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A STUDY OF TORKMEN ONE-HUMPED CAMEL'S MILK PRODUCTION IN GOLESTAN PROVINCE

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Abstract

Torkmen-Sahra (Golestan province in North of Iran) is a vast area suitable for camel husbandry. Camel is also counted one of the main farm animals of Torkmen people in this area. Milk is one of the main productions of camel. There is not enough information about the production and content of milk from camels in Iran. Therefore, this study focuses on the milk production, its content, and its fermented production (CHAL) from one-humped Torkmen camels in Golestan province. In this study, the required information for milk production namely; age and period of milking, parturition date and first milking date, and daily milk production records among 60 selected camels was done. Out of the milked camels, 30 camels were selected randomly. Then samples are taken from milk and its fermented product. Finally, the chemical contents and characteristics of the samples were determined in the laboratory. Among Torkmen one humped camels, the average length of milking period is 8 month, daily milk production is 8 kg, and annual milk production (a milking period) is 1880 kg. The length of milking period depends on the demand for milk consumption and its fermented production (Chal) which is mainly during the warm seasons in spring and summer. There is also a possibility of more milk production in case of longer milking period (more than 8 months). Chal is the only fermented milk production from camel in North of Golestan (Torkmen-Sahra).

Key words: Torkmen Camel, Fermented Camel Milk, Chal.

Introduction

The northern part of Golestan Province is a vast desert which is a semi-arid or arid region, with the perception of 200-300mm per year. Most of its surface is consisted of saline pasture. The level of salinity and alkalinity in this region is very high and also the vegetation and other ecological conditions in this area are perfect for camel husbandry. Camel breeding is done in this area for a long time and camels themselves are accounted as the main animal for (Soleimani Mokhtari,

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1992). Turkmen people. However, due to several causes, camel husbandry has faced some limitations in the present time (Khatemi, 1988).

One of the most valued products of a camel is its milk, with which another material is produced in this area called Chal. The efficiency of production and contents of camel milk may not only undergo some changes under different conditions but also effected by: race characteristics, feeding conditions, access to water, season and milking periods.

Coliff has reported the efficiency of one-humped Turkmen camels between 2 - 3 thousand kilograms in a 16-month period. He also has reported the efficiency of camels milking in Turkmenistan between 5 -7.5 thousand kilograms in periods 213 to 547 days (Nazer Adl, 1988).

An experiment shows that the milk of one-humped Turkmen camel is consisted of total solid material, fat and protein respectively 12.38, 4.19 and 2.90 percent. Also for Chal these numbers were respectively: 2.66, 0.82 and 0.83 percent (Googlani, A.1997).

Unfortunately there was not much information available in the context of Iran's local camel's milk and its by-productions, so in this paper, the efficiency of milk production and its other by-products, namely Chal is investigated in case of one-humped Turkmen camels in Golestan province (Googlani, A.1997).

Methods & materials

To collect required information for camel milk production in this region, first a number of camel breeders (61 people) were chosen to record milking in the cities of Bandar-E Torkmen, Gomishan, Aq-Qala, Gonbad Kavoods, Kalaleh and Maraveh-Tappeh. Next, a paper, containing necessary data including the age and the shift of milking, delivery date and initiation of milking and the date of recording the weight of produced milk was filled out at each stage (every two weeks, for 24 hours). Among the milking camels 30 of them were chosen randomly and samples were taken from their milk and fermented products, then the chemical compound and the specifications of the samples were determined in the context of total percentage of solid material, humidity, ash, fat, PH and special weight in the laboratory of Gorgan pasteurized milk factory.

Results and discussion

The results for milking characteristics of local Turkmen camels are presented in table 1, and the components and characteristics of camel milk and Chal are presented in table 2.

As it can be seen in table 1, in Turkmen local camels the average milking period is 8 months, the efficiency of milk production per day is 8 kilograms and the total annual amount of milk production is equal to 1880 kilograms. The efficiency of milk production may vary based on environmental conditions like weather, feeding, times of milking, age and number of deliveries (Nazer Adl, 1988).

The amount of annual milk production of Turkmen camels was approximately close to Coliff's 1959 standpoint, and the observed little difference is possibly because of changes in conditions and especially different periods of milking (Googlani, A.1997).

However the milking period in this area is also effected by demands for utilization of camel milk, which has led to more milking in warmer seasons such as spring and summer, also there is possibility of even more prolonged milking periods (more than 8 months).



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Fig. 1. one-humped Turkmen in Tukmen Sahra Pastures

Table 1. The milking condition of one-humped Turkmen camels

Characteristics	Average	Range
Milking period (Month)	8	5 - 12
Daily milking times (Month)	4	3 - 6
Daily milk production efficiency (Kg)	8	4 - 17
Annual milk production (Kg)	1800	2900 - 1100

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Table 2. Contents and characteristics of one-humped Turkmen camel milk and Chal.

Characteristics	Milk		Chal	
	Average	Range	Average	Range
Total solid material (percent)	10.25	7.25 – 13.20	2.66	5.25 – 0.8
Ash (percent)	0.83	0.72 – 0.90	0.82	1.7 – 0.26
Fat (percent)	2.95	1.90 – 4.70	0.83	2.7 – 0.3
PH	6.44	6.10 – 6.65	-----	-----
Specific gravity	1.02975	1.0275 1.0345	-----	-----

The results of investigations in chemical compounds and characteristics of one-humped Turkmen camel milk and Chal in this experiment are somewhat in correspondence with the previous experiment and the small difference is possibly due to difference milking stage, collecting of the samples, feeding, breeding management and the number of experimental samples (Googlani, A.1997).

Chal is the only fermented production of camel milk in Turkmen sahra and tastes just like gaseous yoghurt drink. In this region cam milk is usually only utilized in figure of Chal. Chal products are comprised of two parts, named Agharan and Ghoor. Agharan is the foamy surface with lots of fat and in the color of white, and Ghoor is the lower part which is in rather blue color and also is turbid. It is actually the main part of Chal.

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مطالعه بازده تولید شیر در شترهای یک کوهانه ترکمن استان گلستان

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چکیده

ناحیه شمال استان گلستان دشت وسیعی است که پرورش و نگهداری شتر ازدیرباز مرسوم بوده و شترزادام‌های اصلی ترکمنان بشمار میرود. یکی از محصولات با ارزش شتر، تولید شیر بوده، بازده تولید و ترکیبات شیر شتر متفاوت بوده و تحت تأثیر خصوصیات نژادی، وضع تغذیه، دسترسی به آب، فصل و دوره شیردهی می باشد. در زمینه تولید و ترکیبات شیر شترهای بومی ایران اطلاعات کافی در دسترس نبوده، لذا در این طرح بازده تولید، ترکیبات شیر و فرآورده تخمیری آن بنام چال در شترهای یک کوهانه ترکمن در استان گلستان مورد بررسی قرار گرفت. در این بررسی اطلاعات مورد نیاز تولید شیر شامل: سن و نوبت دوشش، تاریخ زایش و شروع شیردوشی، رکورد تولید شیر روزانه در ۶۰ نفر شتر انتخابی انجام شد. از شترهای مورد دوشش ۳۰ نفر به طور تصادفی انتخاب، از شیر و فرآورده تخمیری آن نمونه گرفته شده و ترکیب شیمیایی و خصوصیات نمونه ها در آزمایشگاه تعیین شدند. در شترهای بومی ترکمن میانگین طول دوره شیردهی ۸ ماه، بازده تولید شیر روزانه ۸ کیلوگرم و میزان تولید شیر سالانه (یک دوره شیردوشی) ۱۸۸۰ کیلوگرم بوده است. طول دوره شیردوشی در منطقه تحت تأثیر تقاضا برای مصزف شیر شتر و فرآورده تخمیری آن (چال) می باشد که اغلب در فصول گرم بهار و تابستان بیشتر شیردوشی شده و احتمال تولید شیر بیشتر در صورت دوشش طولانی تر (بیش از ۸ ماه) وجود دارد. تنها فرآورده تخمیری شیر شتر در ترکمن صحرا چال است.

واژه های کلیدی: شتر یک کوهانه ترکمن، شیر شتر، چال.