

SHORT NOTE

A preliminary study on some lactation characteristics of Tagger goats in the Gezira State, Sudan

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Goats are important animals in the Sudan producing 1.152 million tons of milk and 0.116 million tons of meat (FAO, 1999) and are widely distributed in the country due to their adaptation to different environments and low cost husbandry (Devendra and Mc Leroy, 1982). There are many goat breeds in the country and Desert, Baggara, Ingessana, Nilotic and Tagger are considered meat breeds (Elimam, 2009). According to Mofarrak (1995), Tagger is found in south Kordofan, Jebel Marra and Ingessana mountains and mainly in Nuba mountains. It is dwarf, compact, well adapted to harsh environments and has good meat quality and conformation. It is mainly reared in traditional systems on natural pastures and crop residues with low inputs and outputs (Mudawi, 2002). Recently, Tagger was introduced into the Gezira State and reflected good meat productivity (Elimam 2009). Milk yield affects kids' growth and performance and the excess can be used for human consumption. Information on Tagger lactation characteristics is scarce and estimated mean milk yield and lactation period were 0.64 kg/ day and 156.3 days, respectively, in Eldalang area (Mudawi, 2002). There is no information on Tagger milk yield in the Gezira State. Consequently, this study was conducted to furnish this information.

The study was conducted in the premises of the Goat Research Centre, Faculty of Agricultural Sciences, University of Gezira in Elneshasheba farm in Wad Medani in 2008-2009. A flock of Tagger goats from Eldalang area in the Nuba mountains in South Kordofan State is well maintained since June 2006. They were treated against external and internal parasites, vaccinated and housed in an open corral shaded with corrugated iron. They were mainly grazed in the farm from 8 am to 2 pm and from 4:30 pm to 6:30 pm and the main vegetations were Kittir (*A. mellifera* L.) and Rabaa (*Trianthema pentandra* L.), in addition to Sudangrass (Gerawia), Abu 70 and Lubia. Clean water was offered *ad lib*. No concentrates were fed during lactation.

Milk yield was measured once a week, starting from the second week post kidding in 12 animals. It was measured in the morning and in the afternoon after grazing. Kids were separated from does at night. One half of the udder was milked and the other one was suckled by the kids and daily milk yield was calculated by summing the morning and afternoon yields and then multiplied by 2.

Table 1 shows Tagger mean weekly milk yield. Milk yield declined steadily from the first to the sixth week and increased in the seventh week to reach a peak in the fourteenth week and then declined sharply. The decline in milk yield up to the sixth week in lactation was mainly because nutrients supply was below requirements and the animals were in a negative energy balance. Concentrates are recommended especially during early lactation to reach a higher yield.

Table 1. Tagger mean (\pm SD) weekly milk yield (litres) in the Gezira State, Sudan.

Weeks	Yield	Weeks	Yield	Weeks	Yield
1	1.07 \pm 0.55	7	0.94 \pm 0.73	13	1.59 \pm 0.53
2	0.99 \pm 0.68	8	1.16 \pm 0.81	14	2.74 \pm 0.00
3	0.89 \pm 0.53	9	1.19 \pm 0.87	15	2.08 \pm 0.55
4	0.72 \pm 0.31	10	1.43 \pm 0.90	16	0.63 \pm 0.21
5	0.52 \pm 0.29	11	1.97 \pm 0.68	17	0.97 \pm 10
6	0.30 \pm 0.41	12	1.10 \pm 0.81		

Table 2 shows Tagger lactation characteristics. There were variations among animals in lactation period, initial and final milk yields, peak yield, time to reach the peak and total milk yield. The variations among animals in lactation characteristics were reported by many authors and were mainly genetic (Khalifa, 2002; Devendra and Mc Leroy, 1982). Tagger mean milk yield was least among Sudanese breeds and was mainly due to genetical and/or nutritional factors. Tagger milk yield was lower than the 133 kg in Kenana Sugar Company (Khalifa, 2002) and 72.5 - 107 kg in 147 days (Elnaim, 1979). It was also less than the 60.7 kg in 48.7 days in Desert goat (Mason and Maule, 1960), 71 kg in 121 days (Khalafallah and Sulieman, 1990). These variations were mainly due to genetical and /or environmental factors.

Table 2. Tagger lactation characteristics in the Gezira State, Sudan.

Animal no.	Lactation period (days)	Peak days	Initial yield Peak yield Final yield Total yield			
			(litres)			
1	101.00	24.00	0.260	0.040	0.264	07.840
2	102.00	18.00	0.200	0.040	0.240	3.444
3	101.00	17.00	0.240	0.056	0.480	3.738
4	173.00	109.00	0.184	0.156	0.420	27.939
5	037.00	97.00	0.220	0.342	0.420	20.850
6	148.00	93.00	0.224	0.134	0.400	22.750
7	152.00	76.00	0.168	0.100	0.182	21.574
8	164.00	143.00	0.140	0.036	0.420	9.856
9	150.00	52.00	0.148	0.240	0.272	08.148
10	180.00	126.00	0.068	0.156	0.248	14.448
11	177.00	153.00	0.020	0.260	0.260	10.206
12	167.00	146.00	0.040	0.072	0.384	11.634
Mean	137.67 \pm 43.38	87.83 \pm 50.53	0.160 \pm 0.08	0.140 \pm 0.01	0.310 \pm 0.10	13.530 \pm 7.97

Tagger mean lactation period was shorter than at Eldaleng area (Mudawi, 2002), Nubian goats (Elnaim, 1979). It was longer than that of Desert goats (Mason and Maule, 1970; Ombabi, 2006) and 121 days (Khalafallah and Sulieman, 1990). These findings demonstrated that there were great variations in lactation period in Sudanese goat breeds. Mean peak milk yield was 0.31 litres and was at 87.83 days in lactation. Peak milk yield was at 87.83 days in Tagger and was late than that of Sudanese goats (Gamal and Elkhidir, 1993) and that of Barbari and Jamnapari (Mittal and Pandy, 1971).

The results showed that Tagger milk yield was low and not sufficient for twins. Therefore, proper feeding, good management and breeding programs are required to improve milk yield

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دراسة أولية لبعض صفات الإدرار في ماعز التقر في ولاية الجزيرة في السودان

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الخلاصة

تمت دراسة صفات إدرار قطيع من ماعز التقر مستجلب من منطقة الدنج في جبال النوبة وحفظ في مدينة واد مدني في ولاية الجزيرة في السودان منذ يونيو 2006م. تمت معالجة القطيع ضد الطفيليات الداخلية والخارجية وطعم ضد الأمراض السائدة في المنطقة وحفظ في حظائر مفتوحة بها مظلة من الزنك. تعتمد تغذية القطيع على الرعي صباحا ومساء مع تقديم حشيشة السودان (جراوية) وأبو سبعين ولوبيا ولم تقدم عليه مركزة خلال فترة الحلب ووفر ماء نظيف باستمرار. تم قياس إنتاجية اللبن مرة أسبوعيا صباحا ومساء بعد الرعي منذ الأسبوع الثاني في 12 حيوانا وأبعدت الجديان من الأمهات ليلا. إنخفضت إنتاجية اللبن من الأسبوع الأول الى الأسبوع السادس وزادت في الأسبوع السابع وبلغت القمة في الأسبوع الرابع عشر. يرجع إنخفاض الإنتاجية في الأسابيع الأولى أساسا لإنخفاض التغذية عن حاجة الحيوانات ويوصى باستخدام علائق مركزة خاصة في الإدرار المبكر لتحسين الإنتاجية. تباينت الحيوانات في طول فترة الإدرار وإنتاجية اللبن المبدئية والنهائية وفي قمة الإدرار وزمانها وإنتاج اللبن الكلي. كانت إنتاجية اللبن أقل من سلالات الماعز الأخرى في السودان ولا تكفي التوائم ويتطلب تحسينها تحسين التغذية والرعاية وتحسيناً وراثياً.