.

In the second part; the feeding trial (10 weeks) was carried out using 15 animals of 31.40 ± 1.15 kg initial body weight, distributed randomly into three groups. Concentrate mixtures, 25% corn + 75 % USBP (group 1) 50% corn + 50 % USBP (group 2) and 75% corn + 25 % USBP (group 3) were offered ad libitum, while fresh berseem was offered at 3 kg/day/animal. The results showed that the DM intake decreased ($p < 0.01$) with increasing the level of SBP in the ration. The nutritive value of the 2nd ration was higher ($p < 0.01$) than those for rations 1 and 3 respectively in terms of TDN% (73.06 vs. 69.47 and 69.85). Ruminal pH was higher ($p < 0.01$) with rations containing the higher level of USBP (75% or 50% USBP). Average daily gain was insignificantly influenced by changing the replacement level of corn with USBP up to 75% of DMI (168.7, 150.0 and 160.7 g/d for animals in groups 1, 2 and 3, respectively). It is safe to conclude that ureated-SBP could be included in the daily rations of sheep to replace up to 75% of corn during the finishing growth period.

Key words :

Sugar beet pulp, corn, urea, molasses, chemical composition, IVDMD, IVOMD, sheep, goats, Feeding trails, In-vivo, feed intake, feed conversion, Nutrients digestibility, feeding values, nitrogen balance, water balance, rumen parameters.