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Effect of summer grazing on percentage of lamb production

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Abstract

Summer grazing is the most important factors which has effect on all parameters of sheep production. This research is field research and conducted to assess summer grazing effect of Sheep on percentage of Lamb production, oneness, twin and multiple. Six herd with summer grazing and Un-summer grazing from tow village and district were selected and the information related to this research was collected, analyzed, summarized and compared with scientific results. Oneness lamb percentage production in herd with summer grazing at turkey, Arabic and Gadic sheep increased gradually by 88.8%, 76% and 70%, and at Un-summer grazing the increase was 77.77%, 69.23 and 13.33% respectively. Therefore, different percentage at mentioned Breeds are gradually 11.03%, 6.87% and 13.33%. Lamb percentage production in population of sheep with summer grazing in turkey, Arabic and Gadic Sheep gradually 106.96 %, 100% and 130% and at Un-summer grazing 87.9%, 84.6 and 116.6% received. Therefore, different percentage at mentioned Breeds are gradually 19.6%, 15.4% and 14.4%. Percentage of twin lamb production at herd with summer grazing in turkey, Arabic and Gadic sheep gradually 10.03%, 12% and 30% and at Un-summer grazing 5.05, 7.7% and 16.7% received. Therefore, difference percentage at mentioned Breeds are gradually 4.95%, 4.3% and 13.3%. Moreover Sheep with summer grazing has a lot of outstanding traits such as phenotype brightness, big eyes and tail, fitness, flushing and immune against to some diseases. Sheep holder with summer grazing has some superiority than Sheep holders with un- summer grazing such as shepherd holding, preparing and storing food for winter feeding, vaccination, castration, clip of ewe at proper time, spring salt prepare, good stable face to sun, cleaning floor of lamb at the on time, recording, continues relationship with another sheep holder and veterinarian doctors.

Keywords: Summer grazing, percentage of twin lamb production, turkey, Arabic and Gadic sheep. Sheep holders and summer grazing good traits

Introduction

One importance subject is that, each industry and Jobs to get Ideal benefits, need to special management (Rashiq, 2003) ^[6]. In summer grazing is one of the most important element to get ideal benefits. Summer grazing, the sheep migrates from 22 may – 20 June from warm climate to summer pasture which has a lot of forage and grazes for 3-4 Months. Summer grazing is the usual work of more Sheep holder at Chahab district which located at 150km east center of Takhar province. Problem of this research is that, the original benefit at the sheep holding is lamb production, so the sheep holders try to increase percentage of lamb production at their herd, but the lamb production is not enough with un-summer grazing.

The need and importance of this research is that, at the village and district of Takhar province, different breeds of sheep grazes by different local way, but lack of enough information about their efficiency, type of grazing are not on the right information and thereupon lamb production is not sufficient, therefore, the need for this research was exist. The goal of conducting this research in Chahab district is determining summer grazing effects on percentage of lamb production of sheep. Variable such as percentage lamb production, Oneness Lamb percentage production, Percentage of twin lamb production and multiple is at the focus goal of this research. Development of nowadays knowledge are production of continues study. The finding of this research will help to solve the sheep grazing problems and improvement sheep holder live and produce enough meat for our people.

Literature review

Takhar province is located in northeast of Afghanistan which has optimum climate for the development of Agriculture, livestock, and their people livelihood is depending on Agriculture, livestock and Horticulture. Chahab district located at the 150km north of Thakhar province center and its agriculture depending on season rainfall. Its summer and winter is warm and cool. Temperature of this district at during summer season is 20°C to 40 °C and at winter +10 °C to -29 °C. summer pastures located at the east of Chahb district and Badakhshan province. No research carried out about the effect of summer grazing on percentage of sheep lamb production.

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Fig 1: geographical location of Takhar province.

According to Arbit (2009) in Kirgizstan country, more benefits from sheep is attained when their areas of pasture, nutrition and care of health is well managed. Arbit finding does not determine effect off each areas and also more diverted to condition of Kirgizstan country which certainly has different to condition of Afghanistan climate. Rate of lamb production differs to different factors such as percentage of ewe early birth, percentage of lamb production, percentage of Ewe lambing production, percentage of lamb mortality from birth to end of breast feeding and mean at the end of breast feeding (Thomson,. 1973). Increase of Milk production of sheep by optimum grazing, increases lamb growth and its breeding which improves efficiency of some lamb production system Westman and *et al* (2005) determined the effect of grazing management on increase of lamb growth, but he has not evaluated another variable, while this study includes variables such as Lamb percentage of production, Percentage of twin lamb production and no production of sheep breeds.

More ever, research was carried out at this area in Afghanistan. Percentage of lamb production in Arabic sheep is between 65-80% and rate of its twin lamb production is between 0-2%, also the Percentage of lamb production at the Turkey and Gadic sheep is 75% and 80% respectively and rate of their twin lamb production is between 0-1% and 8-10% (Yalcin,. 1979) [12]. There is no information about the production, origin and exterior characteristics of Afghanis sheep. A new research was done in Baghlan and Kundoze provences indicates that live weight of turkey lamb is higher than balochi lamb (Rahman et al, 2013) [5]. Their researches was only about the evaluation of different part of lamb body at slaughtering.

All mentioned research was toward different breeds of sheep at exterior countries and some northwest and central province of Afghanistan, but most of them were about grazing and production characteristics of sheep in northeast area. However, such kind of research was not carried out in Takhar province which has deferent climate. Therefore, this is new research.

Method and materials

Population of this research is sheep of Chahab district – Takhar province. Six herd selected which everyone had between 80-

400 of sheep. Number of sheep of wealthy man people was between 30-180 and it makes nucleus of sheep herd and sheep of poor man was less than that. Tow geographical area from tow village and center of Chahab district were selected. One herd with summer grazing and other with un- summer grazing from each area selected which all become totally six herd, and information's about variable of this research were collected. Information regarding the condition of grazing and mortality of lamb by applying questionnaire (contains different aspect of sheep), interview with sheep holders and experienced man were collected. For example, shepherds were questioned which how many Ewe do you had at the past fall or past breeding? which breed Ewe was From?, how many of them got pregnant?, how many had normally birth?, how many was percentage of birth?, how many lamb had birth?, how many was percentage of oneness, twin and multiple?, how many lamb (six month lamb) died or sold up to now and what was reason?, To compare, analyze and test the obtained data of this research, with other researches of which already have been conducted in our country and in the world, international journal were reviewed. Collected data was, analyzed by these formulas:

1. Percentage lamb production of all herd = $100 \times \frac{\text{number of lamb during birth}}{\text{number of Ewe during breeding}}$
2. Percentage of oneness = $100 \times \frac{\text{number of Ewe oneness birth}}{\text{number Ewe of all herd}}$
3. Percentage of twin = $100 \times \frac{\text{number of Ewe tow birth}}{\text{number Ewe of all herd}}$
4. Percentage of multiple (three birth or higher) = $100 \times \frac{\text{number of Ewe multiple birth}}{\text{number Ewe of all herd}}$
5. Percentage of mortality up to six month = $100 \times \frac{\text{number of exist lamb at six months}}{\text{number Ewe had bird live lamb}}$

These Materials were used for this research:

1. Researcher with his collaborator and motorcycle
2. Digital Camera, pen and paper
3. Stockholder, shepherd and head of village.

Results and Discussion

Table 1: Percentage of lamb production on sheep with summer grazing

Species of Ewe	Number of Ewe at breeding	Number of Ewe did not lamb product	Number of oneness	Number of twin	Number of multiple	Total lamb	Percentage of lamb production
Turkey	279	4	248	28	-	304	106.69
Arabic	25	-	19	3	-	25	100
Gadic	10	-	7	3	-	13	130
Total	314	4	274	34	-	341	112.96

Table 2: Percentage of lamb production on sheep with un-summer grazing

Species of Ewe	Number of Ewe at breeding	Number of Ewe did not lamb product	Number of oneness	Number of twin	Number of multiple	Total lamb	Percentage of lamb production
Turkey	99	17	77	5	-	87	87.9
Arabic	13	3	9	1	-	11	84.6
Gadic	6	-	5	1	-	7	116.6
Total	118	20	91	7	-	105	89

Percentage of lamb production on sheep with summer and un-summer grazing

As indicated in table (1) and (2), differentiation in the percentage of lamb production is clear. As percentage lamb production of herd with summer grazing in turkey, Arabic and Gadic sheep are 106.96% and 87.87%, 100% and at un-summer grazing are 84.61%, 130 and 116.6% and at all 112.96% and 88.98%. Differentiation in lamb percentage production of sheep with summer grazing from sheep with un-summer grazing in turkey, Arabic and Gadic are 19.09%, 15.39% and 13.4% respectively. This means that 100 Turkey sheep with summer grazing produces 19.09 lamb higher than to turkey sheep with un-summer grazing. This phenomenon is also applicable for Arabic and Gadic as mentioned. Product discrepancy highness in turkey, Arabic and Gadic gradually may be from dominant this species at Takhar province. One subject at this research which can to focus on that is expectancy of high production shepherd from sheep with un- summer grazing. They paid less inattention to sheep health, proper nutrition and other requirements and also unbelieving to effect of vaccination and correct vigilance sheep, which is required for high production. Other factor may had involve which needs more research. Percentage of lamb production at favorable year is 100% and at unfavorable year is 60% (Rashiq, 2003) [6]. Mentioned data differs to the result of this research. When the year become unfavorable, sheep grazing also can be affected. Above author, reported that the percentage of lamb production at turkey sheep is between 75-80% and twin lamb production is between 8-10%. According to mentioned report, percentage of lamb production in Gadic breed is between 65-75% and

percentage of twin is between 0-1%. Also, percentage of lamb production in Arabic sheep is between 65-80%. Here is high difference in percentage of twin between Rashiqs finding and this research which needs more study. According to yalcin (1997), percentage of lamb production in Turkey breed is between 75-80% and in Arabic sheep is between 75-80% and in Gadic breed is between 65-75%. Mentioned research was conducted in Helmand, Qandahar and Farrah provinces, and did not have compatibility to this research, and meanwhile long time was pass from that research.

Percentage of lamb production in developed country under pasture condition is between 87-93% and under farming is between 104-109%. Whatever lamb twin production is more, mentioned percentage and also further salable lamb at the end of grazing are exist. As sheep which has twin lamb, produces 18kg meat more than sheep which has oneness lamb. So, despite characteristic of twin lamb production has less heritability, but has economic effect. Whereas, twin production is less at first birth, therefore youthful sheep which produced twin, probably transmit mentioned trait to future breed. So, in selecting the above trait it is better to choose the twin must take attention which came from young sheep, to replace the parents (Rashiq, 2003) [6]. Presumption from above differentiation is that, summer grazing has a lot of effect on lamb production of sheep. Inattention to grazing quality, has negative effect to all lamb production of sheep (Tofil, 2013). On the Other hand, result of another researcher shows that better grazing decreases negative effect of Unequal climate and prevents ruin of sheep herd during drought, storm and rainstorm (Olaotswe., 2006) [4].

Table 3: Percentage of oneness and twin lamb production on sheep with summer grazing

Species of Ewe	Number of Ewe at breeding	Number of Ewe did not lamb product	Number of oneness	Number of twin	Number of multiple	Percentage of oneness	Percentage of twin
Turkey	279	4	248	28	-	88.88	10.03
Arabic	25	-	19	3	-	76	12
Gadic	10	-	7	3	-	70	30

Table 4: Percentage of oneness and twin lamb production on sheep with un- summer grazing

Species of Ewe	Number of Ewe at breeding	Number of Ewe did not lamb product	Number of oneness	Number of twin	Number of multiple	Percentage of oneness	Percentage of twin
Turkey	99	17	77	5	-	77.77	5.05
Arabic	13	3	9	1	-	69.23	7.7
Gadic	6	-	5	1	-	83.33	16.7

Percentage of oneness and twin lamb production in sheep with summer and un- summer grazing

Table 5: Percentage of oneness and twin lamb production on sheep with summer and un- summer grazing

Species of Ewe	percentage of oneness in herd with summer grazing	percentage of twin in herd with summer grazing	percentage of oneness in herd with un-summer grazing	percentage of twin in herd with un-summer grazing	percentage of twin reported by Rashiq (2004)
Turkey	88.88	10.03	77.77	5.05	8 - 10
Arabic	76	12	69.23	7.69	0 - 2
Gadic	70	30	83.33	16.66	0 - 1

As seen in table 5, percentage of twin lamb production in turkey and Arabic sheep with summer and un- summer grazing is 10.03, 5.05% respectively and nearly has consonant to compare with Rashiqs report (8 – 10), but not correct to Gadic sheep, because percentage of twin lamb production in Gadic sheep with summer and un- summer grazing gradually received about 30%, 16.66%. Result gotten from voucher table views that different factors has interfere on Gadic grazing in Takhar province which include less velocity of growth, poor phenotype, ruinous marketing, Shepherd illness and other. Percentage of twin lamb production in Arabic sheep with summer and un- summer grazing is 12% and 7.69% respectively. Mentioned differentiation views importance of summer grazing.

Scientific resource explains that productivity and lamb production of sheep at all breed are meanly 176 (17.6%) twin and 10 (1%) trinity and once (0.02%) quadruplet at one thousand parturition. Although this is heritable characteristic, but its heritability is compare to other characteristic is low. Study demonstrated that the heritability of multiple parturition is only 10 – 15%. More than one parturition related to further ovum releasing of each ram demand and nonentity losses of that at future development. If one ovum released, exemption to rare situation, one lamb can produce by its development (Rashiq, 2006) [7].

Releasing more than one ovum during ovulation is related to environmental factors such as feeding situation, Animal age and heritability factors. Occasionally, fitness and non-extremist fattening is Cause of high ovulation. So, improvement of feeding situation before breeding season is important. Age of ewe is important, because median age sheep than first young lamb and old ewe, produce more percentage of multiple lamb. However, this is good traits and has high economic values. Percentage of twin in Arabic breed is 0-2% which has not compatibility to this (7.7-12%) research (Rashiq, 2006) [7]. Reason of this maybe auspicious of Takhar province for sheep grazing compared to all country, which rainfall at Takhar province is higher than all country and it has effect on natural access of animal to forage.

Percentage of twin in Gadic sheep with summer grazing is 30% and at un- summer grazing is 16.66% which shows the importance of summer grazing, but mentioned percentage at some scientific resource was reported as 0 – 2% which has high difference to this research finding. Therefore, it needs more study at future. Some sheep holder in Takhar Province tells, Gadic sheep at each six months has twin birth which by this situation produce four lamb in one year.

If attention is paid to summer grazing, body condition score (BCS) up to breeding increases and gradually productivity of sheep also increases. If BCS reached to 3.3 – 4, Percentage of sheep productivity will reach 97% (Nudda, 2012) [3].

Percentage of twin in Turkey, Arabic and Gadic sheep are 8-10%, 0-2% and 0-1% respectively which has compatibility at one occasion and at tow occasion has not compatibility to this research (Yalcin, 1997). For more explanation of this matter, further study are needed.

Summer grazing

According to observation, evaluation and question about the type of grazing, it is distinguished that the summer grazing and un- summer grazing differs.

Population holder of sheep with summer grazing do at least four period of vaccination, enterotoxaemia (acidosis), pox, Anthrax and FMD. Good Population of sheep goes to summer grazing. Sheep holder idea is that summer pasture plays good

role on fitness and flushing of ewe before breeding season. Their opinion is that summer pasture loads nutritive and values forages and has optimum weather whereas the weather of un-summer pasture in Takhar province is hot and persecutor to lamb. Preparing enough food for winter feeding is another supper trait of sheep holder with summer grazing while sheep holder idea with un-summer pasture harms zemindar and gardener. Sheep holder with summer grazing has shepherd. Optimum nurture, supplement feeding and attention to ewe during breeding is another primacy of sheep holder with summer grazing. Culling of some old and less productive of ewe, good stable and faced to sun light during the winter, good relationship and behavior to veterinary doctor and other sheep holder is another advantage of sheep holder with summer grazing. Phenotype of sheep and lamb of sheep with summer grazing is glossy and color of Turkey, Arabic and Gdic Sheep are gradually camel, red and black. Sheep holder with good pasturing has 3-6 Dogs around their herds. Sheep with summer grazing has Brightness, big eyes, tail and some of their ram has aggressive behavior.

According to interview and observation with sheep holder, my collected and information about summer grazing indicates that Sheep holder which has good care of their sheep, at least each year takes four vaccine to ewe and tow vaccine to lamb which include enterotoxaemia (squirt) at spring, pox at harvest season, anthrax at after harvest and foot and mouth diseases (FMD) during summer grazing migration. Sheep holder who do not pay a good care of their sheep and do not complex vaccination on time may have less income from their sheep.

Going to summer pasture is best trait of grazing which there is high access to nutritive and value forage. Moreover, the weather of pasture is salubrious and favors to more feeding of sheep and lamb. Scientific study reported that C₃ forage is higher in summer pasture and has more nutritive value than C₄ forage. The effect of going to summer pasture on improvement of body condition of ewe needs further research. Whose have not compassion to their sheep, does not sends their sheep to summer grazing, because their mind that mortality of summer pasture is high and did not believe to sheep return.

Compassionate sheep holder prepare and store the food when it is cheap until insure their sheep requirement during winter and food is shortage. Sheep holder which has 30-100 sheep, appoint one shepherd. They further their sheep, collect small holder's sheep around himself and hereby reaches their number about 300-1000 sheep which all goes to summer grazing. Sheep with un-summer grazing, takes forage from small pasture and does not go to summer grazing. They do not prepare enough food and rely to another garden and field which causes to conflict. Culling of unfavorable ewe and ram is another favorable activity of whom has summer grazing. This activity has good genetic effect behind another environmental factors and compatibility of that with environmental effect ,become causal to increase percentage of lamb production.

Good Stable which has face to sun during the winter is a trait of summer grazing. Mentioned places compare to un-summer grazing contains good roof, wall and floor. Flushing or fitness before tow week of releasing ram among ewe is another trait of sheep holder with summer grazing. Mentioned activity applies through purchasing the falaiz (residues of dry melon farm), proper pasture or complement food. It has a lot of effect and increases percentage of oneness, twin and multiple lamb production. This work need little effort, but it has a lot of benefit to sheep holder. Studing the effect of Flushing need more research. Effect of flushing is less at sheep which made

from lamb early isolated or culled and their owner does not buy the falaiz.

Deworming during winter and spring and treatment of ewe and lamb sickness is another pretty activity of sheep holder with summer grazing which this work is not seen in un-summer grazing. Further to mentioned activity, castration of masculine lamb, wool catching of ewe at proper time, cleaning the floor of lamb proper time, record taking, continues relationship with veterinarian doctors are another fine activities of sheep holder with summer grazing. Overall, attention to factors such as health and environment are bases of summer grazing (lamy, 2012) [2].

Conclusion

From the result of this research it can be concluded that: Summer grazing has strong effect on all production parameters. Turkey sheep than Arabic sheep and Arabic sheep than Gadic sheep showed good response to summer grazing. Summer grazing increased percentage of lamb production in Turkey, Arabic and Gadic by 19.09%, 15.39% and 13.4% respectively. All percentage lamb production in three breed of Turkey, Arabic and Gadic with summer grazing is 112.96% and at un-summer grazing is 88.98% which its differentiation become 23.98%. Percentage of oneness and twin lamb production in Turkey breed with summer grazing is 88.9%, 10.03 and in un-summer grazing is 77.8%, 5.5% respectively. Percentage of oneness and twin lamb production in Arabic breed with summer grazing was 76%, 12 and in un-summer grazing was 69.23%, 7.69 respectively. Phenotype of sheep with summer grazing is glossy and can judge about them from distance of 100-300m. Color of Turkey, Arabic and Gadic are camel, red and black. Sheep with summer grazing has big tail. Sheep holder with summer grazing at least, yearly takes four vaccine to ewe and tow vaccine to lamb which include enterotoxaemia (squirt) at spring, pox at harvest season, anthrax at after harvest and foot and mouth diseases (FMD) during summer grazing migration. Going to summer pasture is best trait of grazing which there is high access to nutritive forage. Moreover, water and air of there is salubrious and favor to more feeding of sheep and lamb. Scientific study reported that C₃ forage is higher at summer pasture and has more nutritive value than C₄ forage. Flashing before tow week of releasing ram among ewe is another trait of sheep holder with summer grazing. Mentioned activity applies through purchase of falaiz (residues of dry melon farm), proper pasture or complement food. Deworming during winter and spring and treatment of ewe and lamb sickness is another pretty activity of sheep holder with summer grazing. In addition to mentioned activity, castration of masculine lamb, wool catching of ewe at proper time, on time cleaning of lamb floor, record taking, continues relationship with veterinarian doctors are another fine activity of sheep holder with summer grazing.

Recommendation

1. Summer pasture must be partitioned among the beneficiaries on the bases of justice.
2. prevention of natural Pasture break
3. security of the natural summer Pasture should be at attention

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