SEMI-ANNUAL REPORT

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Developing dairy sheep production in Kazakhstan using the Awassi dairy breed and its crosses -second stage

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1. PRODUCTION OF AWASSI CROSSES

1.1. CROSSBREEDING BETWEEN AWASSI (AW) AND KAZAKH FINE-WOOLED (KFW) SHEEP

Production of Awassi crosses with KFW sheep took place in "Madina" farm, Konyrolen village, Panfilov district, Almaty region. "Madina" farm is locates about 350 km Southeast of Almaty city. It has about 1'600 breeding ewes. Flock owner is Otegen Bitebaev.

In November of 2002 "Madina" farm purchased one AW sire ram (ear tag 9807) from Mynbaevo flock. In November 2002 ram 9807 bred naturally about 30 ewes. 30 lambs were born in April 2003. There are currently 13 ewe lambs and 4 ram lambs of F1 AW crossbreds. 7.5-8-months-old F1 AW crossbred lambs (November 2003) had higher live body weight and body condition score than control KFW lambs. However the difference was not statistically significant (Table 1).

Table 1. Body weight and body condition score in F1 AW crossbred and control lambs at 7.5-8 months of age.

Breed & sex group	n	Body weight, kg (Mean ± s.d.)	Body condition (Mean ± s.d.)
F1 AW ram lambs	4	42.3 ± 4.15	2.7 ± 0.13
KFW ram lambs	5	39.7 ± 2.27	2.5 ± 0.11
F1 AW ewe lambs	13	36.2 ± 5.52	2.5 ± 0.09
KFW ewe lambs	20	32.6 ± 3.99	2.5 ± 0.15

In September of 2003 "Madina" farm purchased second AW sire ram (ear tag 0264) from Mynbaevo flock. In August of 2003 about 30 KFW breeding ewes were bred with AW ram 9807 and in October-November of 2003 about 120 ewes were artificially inseminated with fresh semen from AW sire rams 9807 and 0264. Control ewes (n=1'450 approximately) were bred with semen from KFW rams.

1.2. CROSSBREEDING BETWEEN THE AWASSI AND KAZAKH FAT-RUMPED (KFR) SHEEP

Production of Awassi crosses with KFR sheep took place in "Dias" farm, near to Ulguli village, Djambulsky district, Almaty region. "Dias" farm locates about 120 km Northwest from Almaty city. It has about 750 breeding ewes and ewe lambs of KFR breed. Breeding stock was purchased in 2002 and 2003 from East Kazakhstan (Tarbagatay, Semipalatinsk region). Flock owner is Bakir Atamkulov.

In October-November of 2003 150 KFR ewes and ewe lambs were hand mated with two AW sire rams (ear tags 72 and 81). Control ewes (n=400 approximately) were mated with KFR rams.

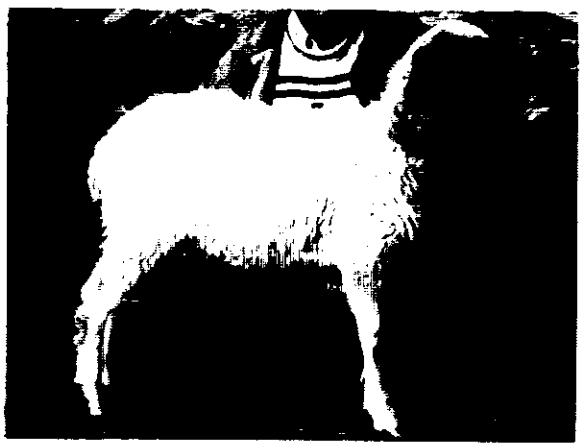
1.3. CROSSBREEDING BETWEEN THE AWASSI AND KARAKUL (CAR) SHEEP

Production of Awassi crosses with Karakul sheep took place in "Akdala" farm, Aryssky district, South-Kazakhstan region in collaboration with The Karakul Sheep Breeding Institute which is located in Shymkent city. The Director of the Karakul Institute is Dr. Abdrakhman

Ombaev and the sheep scientist working on Awassi crossing is Dr. Jaksylyk Yusupbaev. "Akdala" farm is a research experiment station of the KaraKul Institute and it has a flock of 8,000 Caracul sheep

During the period October 20 – November 20 of 2003, 160 KaraKul ewes were artificially inseminated with semen from Awassi ram (ear tag 82). Control ewes were artificially inseminated with semen from local Karakul rams.

F1 AW x KFW ewe lamb, "Madina" farm



F1 AW x KFW ewe lamb, "Madina" farm

F1 AW x KFW ewe lamb, "Madina" farm

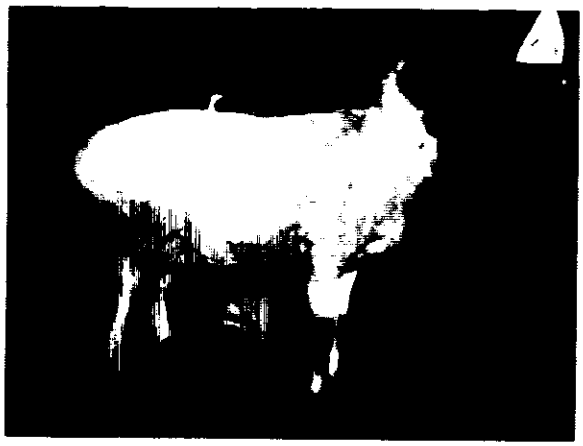
Left to right: Otegen Bitebaev (flock owner), Dr. K. Seitpan (sheep scientist), sheep manager, shepherd and Otegen's son ("Madina" farm)

KFR breeding ewes, "Dias" farm

KFR sire ram, "Dias" farm

AW ram # 72 on "Dias" farm

KFR breeding ewe, "Dias" farm



KFR breeding ewe, "Dias" farm

Prof. K. Kanapin, Bakir Atamkulov and shepherd ("Dias" farm)

Ear tags, artificial insemination instruments, supplies and manual were supplied to the farms.

2. AWASSI FLOCK IN MYNBAEVO VILLAGE

The purebred Awassi flock in Mynbaevo village consists of 3 sire rams, 23 ewes, 6 ram lambs and 6 ewe lambs, total 38 heads. Body weight of Awassi and local sheep as to September 2003 is presented in Table 2.

Table 2. Body weight of Awassi and local sheep in Mynbaevo flock (September 2003).

Sex and age group	Body weight, kg (Mean ± s.d.)			
	n	Awassi	n	Local Controls
Sire rams	3	86.8 ±10.18	2	82.8 ± 2.19
Ram lambs	6	37.2 ± 9.50	8	38.2 ± 4.47
Ewes	23	56.2 ± 7.99	20	53.7 ± 7.78
Ewe lambs	6	32.9 ± 5.46	8	32.0 ± 5.99

Awassi (n=9) and local (n=15) crossbred ewes were milked once a day in the morning during 40 days milking period in May-June of 2003. Ewes and their lambs were grazed during the daytime. Lambs were separated from their dams in the evening and kept separately during nighttime. Ewes were additionally provided with barley of about 0.7 kg per head per day. Individual milk yields were recorded daily.

Awassi ewes produced significantly ($P<0.001$) more milk than local ewes (Table 3,) and they had average daily milk yield of 0.980 liter, which was significantly higher than that of local ewes) which was about 0.3 liter/day, only.

Table 3. Milk productivity of Awassi and local ewes in 2003

Breed group	n	Number of milking days	Total milk produced, liter per head (M ± s.d.)	Daily milk yield, liter per head (M ± s.d.)
Awassi	10	40	39.81 ± 14.01	0.980 ± 0.396
Control (crossbreds with local Merino type sheep)	15	40	12.51 ± 3.50	0.337 ± 0.122

Milking started on May, about 1.5-2 month after lambing. The lambs were with their mothers all the time. One milking /day.

3. FUTURE WORK (next 6 months)

The main goals of the working plan till summer 2004 are:

A. To further evaluate the milk production potential of Awassi sheep under the Kazakh management situation as compared to the potential of local sheep.

B. To obtain more information about growth of Awassi and Awassi crossbred lambs.

A. Milk production

In February 2004 it is planned that the project will buy 20 mixed-age F1 Awassi crossbred pregnant ewes and 20 control Kazakh fat-rumped pregnant ewes from "Madi" farm, Akterek village, Djambulsky district, Almaty region. All ewes were sired by local rams. These animals will be transported to Mynbaevo village and kept together with Awassi ewes in the same conditions in the facilities of the Reproduction Lab. This set up will enable us to compare under the same management conditions the milk production of Awassi, Local and F1 ewes.

Lambing of ewe will take place mostly in the end of March through April. Ewes will be milked twice a day starting from first day after lambing till the end of August (approximately 5 months), or if they will dry off (less them 200g/day). The lambs will be removed from their mothers just after birth and will rise artificially on sheep milk till 45-50 days of age or up to 15 kg. During the suckling period the lambs will be exposed to hay and concentrated. The lambs will get four meals a day.

Individual milk records will be taken weekly. Body weight and body scoring will be taken 2-3 days after lambing and later, once a month. Milk samples will be taken from all animals three times: 0.5, 1.0 and 1.5 months after lambing and wil be analyzed for fat, protein and dry matter content. Sheep milk will be used to produce cheese, which will be marketed locally.

B. Lamb growth

Lambing of Kazakh Merino, Kazakh fat-rumped and KaraKul ewes, inseminated with Awassi semen in October-November of 2003 will be in mid March – April. During lambing newborn lambs will be identified and divided on breed groups. They will be ear tagged and records on birth weight and coat color will be collected. Body weight of lambs will be monitor before marketing..