



FEEDING COWS FOR MILK PRODUCTION IN ARID ZONES AND DRY SEASONS IN THE SUDAN

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Keywords: *Ergroscopic tremula* (Bano), Darfur, Urea, Grazing

ABSTRACT

One hundred and twenty milking cows (Dar Elnih) belonged to eight farmers in Elfashir city were studied. Before the trial, cows were traditionally managed and fed (free grazing) and were given 6.25 lbs milk / cow / day. Then they were kept into four fences and were given ammonia treated grass, 5 Kgs /dm /cow/ day and concentrates 3 Kgs /dm /cow/ day. The average milk yield increased up to 12.75 lbs /cow/day (79% increase) and it was highly significant ($P < 0.01$). The research comments to adopt the results for feeding the lactating cows during the dry seasons and in the arid zones in the Sudan.

INTRODUCTION

Northern Darfur state occupies a very important range land for domestic animals. There are 3,000,000 animal units (Au) including camels, sheep, goats and small size of cows (According to Annual Report of Elfashir vet Office 1988). Cows are considered as the best and first fresh milk donor, but they need humid environment. Hence they suffer more to survive in northern Darfur. This phenomenon leads to lack of fresh milk, that's why people in northern Darfur towns began to keep cows in home, although they need further knowledge to manage their herds in zero grazing and in dry seasons especially during winter.

In summer, the abundance of poor and low quality grasses are available especially *Ergroscopic tremula* (Bano). So, this research aims to find solution to this problem, by feeding improved local grasses in arid zones and treated straw in dry season in the Sudan.

MATERIALS AND METHODS

- 1- Number of 120 milking cows in eight small scale dairy farms in Elfashir city were used in this experiment, by keeping them in doors under shaded fences for sixty days
- 2- A basal ration consisting of 3 Kgs concentrate groundnut cakes (GNC) and 5 Kg treated (bano) *Ergroscopic tremula* grass, was introduced to each cow / day / group feeding. The improved bano was treated as follows: "1" Kg of urea was dissolved in 25 liters of boiled water, then sprayed on 2.5 Kgs of the computed bano and sealed in polyethylene sheet in a pit, then buried for 7 days and after that introduced to cows.
- 3- Drinking water was available *ad libitum*.
 - Average milk yield was recorded and analyzed at the beginning and at the end of the trial.
 - At the end of the trial the following parameters were calculated:
 - 1- The increase in milk yield.
 - 2- The changes in nutritive value of the milk.
 - 3- The significance of the results.

RESULTS

Table 1. Changes in chemical composition of the grass gm/ Kg

Grass	DM	CP	Oil	CF	Ash	Nfe	Me	Ca	P	NaCl	Mg	De%
Non treated bano	9.40	40.1	9.7	456	164.8	260.1	4.75	1.85	0.65	0.92	1.98	40
Treated bano	9.10	142	10.2	294	112.6	218	11.5	1.1	0.9	0.7	1.7	80

Table (1) shows the chemical composition and the digestibility of the grass before and after the treatment, the treated grass seems to be better than the untreated one.

Table 2. Changes in milk composition

CP	Fat	Lactose	Ash
2.12	3.8	2.0	0.97
3.2	5.1	2.82	0.87

The treated grass improved the quality of milk (Table, 2). So, it could be mentioned that there are positive relationships between the quality of feed and yield.

Table (3) shows the effect of the improved grass on the quality of the yield. It seems to raise up the production more than 100 %, and this confirms the role of treated grass on productivity.

Table 3. Effect of the treated grass on the average milk yield / cow /day/ farm

Farm No.	1	2	3	4	5	6	7	8	average
Pretrial	7	6	5.5	6	7	4.5	8	6	6.25
Post trial	14	13	12	13	15	11	18	14	12.75
Increase	7	7	6.5	7	8	6.5	10	8	7.5

DISCUSSION

One of the problems that faces milk production in the tropics, is the low quality of grasses (Blowey, 1989). People who live in towns in arid zone in these areas like Sudan, suffer more from lack of fresh milk (Tag Elsir and Awad, 1989)

The improvement of grasses and plant residues will minimize the production cost and increase the yield (Collison, 1989). The tropical cow breeds can give better milk yield if adequately fed (Mahadevan, 1987).

The ammonia treated grass (bano) raised up the milk yield from 6.25 lbs/ cow/ day up to 12.75 lbs/cow/day and this confirms what was mentioned by (Mahadevan, 1987). The chemical composition of the milk changed into high level (notice Table 2) and this matched what was observed and mentioned by (Alim, 1960).

Tables (2) and (3) showed significant results especially in the digestibility. Hence, the research recommends farmers to adopt the results for better profitability.

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حوليات العلوم الزراعية
جامعة عين شمس، القاهرة
مجلد (٥٢)، عدد (١)، ١٠٧-١٠٩، ٢٠٠٧

تغذية أبقار الحليب في المناطق القاحلة والمواسم الجافة بالسودان

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الأبقار بطبيعتها تحتاج لبيئة رطبة ، لذا فقد تمت تربيتها في حظائر مظلمة ومياه متوفرة وحسنت البيئة بالحظائر ، وتم إعطاء الأبقار الحشائش المحسنة (البنو) باليوريا إضافة لامباز الفول لمدة ستين يوما ، وقد ارتفعت إنتاجية الأبقار ارتفاعا معنويا . لذلك أوصى البحث بتبني نتائج هذه الدراسة في المدن الصحراوية والمواسم الجافة لتوفير الحليب.

يهدف هذا البحث لرفع الكفاءة الإنتاجية لأبقار الحليب في المناطق الصحراوية والمواسم الجافة ، عن طريق رفع القيمة الغذائية للحشائش والمخلفات الزراعية وتحسين بيئة تربيتها. وقد تمت دراسة ١٢٠ بقرة حلوب سلالة دار الريح المتواجدة بشمال دار فور وشمال غرب كردفان ، لهذا الغرض ، وهي تخص ثمانية مزارعين من ذوى الحيازات الصغيرة ، وكانت هذه الأبقار ترعى على الحشائش بفيافي الفاشر .

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