

Community Action in Integrated and Market Oriented Feed-Livestock Production in Central and South Asia Project

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Theme 3: Improvement of livestock productivity

Activity 6: Early lambing for targeting lamb sale during Navruz (March) involving a genotype comparison in household flocks

The main objective is to test impact of early lambing on performance of ewes and lambs and on farm economics

Task. To test impact of early lambing to ewes prolificacy and vitality of lambs. Evaluation of economic effectiveness at early lambing versus traditional.

Experimental design :

| # | Households | Karakul | | Fat-tailed | |
|---|------------|---------|-------|------------|-------|
| | | early | trad. | early | trad. |
| 1 | Kasymbay | 43 | 57 | 48 | 52 |
| 2 | Abdukarim | - | - | 17 | 23 |
| 3 | Ergesh | 4 | 6 | 8 | 12 |
| 4 | Andas | 9 | 11 | 6 | 4 |

Ewes prolificacy and vitality of lambs in the household Kasymbay

| Indexes | Early lambing | | Traditional | |
|------------------------|---------------|------------|-------------|------------|
| | Karakul | Fat-tailed | Karakul | Fat-tailed |
| Ewes inseminated | 43 | 48 | 57 | 52 |
| Lambled | 41 | 45 | 57 | 52 |
| Conception rate, % | 95.3 | 93.7 | 100.0 | 100.0 |
| Lambs obtained. | 45 | 51 | 61 | 57 |
| Prolificacy of ewes, % | 109.8 | 113.3 | 107.0 | 109.6 |
| Lambs died (%) | 12 (26.60%) | 13 (25.5%) | 4 (6.5) | 3 (5.3) |
| Remained lambs, (%) | 33 (73.3%) | 38 (74.5%) | 57 (93.5) | 54 (94.7) |

Ewes prolificacy and vitality of lambs in the household Abdukarim

| Indexes | Abdukaram | |
|------------------------|------------|------------|
| | Early | Trad |
| Ewes inseminated | 17 | 23 |
| Lambled | 17 | 23 |
| Conception rate, % | 100.0 | 100.0 |
| Lambs obtained. | 19 | 27 |
| Prolificacy of ewes, % | 111.8 | 117.4 |
| Lambs died (%) | 3 (15.8%) | 1 (3.7%) |
| Remained lambs, (%) | 16 (84.2%) | 26 (96.3%) |

Ewes prolificacy and vitality of lambs in the household Andas

| Indexes | Karakul | | Fat-tailed | |
|---|-----------|---------|------------|----------|
| | Early | Trad. | Early | Trad. |
| Ewes inseminated | 9 | 11 | 6 | 4 |
| Lambled | 8 | 11 | 6 | 4 |
| Conception rate, % | 88.9 | 100.0 | 100.0 | 100.0 |
| Lambs obtained. | 9 | 10 | 6 | 4 |
| Prolificacy of ewes, % | 100.0 | 90.9 | 100.0 | 100.0 |
| Lambs died at Navruz, heads (%) | 6 (66.6%) | - | 4 (66.7%) | - |
| Lambs remained at Navruz, heads (%) | 3 (33.4%) | - | 2 (33.3%) | - |
| Lambs died at weaning (August), heads (%) | - | 2 (20%) | - | 1 (25%) |
| Lambs remained at weaning , heads (%) | 3 | 8 (80%) | 2 | 3 (75%) |

Ewes prolificacy and vitality of lambs in the household Ergesh

| Показатели | Karakul | | Fat-tailed | |
|---|-----------|-----------|------------|-----------|
| | Early | Trad. | Early | Trad. |
| Ewes inseminated | 4 | 6 | 8 | 12 |
| Lambled | 4 | 6 | 8 | 100.0 |
| Conception rate, % | 100.0 | 100.0 | 100.0 | 100.0 |
| Lambs obtained. | 4 | 7 | 9 | 12 |
| Prolificacy of ewes, % | 100.0 | 116.7 | 112.5 | 100.0 |
| Lambs died at 1 February, heads(%) | 3 (75.0%) | - | 6 (66.7%) | - |
| Lambs remained, heads (%) | 1 (25.0%) | - | 3 (33.3%) | - |
| Lambs died at weaning (August), heads (%) | - | 2 (28.6%) | - | 3 (25.0%) |
| Lambs remained at weaning , heads (%) | - | 5 (71.4%) | 3 | 9 (75.0%) |



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Technology of ewes feeding at h/d Kasimbay

| Forage | Daily ration, kg | Number of days | Price of forage, tenge | Expenses for 1 animal, tenge |
|----------------------------|---------------------|-------------------|---------------------------|---------------------------------|
| Early lambing | | | | |
| Hay | 1.5 | 90 | 8 | 1080 |
| Concentrates | 0.3 | 60 | 24 | 432 |
| Concentrates | 0.5 | 60 | 24 | 720 |
| Total | | | | 2232 |
| Traditional lambing | | | | |
| Hay | 1.5 | 120 | 8 | 1440 |
| Concentrates | 0.3 | 60 | 24 | 432 |
| Concentrates | 0.5 | 90 | 24 | 1080 |
| Total | | | | 2952 |

Technology of ewes feeding at h/d Abdukarim

| Forage | Daily ration, kg | Number of days | Price of forage, tenge | Expenses for 1 animal, tenge |
|----------------------------|------------------|----------------|------------------------|------------------------------|
| Early lambing | | | | |
| Hay | 2.0 | 90 | 8 | 1440 |
| Concentrates | 0.5 | 60 | 24 | 720 |
| Concentrates | 0.7 | 60 | 24 | 1008 |
| Total | | | | 3168 |
| Traditional lambing | | | | |
| Hay | 2.0 | 120 | 8 | 1920 |
| Concentrates | 0.5 | 60 | 24 | 720 |
| Concentrates | 0.7 | 90 | 24 | 1512 |
| Total | | | | 4152 |

Technology of ewes feeding at h/ds Andas and Ergesh

| Forage | Daily ration, kg | Number of days | Price of forage, tenge | Expenses for 1 animal, tenge |
|----------------------------|------------------|----------------|------------------------|------------------------------|
| Early lambing | | | | |
| Hay | 2.0 | 90 | 8 | 1440 |
| Concentrates | 0.4 | 60 | 24 | 576 |
| Total | | | | 1656 |
| Traditional lambing | | | | |
| Hay | 2.0 | 120 | 8 | 1920 |
| Concentrates | 0.4 | 90 | 24 | 864 |
| Total | | | | 2784 |

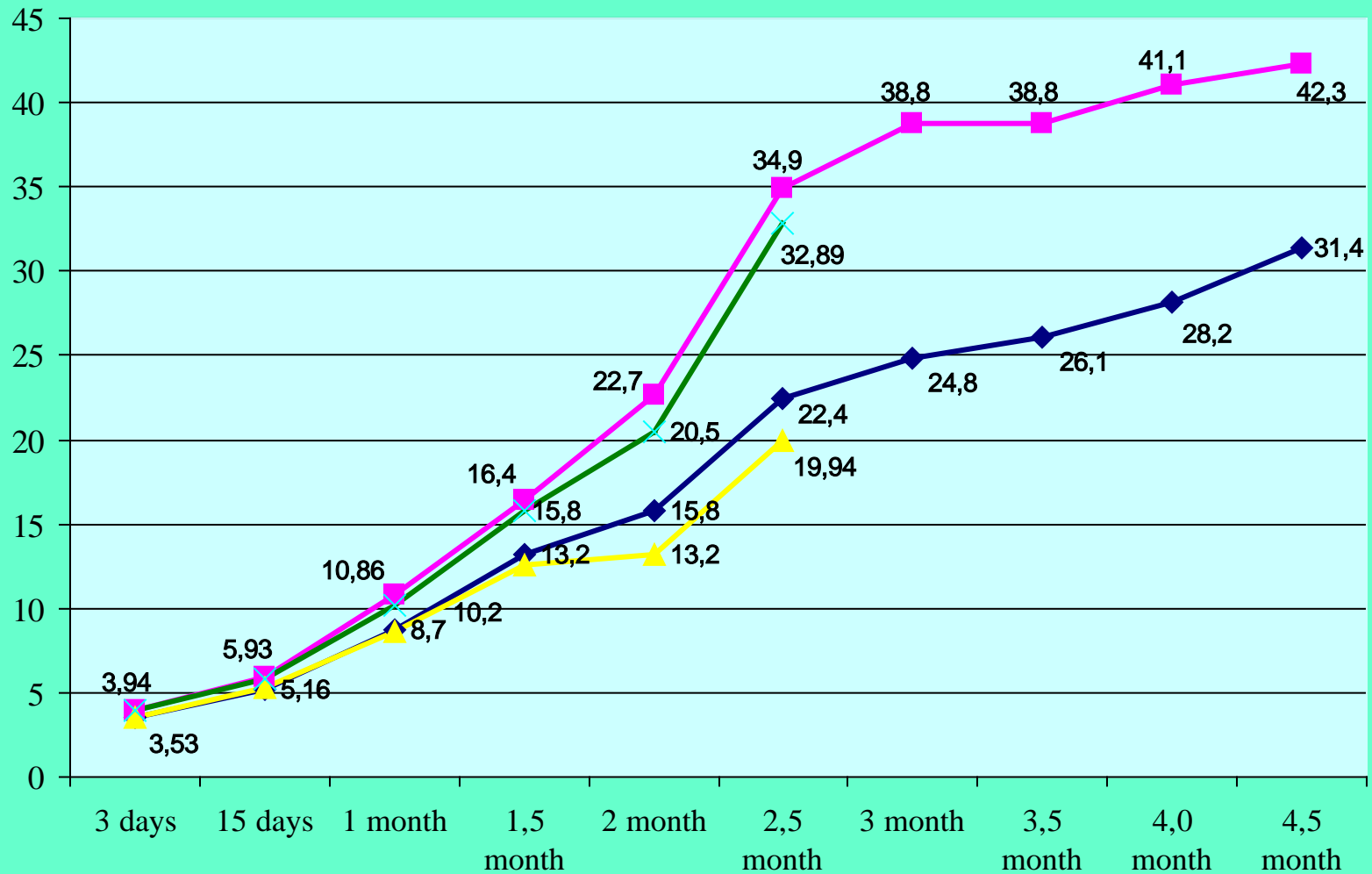


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Dynamics of life weight of lambs at h/d Kasimbay



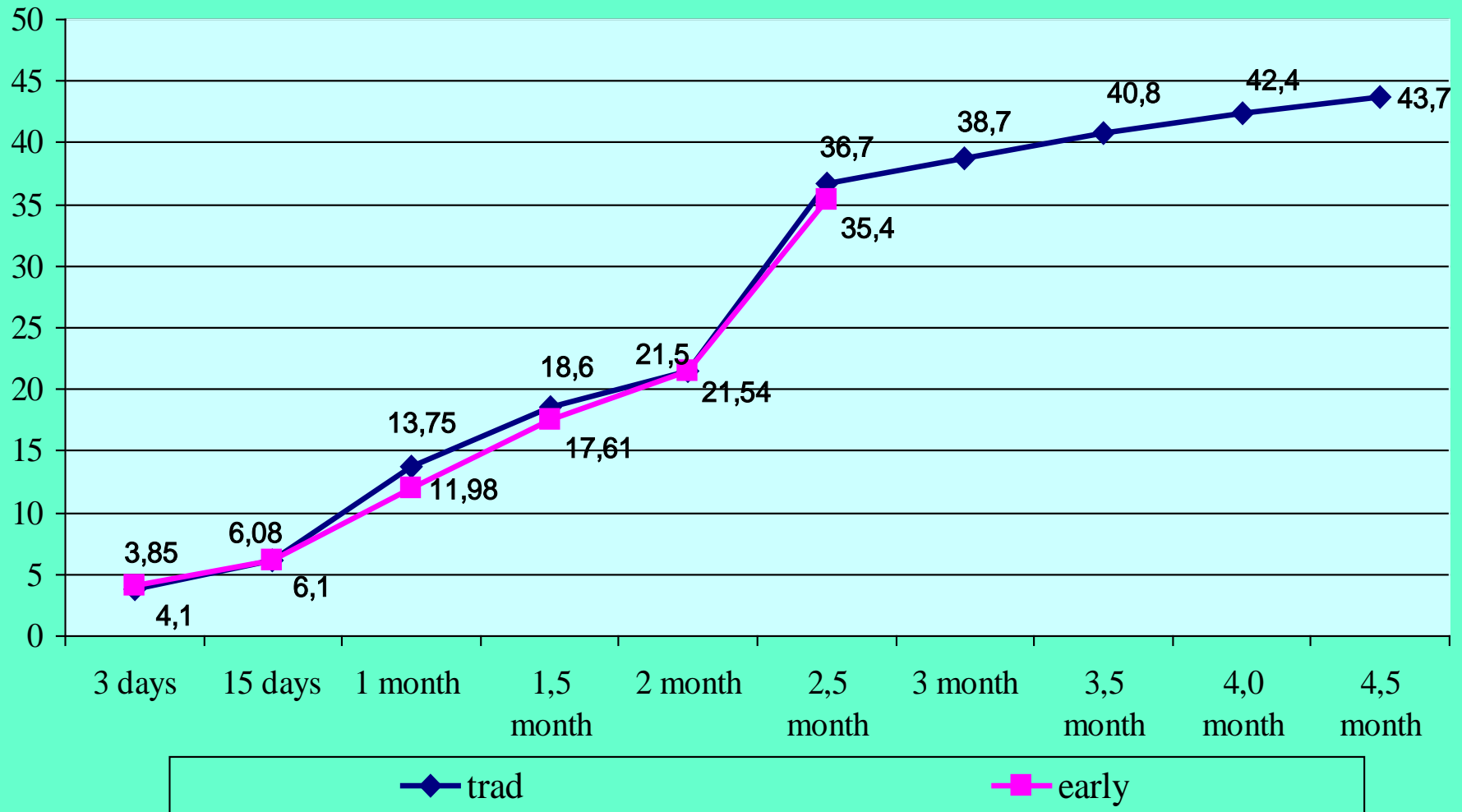
◆ karakul trad

■ fat-tailed trad.

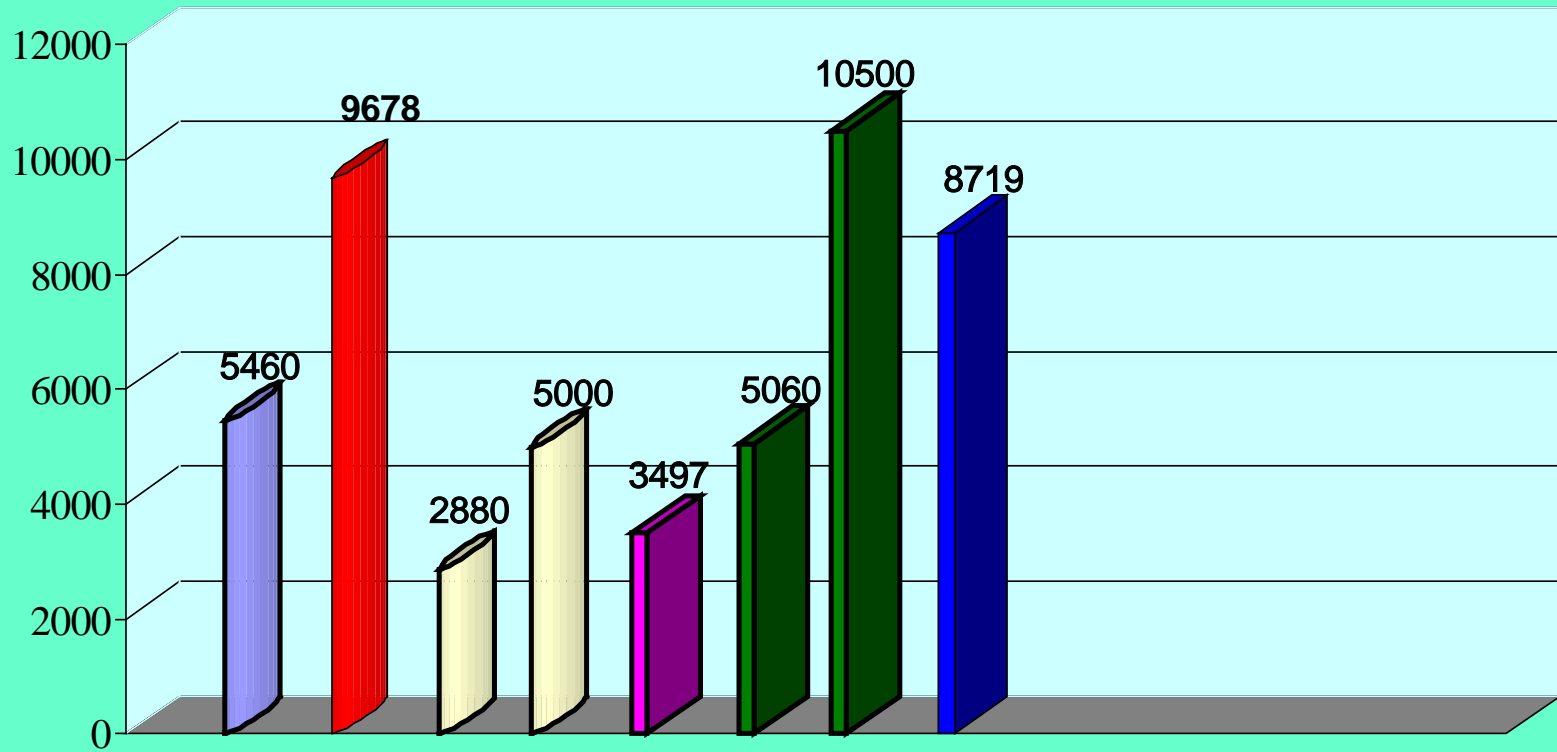
▲ karakul early

✕ fat-tailed early

Dynamics of life weight of lambs at h/d Abdukarim



Marketing



- Abdukaram (early, fat-tailed)
- Abdukaram (trad., fat-tailed)
- Kasimbay (early, karakul)
- Kasimbay (trad., karakul)
- Kasimbay (early, fat-tailed)
- Kasimbay (trad., fat-tailed)

Economical effectiveness of researches

| Indexes | Kasimbay | | | | Abdukarim | |
|--|----------|------------|-------------|-------------|------------|-------------|
| | Early | | Traditional | | Early | Traditional |
| | Karakul | Fat-tailed | Karakul | Fat-tailed. | Fat-tailed | |
| Maintenance expenses for 1 animal, tenge | 2232 | 2232 | 2952 | 2952 | 3168 | 4152 |
| Average selling price of lambs at Navruz, for 1 animal | 2879 | 5060 | - | - | 5460 | - |
| Life weight of lambs, kg | 19.9 | 32.9 | - | - | 35.4 | - |
| Price for 1 kg of life weight, tenge | 144 | 153.8 | - | - | 154.2 | - |
| Profit at Navruz, tenge | 647 | 2828 | - | - | 2292 | - |
| Average selling price of lambs at August, for 1 animal | 5000 | 10500 | 3497 | 8719 | - | 9678 |
| Life weight of lambs at August, kg | 35.4 | 47.2 | 31.4 | 42.3 | - | 43.7 |
| Price for 1 kg of life weight, tenge | 141.2 | 222.4 | 111.4 | 206.1 | - | 221.4 |
| Profit at August, tenge | 2768 | 8268 | 545 | 5767 | - | 5526 |

Resume

Early (winter) lambing gives the possibility to obtain additional profit from sale of lambs for high price during Naryz in March. However, this measure requires special control of feeding and maintenance during the winter lambing.

Activity 7

***Early weaning and fattening (Nagul)
of lambs for lamb marketing and
milking of early weaned ewes for
value addition in household flocks***

The main objective is early weaning of lambs (May) and fattening (June, July, August, September) for their sale and milking of early weaned ewes for additional income in the households conditions

EXPERIMENT'S DESIGN

| Households | Karakul sheep | | Fat-tailed sheep | |
|------------|---------------|-------|------------------|-------|
| | Early | Trad. | Early | Trad. |
| Kasimbay | 50 | 63 | 54 | 50 |
| Abdukarim | - | - | 24 | 20 |

Technology of preparing ewes and rams to mating

During period of preparing of rams for mating season they were situated at pasture-stall keeping. Length of grazing of sires was 3.5-5.5 hours and amount of consumed forage was 0.5-1 kg. Part of ration consisted from pasture fodder and hay. Total food value of concentrated mixture was 1.0-1.15 starch units with the content 140-150 g of protein. Concentrated mixture consisted of 78% grain crops, 8% fodder hydrolytic yeasts and meat-bone flour, 4% cotton cake, 1% defluorinated Karatau phosphate and the white salt. Ration of ewes before mating consisted of 1.15 starch units, 94 g digestible protein in 2.1 kg of dried fodder.

Technology of lambs growing

Ewes' daily ration of households Kasimbay and Andas consisted of motley hay – 2.5 kg and chopped corn – 0.25 kg. Feeding of ewes were 2 times per day.

Fodder methionine promote to intensive growth and effectiveness of using forages. Adding of methionine was started from 0.5 g per animal and on 10-th day it was 1 g.

Technology of additional feeding of ewes

In first half of gestation ration of ewes from the household Kasimbay consisted of 1.2 starch unit, 104 g of digestible protein and 3.0 kg of dried pasture forage. Also ewes for fed by concentrated fodder (0.5 kg): barley – 47.5%, corn's ear – 50%, carbamide – 0.4%, defluorinated phosphate – 1.9%, and common salt – 1.2%. In first half of gestation ration of ewes from the household Abdukarim consisted of 1.33 starch unit, 114 g of digestible protein and 3.3 kg of dried pasture forage. Also ewes for fed by concentrated fodder (0.5 kg): barley – 47.5%, corn's ear – 50%, carbamide – 0.4%, defluorinated phosphate – 1.9%, and common salt – 1.2%.



2007.09.17



2007.09.17

Prolificacy of ewes and vitality of lambs in the households Kasimbay and Abdukarim

| Indexes | Households | | | |
|------------------------|------------|------------|-----------|------------|
| | Kasimbay | | Abdakarim | |
| | Karakul | Fat-tailed | Karakul | Fat-tailed |
| Ewes inseminated | 113 | 104 | - | 44 |
| Lambled | 113 | 104 | - | 44 |
| Conception rate, % | 100.0 | 100.0 | - | 100.0 |
| Lambs obtained. | 113 | 104 | - | 44 |
| Prolificacy of ewes, % | 15 (13.27) | 12 (11.54) | - | 5 (11.36) |
| Lambs died (%) | 98 | 92 | | 39 |

Life weight of ewes (2008)

| Показатели | Households | | | |
|--------------------|------------|------------|-----------|------------|
| | Kasimbay | | Abdukarim | |
| | Karakul | Fat-tailed | Karakul | Fat-tailed |
| At lambing | 35.63 | 41.13 | - | 43.54 |
| 15 days | 35.73 | 42.16 | - | 46.83 |
| 30 days | 40.26 | 44.26 | - | 49.88 |
| 45 days | 42.21 | 46.40 | - | 51.60 |
| 60 days | 45.05 | 48.29 | - | 52.14 |
| 75 days | 48.56 | 50.90 | - | 54.73 |
| 90 days | 51.38 | 52.22 | - | 56.75 |
| 105 days | 51.59 | 53.93 | - | 58.44 |
| 120 days (4 month) | 52.67 | 55.16 | - | 61.58 |
| 135 days | 54.04 | 57.28 | - | 62.43 |
| 150 days | 55.48 | 58.44 | - | 64.04 |
| 165 days | 56.13 | 60.80 | - | 65.26 |
| 180 days (6 month) | 58.14 | 62.54 | - | 66.41 |

Life weight of lambs, kg

| Indexes | Households | | | | | |
|------------|------------|-------|------------|-------|------------|-------|
| | Kasimaby | | | | Abdukarim | |
| | Karakul | | Fat-tailed | | Fat-tailed | |
| | Early | Trad. | Early | Trad. | Early | Trad. |
| At lambing | 3,96 | 3,95 | 3,98 | 4,03 | 4,17 | 4,14 |
| 15 days | 5,75 | 5,73 | 5,89 | 5,96 | 6,89 | 6,93 |
| 30 days | 10,13 | 10,06 | 10,23 | 10,26 | 12,92 | 12,98 |
| 45 days | 13,78 | 13,78 | 16,33 | 16,42 | 17,54 | 17,60 |
| 60 days | 14,12 | 15,95 | 16,66 | 22,79 | 22,44 | 22,54 |
| 75 days | 15,68 | 16,56 | 17,98 | 23,92 | 24,73 | 24,83 |
| 90 days | 17,29 | 18,88 | 19,43 | 25,72 | 25,13 | 27,75 |
| 105 days | 18,67 | 20,59 | 21,13 | 27,63 | 26,74 | 29,33 |
| 120 days | 20,43 | 21,67 | 23,01 | 28,76 | 28,67 | 31,28 |
| 135 days | 24,65 | 25,04 | 26,64 | 33,24 | 32,43 | 35,24 |
| 150 days | 27,28 | 28,56 | 34,38 | 37,76 | 35,70 | 38,56 |
| 165 days | 30,26 | 31,47 | 38,08 | 41,40 | 39,24 | 42,06 |
| 180 days | 33,87 | 34,23 | 41,52 | 44,96 | 43,66 | 46,55 |
| 195 days | 35,91 | 35,45 | 45,21 | 45,18 | 47,36 | 47,42 |

Milk yield of karakul and fat-tailed ewes by periods of lactation

| Indexes | Kasimbay | | | |
|------------|----------|-------|------------|-------|
| | Karakul | | Fat-tailed | |
| | trad. | early | trad. | early |
| 07.05.2008 | 525 | 630 | 585 | 675 |
| 11.05.2008 | 508 | 624 | 564 | 653 |
| 16.05.2008 | 483 | 601 | 560 | 650 |
| 22.05.2008 | 435 | 586 | 551 | 642 |
| 27.05.2008 | 428 | 548 | 546 | 623 |
| 02.06.2008 | 412 | 523 | 524 | 604 |
| 07.06.2008 | 406 | 516 | 513 | 588 |
| 12.06.2008 | 375 | 498 | 456 | 561 |
| 17.06.2008 | 358 | 475 | 402 | 524 |
| 23.06.2008 | 320 | 456 | 344 | 497 |
| 08.07.2008 | 122 | 423 | 133 | 456 |



2008.04.28

Marketing of lambs (September)

| Household | Selling price, tenge | | | |
|-----------|----------------------|--------|------------|---------|
| | Karakul | | Fat-tailed | |
| | Early | trad. | Early | trad. |
| Kasimbay | 3850,0 | 3625.0 | 12950.0 | 12750.0 |
| Abdukarim | - | - | 13860.0 | 135400 |