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The Influence of Environmental Factors on Sudanese Desert Goat Kids' Birth Weight, Weaning and Mortality in the Province of North Kordofán, Sudan

Ibrahim ELİMAM[1]* Hínd SALİH[2] I. BUSHARA[2]

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Abstract

The recent experience was aimed to evaluate the effect season on birth, parity and growth performance on of Sudanese desert goat kids' in Northern Kordofán province Sudan. Thirty seven (37) kids of desert goats which were divided in (2) flocks according to the birth season (rainy and dry seasons). Kids were subjected to natural grazing. The results indicated that the season of kidding and parity number seemed to had no significant influence on kids' birth weight, growth performance and kids born during autumn time secured highest birth weight (2.12±0.08 kg) compared with kids born during the dry time (2.07±0.11 kg). The results showed that the birth type girth significant (P<0.05) effect on kids' birth weight; single born kids were heavier at birth (2.31±0.10) than twin born kids (1.96±0.12 kg). The gender of kids has highly significant (P≤0.01) influence on birth weight; male kids' were heavier than the female kids'. Type of birth and gender of kids' were not statistically significant affect growth performance of desert kids to weaning period, where Twin and female kids showed lightest body weight growth (4.06, 6.52 and 9.01kg and 3.96, 6.37 and 8.53 kg) respectively for twin and female kid. The findings stated that time of birth; parity number & birth type were not affected weaning weight and daily gain at 90 days of age. Gender of kids' was exerted significant (P<0.05) effected weaning weight, where male kids recorded (9.19 kg) compared to their counterparty female (8.53 kg). The two seasons of birth (rainy & cool, dry season), parity order did no exerted any significant effect on the pre weaning mortality. Twin born kids showed a high rate (P<0.05) of morality with 22% as compared with kids' born as single (5%). Also gender of kids significantly (P<0.05) effects mortality rate, where female had higher rate 18% as compared with male 9%. In conclusion, season of birth was the supreme important exporter of the variation in this treatment. As a result, in this study, the most important source of variation was the birth season and it was determined that environmental factors had a positive effect on live weight and growth rates in goats.

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Sudan'ın Kuzey Kordofan Eyaleti'nde Çevresel Faktörlerin Sudan Çöl Keçisi Yavrularının Doğum Ağırlığı, Sütten Kesim ve Ölüm Oranlarına Etkisi

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Öz

Bu deney, Kuzey Kordofan eyaleti Sudan'daki yerli çöl keçisi yavrularının doğum, doğum sayısı ve büyüme oranlarına mevsimin etkisini araştırmayı amaçlamıştır. Toplam otuz yedi yavru, doğum mevsimine göre (yağmurlu ve kurak mevsimler) iki gruba ayrılarak, yavrular doğal otlatmaya tabi tutulmuştur. Sonuçlar, yavrulama mevsiminin ve parite sayısının yavru doğum ağırlığı, büyüme performansı üzerinde anlamlı bir etkisi olmadığını ve yağışlı mevsimde doğan oğlakların, kurak mevsimde doğanlara göre (2.12±0.08 kg) en yüksek doğum ağırlığını (2.07±0.11 kg) sağladığını göstermiştir. Sonuçlar, doğum tipi boyutunun oğlakların doğum ağırlığı üzerinde anlamlı (P≤0.05) bir etki yaptığını göstermiştir. Tek doğan oğlaklar doğumda (2,31±0,10) ikiz doğanlardan (1,96±0,12 kg) daha ağırdı. Oğlakların cinsiyetinin doğum ağırlığı üzerinde oldukça anlamlı (P≤0.01) etkisi olduğu ve erkek oğlakların dişilere göre daha kilolu olduğu belirlenmiştir. Doğum tipi ve oğlakların cinsiyeti, oğlaklarının büyüme performansını sütten kesme dönemine kadar etkilemezken, ikiz ve dişi oğlakların ikiz ve dişi oğlaklar için sırasıyla (4.06, 6.52 ve 9.01 kg ve 3.96, 6.37 ve 8.53 kg) en hafif vücut ağırlığı artışı gösterdiği görülmüştür. Sonuçlara göre doğum mevsimi; parite sayısı ve doğum tipi, 90 günlük yaşta sütten kesme ağırlığı ve günlük kazancı etkilememiştir. Yavruların cinsiyeti, sütten kesme ağırlığını önemli ölçüde etkilerken (P≤0.05), erkek oğlaklar (9.19 kg), dişilere göre (8.53 kg) olarak kaydedildi. İki doğum mevsimi (yağmurlu ve serin kurak mevsim), parite sırası, sütten kesim öncesi mortalite üzerinde anlamlı bir etki göstermedi. İkiz doğan oğlaklar, tek doğan oğlaklarla (%5) karşılaştırıldığında %22 ile yüksek bir oran (P≤0.05) göstermiştir. Ayrıca oğlakların cinsiyeti (P≤0.05) ölüm oranını önemli ölçüde etkiledi. Burada dişi oranı erkek oranına (%9) kıyasla %18 oranıyla daha yüksektir. Sonuç olarak, bu çalışmada en önemli varyasyon kaynağı doğum mevsimi olmuş ve çevresel faktörlerin keçilerinde canlı ağırlık ve büyüme oranları üzerine olumlu etki yaptığı belirlenmiştir.

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[1] Faculty of animal production,University of East Kordofan – Sudan. *Corressponding author, ibrahimelimam18@gmail.com
[2] Dep. of Animal Production. Faculty of Natural Resources and Environmental Studies, University of Kordofan El-Obied, Sudan.

Introduction

Goats contribute greatly to food security by providing milk and meat for Sudanese families, as they adapt to the local environment (El-hag et al. 2001). Desert, goats are usually bred in the desert areas, mainly for the production of milk and meat, especially the arid and rural areas of Sudan. (Escareño et al., 2012). Goats are a source of animal protein, and also provide cash resources to small farmers in various countries of the world (Alabi et al., 2019). Nubian goats are one of the highest dairy breeds in Sudan compared to other breeds, and they are widely distributed in arid and dry areas. (Wilson T. 1991). Nubian goats are widely distributed in North Africa and the coastal belt of the Mediterranean, the probably Sudanese origin (Ballal KME, 2003). Desert Nubian goats are usually black in color, also there are some colors such as brown and multi-colored from black to white (AOAD. 1990, El-Naim YA. 1979). Goats represent an important part of the livestock in Sudan compared to African countries (Siham A 2017). The number of goats in Sudan is estimated to be about 31 million heads, while the number of goats in Africa is about 365 million, goats produce about 1,532 million tons of milk per year. Sudan is the largest producer of goat milk in Africa and the third country in the world (FAOSTAT,2015). Goats are widespread in many regions of the world, with increased demand for their milk and meat products in developing countries, tropical and arid regions (Sahlu & Goetsch, 2005). Goats are considered an important development and economic resource for poverty alleviation and sustainable development, in addition to meeting the cultural needs of some peoples (Oseni and Ajayi, 2014). Goats have the ability to convert the low-quality feed into body mass, which makes their meat highly valued (Ismail AM 2011). The desert goat is similar to the west African long-legged goat, probably of the same origin (Wilson T, 1991). The colors of the goat's coat are multiple, and there are overlapping colors (Epstein H 1971, Mason IL 1960). The cross-breeding between desert goats and Saanaen and Toggenburg buck they found that the daily weight, and growth performance were increased, and the slaughtered weight was about 30 kg, and were significant have been reported compared to the original desert goats (A. Bello 2010). Kidding mortality average varies between 100 and 150. Mortality may be as high as 25% in confined animals (Khan et al. 2008). The single born kids were heavier compared to twins and triplets was also confirmed by (Singh 2002; Wenzhong et al. 2005; Zahraddeen et al. 2007). The availability of the folder has a positive effect on the birth weight, weaning weight and weight at 6-9 months of age, and the average weight of goats before and after weaning (Yaqoob et al. 2009). Goats contribute to the national economy, human well-being and improving ways of living through four main pillars: poverty alleviation, food security, environmental preservation, and gender equality (R Trevor Wilson 2018). In many countries goats provide animal protein to families and contribute to improving incomes for farmers (Toplu & Altinel 2008). With the objectives of evaluating of the effects of different factors (non-genetic) as season of birth, sex, type of birth and parity order and on pre - weaning growth rate of Desert goat kids in North Kordofan, Sudan. The object of the current study is to study non-genetic factors such as the season of birth, the number of births, the growth rate before and after weaning of desert goat.

Methodology

The treatment has been done in ELObaid in North Kordofán province, Sudan (Latitudes 11º:15'-16º:30' N; Longitudes 27-32 ºE). The temperature varied between 30-35 º C during the year, the peak temp. was over than 40 ºC in April, to June. The autumn time was started from July to October the peaks raining in August annually. The average of raining was more than 280 mm (Technoseve, 1987).

Treating animals and feeding management

In the experience there were (37) kids' born to (28) adult goats were have been tested. From domestic market the goats have been bought. Goats had different age, which was a range less than one year to third years old, the rate of body weight was about 21.4 kg. The kids' was grazed during autumn and dry time. The kids' were born during the rainy and dry time of year 2021 raised on traditional grazing the kids' was divided in two groups according the season of birth. Randomly the kids' was individually have been equipped with feeding and drinking basins.The kids' was ear-tagged, vaccinated against epidemic diseases such as anthrax and Hemorrhagic septicemia and drenched with broad spectrum anthelmintic (Ivomic). Daily the goats their kids' have been grazing from 8.00 am to 6.00 pm and they were kept indoors in the evening. The goats daily were watered daily from running river water. The born kids' were left free to breastfeeding colostrum for the 1-3 days after birth. In the evening the goats have milked before the kids' breastfeeding. The birth body weight were taken immediately after birthday. The kids were weighed weekly up to weaning in the morning.

Statistical analysis

They were using the General Linear Model (GLM) program to analysis the treatment data by T-test design, according to (SPSS, 2005) Duncan multiple Range test (Duncan, 1955). They were used differences significant among the means.

Results

The influence of season of birth, parity, birth type and gender of kid on birth body weight

Kidding and parity Season number seemed to have no significant influence on kid birth weight (Table1). In standard of that autumn time kiddies secured highest birth body weight (2.12±0.08 kg) compared with does kidded during dry season (2.07±0.11 kg). Birth type volume exerted significant ($p<0.05$) influence of kids' birth body weight (Table 1); single born kids were heavier at birth (2.31±0.10) than twin born kids 1.96±0.12 kg. The weight difference between single and multiple kids was about 350g. Twining average was found to be 48.6%, while the single average was high of 51.4%, as well the gender of kids' had highly influence ($p<0.01$) significantly on birth body weight, male kids' were heavier (2.35±0.08 kg) than the female kids' (1.93±0.10 kg) (Table 1)

Table 1. influence of season of birth, parity, birth type and gender of kid on birth body weight (Means ±SE)

Variables	No.	Birth weight
Season of birth		
rainy season	27	**2.12±0.08**
dry season	10	**2.07±0.11**
Overall mean ±SE		**2.10±0.11**
Parity order		
2nd parity	18	**2.03±0. 09**
3rd parity	19	**2.19±0.10**
Overall mean± SE		**2.11±0.10**
Birth type		
Single	19	**2.31±0.10[b]**
Twin	18	**1.96±0.12[a]**
Overall mean± SE		**2.11±0.11***
Gender of kid		
Male	21	**2.35±0.08 [a]**
Female	16	**1.93±0.10 [b]**
Overall mean±SE	37	**2.11±0.09***
***[ab] is* Values different superscripts different P<0.05**		

The influence of the season of birth, parity, birth type and gender of kids' on growth performance

Season of birth recorded non-significant effect on growth performance (Table 2); however kids' born during the autumn and dry season reached the same body weight at 12th weeks.The Similarly parity number secured no effect on kid's growth rate from birth to weaning time. Kids born from does have 3rd parity had heaviest growth rate to weaning period as 9.35 kg compared to kids born to 2nd parity does (9.05 kg) (Table 2). Type of birth and gender of kids' were not statistically significantly affect growth performance of desert kids to weaning period (Table 2). In spite of that single born kids and male kids were heavier during study period 1-4, 4-8 and 8-12 weeks at 4.22, 6.64 and 9.45 kg for single kids and 4.27, 6.57 and 9.19 kg for male kids respectively. Twin and female kids showed lightest body weight growth as 4.06, 6.52 and 9.01 kg and 3.96, 6.37 and 8.53 kg respectively.

Table 2. The influence of season of birth, parity, birth type and gender kid on kid growth change				
Variables	**No.**	**1-4 weeks**	**4-8 weeks**	**8-12 weeks**
Season of birth				
Rainy season	23	4.16	6.62	**9.22**
dry season	9	4.12	6.28	**9.20**
Overall mean±SE	32	4.15±0.19	6.53±0.21	**9.20±0.19**
Parity order				
2nd parity	16	4.25	6.53	**9.05**
3rd parity	16	4.05	6.53	**9.35**
Overall mean±SE	32	4.15±0.17	6.53±0.20	**9.20±0.17**
Birth type				
Single kids	18	4.22	6.64	**9.45**
Twin kids	14	4.06	6.52	**9.01**
Overall mean±SE	32	4.15±0.17	6.53	**9.20±0.16**
Sex of kids				
Male	19	4.27	6.57	**9.19^{a}**
Female	13	3.93	6.37	**8.53^{b}**
Overall mean±SE	32	4.15±0.17	6.53±0.20	**8.95±0.16****
^{ab} *is* Values different superscripts different P<0.05				

The influence of season of birth, parity, birth type and gender of the kids' on weaning body weight

Season of birth, parity number & birth type were not affected weaning weight, daily gain at 90 days of age (Table 3). The respective weaning weights were 9.22 and 9.20 kg for rainy and dry season respectively, 9.05 and 9.35 kg for 2nd and 3rd parities respectively, and 9.45 and 9.01 kg for single and twin kids respectively (Table 3). Daily body weight gain were significantly (P<0.01) affected by birth type. The highest weight gain scored by single born kids of 78.75g/day compared to twin kids 74.98g/day. Also gender of kids' was exerted significant (P<0.05) effected weaning body weight, where male kids' recorded as, 9.19 kg compared to their counterparty female as 8.53 kg (Table 3). Highest daily gain also scored significantly (P≤0.05) by male 76.43g/day compared to 74.00g/day for female (Table 3).

Table 3. The influence of season birth, parity, birth type and gender kid on weaning and body weight gain				
Variables	**N**	**Weaning weight**	**body weight gain/kg**	**daily body weight gain/g**
Season of birth				
Rainy season	23	9.22	6. 92	**76. 85**
dry season	9	9.20	6.89	**76. 56**
Overall mean ± SE	32	9.20±0.19	6.90±0.14	**76.63±1.49**
Parity order				
2nd parity	16	9.05	6.76	**75.10^{b}**
3rd parity	16	9.35	7.04	**78.17^{a}**
Overall mean ± SE	32	9.20±0.17	6.90±0.12	**76.63±1.32***
Birth type				
Single kids	18	9.45	7.09^{a}	**78.75^{a}**
Twin kids	14	9.01	6.75^{b}	**74.98^{b}**
Overall mean ± SE	32	9.20±0.16	6.90±0.12*	**76.63±1.30***
gender of kids				
Male	19	9.19^{a}	6.89	**76.43^{a}**
Female	13	8.53^{b}	6.60	**74.00^{b}**
Overall mean ± SE	32	8.95±0.16*	6.77±0.11	**75.44±1.33***
^{ab} *is* Values of different superscripts different P<0.05				

The influence of season of birth, parity, birth type & gender of kids at kid's mortality average

The second season of birth (autumn and cool dried season) made no exerted other significant impact on the pre weaning mortality (Table 4). The mortality rate was higher during the autumn 14.8 % as compared with cool dried season10 %. Party order also excreted no significant effect on mortality rate, with high average for does that had 3rd parity (15.81%) and lower on was 2nd parity with 11%. Twin born kids showed a high rate (P≤0.05) of morality with 22% as compared with kids born as single (5%). The rate of mortality was 13.51. Also gender of kids' significantly (P<0.05) effects mortality rate, where female had higher rate 18% as compared with male 9% (Table 4)

Table 4. the influence of season of birth, parity and gender on kids' mortality

Variables	No. of kids born	No. of kids died	Mortality %
Season of birth			
rainy season	27	4	**14.81**
dry season	10	1	**10**
Overall mean ± SE	37	5	**13.51**
Parity order			
2nd parity	19	2	**11.1**
3rd parity	18	3	**15.8**
Overall mean ± SE	37	5	**13.51**
Birth type			
Single	19	1	**5.26^{b}**
Twin	18	4	**22.22^{a}**
Overall mean ± SE	37	5	**13.51***
Sex of kids			
Male	21	2	**9.52 ^{b}**
Female	16	3	**18.75 ^{a}**
Overall mean ± SE	37	5	**13.51***
***^{ab} is* Values of different superscripts different P<0.05**			

Discussion

The influence of season of birth, parity, birth type & gender of kids' on birth weight

The weight before the postnatal have an impact on the weight after birth (Atoui *et al*., 2015). The birth weight of desert goat kids was in range of birth weight of the local goat kids Bushara *et al.* (2017a) The similarly goats are in peri-urban system (2.13kg and 2.15kg) and Wang *et al.* (2011), and higher than that explained by Bushara *et al*. (2017a) for comparison goats are nursing an urban administration (1.92 kg) and Bushara *et al*. (2017c) for Tággar goats (1.95 kg), Hagan *et al*. (2014) for a West African dwarf goats (1.20 kg), this birth body weight also is Lesser that explained by Atoui *et al*. (2015) for Tunisian domestic goats (2.34 Kg) and Hagan *et al*. (2014) (2.73 kg). The recent study was indicated the birth body weight of the kids are different according to season. Most of the studies were confirmed that kids birth weight were heavier in autumn season compared to dried seasoning, but other studies showed no any significant, (Hagan *et al*., 2014). However, the recent findings were agreeing with Atoui *et al*. (2015), Browning Jr and Leite-Browning (2014) and Andries (2013) who reported that the heavier birth weight may be dams have enough pasture plant during the autumn. The kids who born dried, they have lower body weight because pregnant goats have low quality forage that agree with Mahal (2013) and Otal (2010).

The impact of parity of dam on kid's birth body weight is thus imparted as the pregnant goats impact whose direct impact is limited to the breeding period (Mahal, 2013). In this study, parity number seemed have no significant (P<0.05) impact on kid's birth body weight, the same findings were obtained by Baiden (2007) & Mahal

et al. (2013) who mentioned that the difference ($p<0.05$) in birth weight between 1st and 2nd parity was not ($P<0.05$) significant. Considering the fact that a significantly the does in second parities produced kids with lighter birth weights than dams in third parties this result in contrast with many experiments by Atoui *et al.* (2015) & Hagan *et al*. (2014) they said that the kids born from young dams had a lesser body weight than adults. This study mentioned that kids from lesser parities had significantly lesser weights, than third parity kids. This probably have been improved the body weight with advances in parity or age, the large body weight of older parities provides them to much feed intake, which reflected on kids (Zahraddeen *et al*., 2008), as birth body weight was the impact of the diet of dam received during the pregnancy period.

Single born kids were heavier compared to twin kids and there were significant ($p<0.05$). The finding were support *et al.* (2017), Atoui *et al*. (2015) and Haldar *et al.* (2014) whom they were found similar results. However, Baiden (2007) and Zahraddeen *et al*. (2008) mentioned no difference among single & twin-born kids. The large body size at birth of single kids may be was related to womb environment, where a improve availability of single kid diet, which support Mahal *et al*. (2013) & Zhang *et al*. (2006). Generally, as litter size increases, kid's body weight decreased. The twining rate here is lower**,** which confirmed the previous results of the incidence of 57.9% twinning, mentioned by Pan *et al*. (2015) in Bengal Black goats. Also agree with Haldar *et al.* (2014) who found the incidence of 61.70% twins and 31.61% single births of Bengal black goats. The differences in litter size, number may be contributing to that litter size increase with advancing age of the doe. In study male kids weighed significantly heavier than female counterparts at birth, the weight difference between male and female kids was about 420g. The consistent superiority of male kids has been widely reported by (Bushara *et al*., 2017b and Atoui *et al*., 2015) previous reports indicated that the sex of the kid is significantly affected birth weight. According to Ugur *et al*. (2004) experiment there were difference in weight among both sexes might the fact that the pregnancy period does carrying male kids' is often longer (1–2 days) than carrying females. In General, the superiority of males over females is due to precocity, male body growth compared to female (Mahal *et al*., 2013 and Mabrouk et al., 2010).

The impact of season of birth, parity, birth type and gender of kids' at weaning and growth performance

The prenatal performance of kids' influence postpartum growth rate performance (Adenaike and Bemji, 2011). Season of birth scored non-significant ($p<0.05$) impact on growth average weaning weight, in spite of that kids born during the autumn period had heavier weaning weight compared to kids born during the dry period those finding agrees with Browning & Leite-Browning (2014), Merlos-Brito *et al*. (2008) & Zahraddeen *et al.* (2008) who find no significant ($p<0.05$) difference even 91-120 days of the age, and he concluded that, the highest daily weight gain of kids in the autumn compared to dried period is due to the abundance of weeds in the autumn. However, many authors mentioned that the there is significant impact of season on growth performance and weaning weight (Hagan *et al*., 2014; Mahal *et al*.2013 and Bushara 2012) they confirmed the recent experiment. In this study, the parity number recorded non-significant effect on the growth rate and pre weaning gain, similar results showed by (Browning Jr & Leite-Browning (2014) & Hagan *et al.* (2014) who found no difference in growth rate between 1st, 3rd and 5th parities. The effect of parity number on weaning weight were not significant, this agreed with findings of Boujenane & ElHazzab (2008) and Merlos Brito *et al.* (2008), however, contrasted to those results that weaning weights improve with advances in parity were obtained by Dereje *et al.* (2015), Andries (2013) & Otuma and Onu (2013). In the present experiment they have shown that the kids from lower parities has less body weights compared to the third parity kids'. Before weaning, the growth rate has no significant impact, according to birth type, but the growth rate was higher sightly in single birth compared with twins. The findings were in general agreement with Htoo *et al.* (2015); Mahal *et al*. (2013) & Goetsch *et al*. (2011). Another hand, contrast to present results Gubartalla *et al*. (2002) found that before weaning the daily growth gain was higher in single kids compared to twin & triplet kids', these Browning Jr and Leite-Browning (2014) and Dadi *et al*. (2008) mentioned that the single kids had a higher daily gain compared to the twins. Before weaning growth the gender of the kids has no significant impact on growth average, it was noted that the daily growth rate in males is faster and weighs heavier than females, this finding was consistent with Htoo *et al*. (2015), from first day to 60 days of age, Baiden (2007). Moreover the results of this experiment disagree with Zhang et *al*. (2009); Otal *et al*. (2010) & Mahal *et al*. (2013) who, mentioned that, the gender had a significant ($p>0.05$) impact on the growth rate of weaning. The reason the male has higher daily body growth performance because male have the presence of androgens, which play a role in growth.

Similarly the results observed by Bushara (2017a), Andries (2013), Zhang (2009) and Islam *et al.* (2009) reported that the gender type has a significant impact on weaning growth performance and male kids were

heavier slightly compared to female. Also the males are heavier than females because they are more active and aggressive and consume more milk and feed compared to female. The growth performance of mammalian are impact of genetic as well as direct material and environment (Rashidi, 2008; Baneh, 2010).

Impact of birth season, parity, birth type and gender of kids' mortality rate

Survival is a very economically It is better to work on genetic improvement and pay attention to the factors on the environment to improve the productivity of the herd (Hagan 2014; Andries, 2013). Before weaning the survivability kid's average were 86.49%, this findings agreed withTurkson *et al*. (2004) & Adenaike & Bemji (2011) for the goat of West African dwarf were higher survivability kids than results which were getting by Hagan *et al.* (2014) & Baiden (2007). The mortality average in the present findings was higher 13.51%, than what observed by Sumartono *et al*. (2016) and lesser than what reported with Bashara (2013) of 19% Taggar goats. The mortality average was highest during the autumn period in comparison a dry time, the same findings obtained by Browning Jr and Leite Browning (2014) and Baiden (2007) said that season of kidding have an influence on kid survivability. The negative impact of the rainy season upon goat performance could be due to several factors linked to severe gastro- parasitism constraints as observed by Hagan (2014) & Chowdhury (2002). Mortality average in autumn was the highest for the dry period might that due to the disease and parasitic infection in autumn, that contrasted with Bushara (2013) and Hailu (2006) explained 42% kids' death in dry season. In other studies Chowdhury (2002) found the before weaning survive life was improved with parity in Bengal Black & Sokoto goats. The results were in contrast with the observation of ALexandre *et al*. (2000) the increase parity had decreased the mortality average.

Birth type excreted significant impact on survivability rate, with a higher rate for single kids at 94.74% with 5.26% mortality rate and the lowest was 77.78% of twin kids with a high mortality rate of 22.22%. In other hand, nutrition, stress effects on pregnant goats, especially carrying twins, and the growth of the fetus, that might reasons of increase mortality of twin kids. These results were confirmed by the finding of Browning Jr and Leite-Browning (2014), Baiden (2007) and Andries (2013) who observed that the reduction of the nutritional value during the pregnancy period had increased mortality of kids. Sex of kid**s'** excreted significant effect on survivability rate, with high rates for male kids at 90.48% with 9.52% mortality rate and lower survivability rate was 81.25% for female kids with a high mortality rate of 18.25%. The high mortality average male leads to a lack of births. Similar finding obtained by Turkson (2004) & Snyman (2010) who explained that the female kids had higher life ability than male kids'. In Moreover, contrast to those finding Browning Jr and Leite-Browning (2014) and Hagan (2014), they reported that the gender of kids' did not impact survivability rates. Ruminants in the tropical area and consumer just pastures and crop residues, it represents only about 10% of the genetic potential of animals (Tedonkengpamo *et al*., 2002). Weaning at different ages may lead to weaning stress, it is necessary to determine the time of weaning a specific age under good management (Chai, 2015).

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