



Main breeding systems of sheep in Tajikistan

- necessity of studying sheep maintenance and feeding systems and using of pastures by groups of farmers and households in modern farming conditions;
- studying of sheep productivity and reproductive abilities depending on systems and technologies used by farmers;
- revealing the most acceptable systems and technologies sheep maintenance and feeding;
- determination economical effectiveness of compared systems

Material and methods of researches

- Experiments were conducted on Gissar sheep of farmers and households of Dusti Jamoat.
- Three groups of farmers and households were formed with approximately equal number of animals (100);
- 1 group of farmers and households with using pasture system of sheep keeping;
- 2 group – stall-pasture system (with using around village pastures in winter-spring season and grazing on summer pastures);
- 3- group –stall keeping system (control)
- **Indexes for study:** grow and development of lambs, ewes body weight and prolificacy, output of lambs.

Comparative indexes of animals

Characteristics	1-я группа	2-я группа	3-я группа (контр.)
Number of ewes	103	83	76
Lambled, heads / %	102 /99	80 /97	73/96.0
Output of lambs to 100 ewes	101	97	85
Survivability of lambs, heads / %	102/98	78/97.5	61/93.8
Ewes body weight, kg	58.80	54.30	51.20
Body weight of lambs at lambing:			
males, kg	4.88	4.53	4.26
females, kg	4.50	4.10	3.73

- Ewes of 1 group exceeded in March by 5.75 kg (12.5 %) and in June by 7.6 kg (14.8%) of animals from 3rd group. Whereas ewes of 2 group exceeded by 2.45 kg (5.3%) and in June by 3.1 kg (6.1%) of animals from 3rd group.
- At the end of summer grazing ewes of 1st and 2nd groups were to 15.00 kg (28.03%) and 11.2 kg heavier in comparison of 3rd group animals.

- Ewes prolificacy was - 99.0 and 97.0 %, with lambs output in calculation to 100 ewes respectively 101 и 97, whereas in 3 group these indexes were 95.0 % and 85 heads. Lambs, born on pasture were more viable. Male lambs were to 14.6 (6.3%) and female lambs to 20.6 (9.9%) heavier than lambs of 3rd group. Survivability of lambs in 1st and 2nd groups also was higher – 98.0 and 97.5% than at animals of 3rd group – 93.8%.

Body weight of ewes and lambs, kg

Characteristics	1 group	2 group	3 group
Body weight of ewes in March	51.6	48.3	45.8
Body weight of ewes in June	54.8	52.3	51.2
Body weight of ewes in August	68.5	64.7	53.5
Absolute gain	13.7	12.4	2.3
Body weight of lambs: 2 month	24.8	23.4	22.3
Body weight of lambs: 3 month	28.67	27.3	27.0
Body weight of lambs: 5 month	37.4	37.2	31.0

Gain in body weight of lambs and ewes' milk capacity

Indexes	1 group	2 group	3 group
Body weight of lambs at lambing, kg			
-males	4.88	4.53	4.26
-females	4.50	4.10	3.73
-average	4,70	4.32	3.99
At 20 day age, kg	10.80	9.80	8.70
Absolute gain, kg	6.10	5.48	4.71
Average daily	305.5	274.0	235.5
Ewes' milk capacity, kg/day	1.525	1.325	1.125

Results:

- During ontogenesis grow and development of lambs dependents from the ewes' milk capacity.
- In the year round pasture grazing animals retain their body weight in autumn winter time that is the main factor of relatively high ewes' milk capacity.
- Ewes' milk capacity at ewes that are kept on village pastures was low to 0.4 kg and 0.1 kg per day comparing with their analogs from 1st and 2nd groups.

- For the observing period absolute gain in body weight was higher at the progeny of 1st group animals (6.10 kg), than at animals of 2nd group (5.48 kg). Whereas lowest gain was in the 3rd group – 4.71 kg. Consequently, average daily gains were respectively 305.5 g, 274.0 g, 235.5 g.

- Therefore, pasture sheep grazing contributed to a better exercise their productive qualities, health and fertility.
- On average ewes' absolute BW gain was 11.4 kg and for lambs at weaning 6.4 kg. Fertility increased by 16 heads per 100 ewes. And survivability was more to 4.2%.
- Use of this method will enable farmers to obtain additional income in the form of increased BW and progeny at a relatively small cost.



Economical evaluation of households sheep keeping systems (in calculations of 10 animals, thousands somoni)						
Indexes	Systems					
	I		II		III	
Type of income	thousands somoni	\$ USA	thousands somoni	\$ USA	thousands somoni	\$ USA
Selling of rams and lambs	11.9	4729.7	7.5	1689.2	4.7	1058.6
-selling of ewes	2.3	2680.2	1.9	427.9	1.0	225.2
-selling of female lambs	0.5	112.6	0.2	45.1	-	-
-selling and consumption of fat-tail	6.3	1418.9	5.8	1306.3	4.6	1036.0
Total income	21.0	4729.7	15.4	3468.5	10.3	2319.8
forages	2.0	450.5	2.4	540.5	2.5	563.0
Maintenance and rent of pastures	2.8	630.6	1.2	270.4	0.5	112.6
Veterinary service	1.5	337.8	1.2	270.4	0.7	157.7
shearing	0.5	112.6	0.3	67.5	0.2	45.0
Selling expenses	0.4	90.1	0.3	67.5	0.4	90.1
Other expenses	1.7	382.9	1.0	225.2	0.7	157.7
Total expenses	8.9	2004.5	6.4	1441.5	5.0	1126.1
Net income	12.1	2725.2	9.0	2027.0	5.3	1193.7

The most objective criterion for evaluation of households on three systems is accounting and analysis of costs and income

- Income of first system in calculation to 100 animals was to 10.7 thousands somoni (\$2409.9) and in 2nd system to 5.1 thousands (\$1148.7) or respectively to 103.9 and 49.5% higher in comparison with 3rd system.
- Differences by net income comprised respectively 6.8 thousands (\$1531.5) and 3.7 thousands somoni (\$833.0) or 128.3 and 69.8%.





Work process

Weighing of new born lambs



Weighing and measurements of ewes



Main results

- Pasture system of sheep keeping allowed to better indicate productive abilities, health preservation, fertility and using of this system by farmers gives an opportunity to obtain additional income in the form of increased body weight and progeny at a relatively small cost.
- It is recommended on researches results to farmers and households apply pasture system and to give an especial attention to nutritious feeding of ewes during their preparation for the mating, as well as in the second half of pregnancy.



Thank you !

