

Semi-intensive sheep herd, Cyprus



Sheep herd, Moldova



Small Ruminants – the traditional way

- ◆ Based on marginal resources.
- ◆ Expectation for low income leads towards small investment.
- ◆ Poor cooperation, minimal institutional activities like R&D, data analysis.

Why change?

- ◆ Increasing world population, urbanization.
- ◆ High cost of labor.
- ◆ Rising standard of living.
- ◆ Shortage of land and water; attractive alternatives.
- ◆ Open borders.

Different approach:

- Increase level of production – milk and meat.
- Precise and intensive farming for maximal production and income.



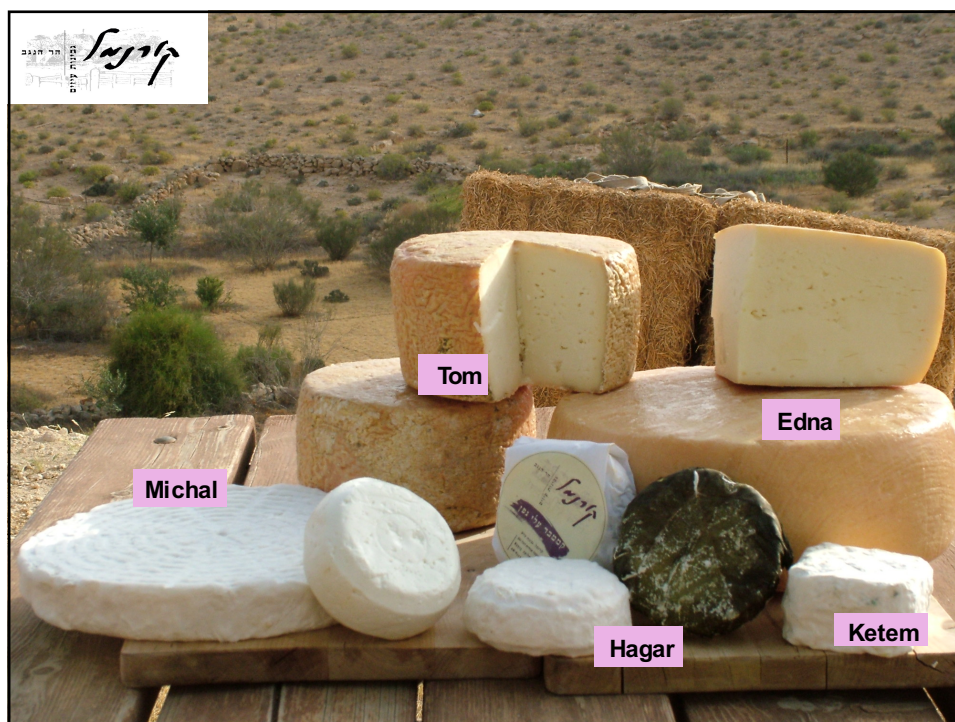
Dairy / Mutton, very intensive, indoor, supplement, controlled reproduction, computerized management systems.

Main tools:

- ◆ Management
- ◆ Lamb rearing
- ◆ Nutrition

- ◆ Improved genetic material





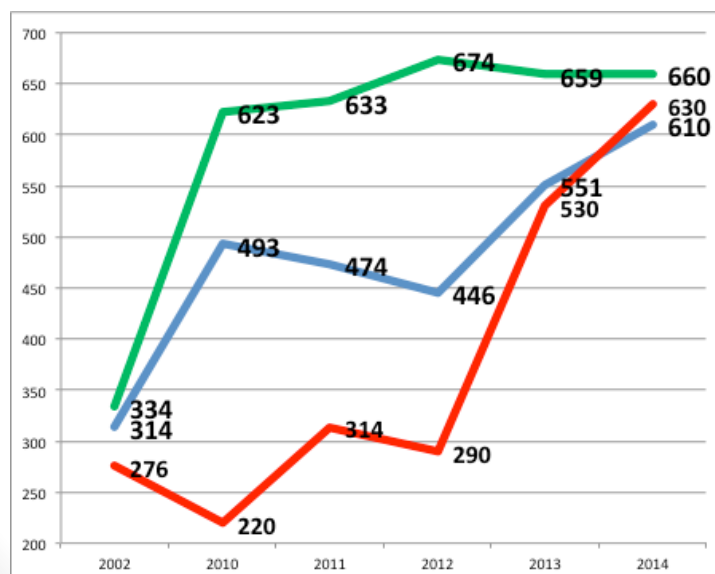
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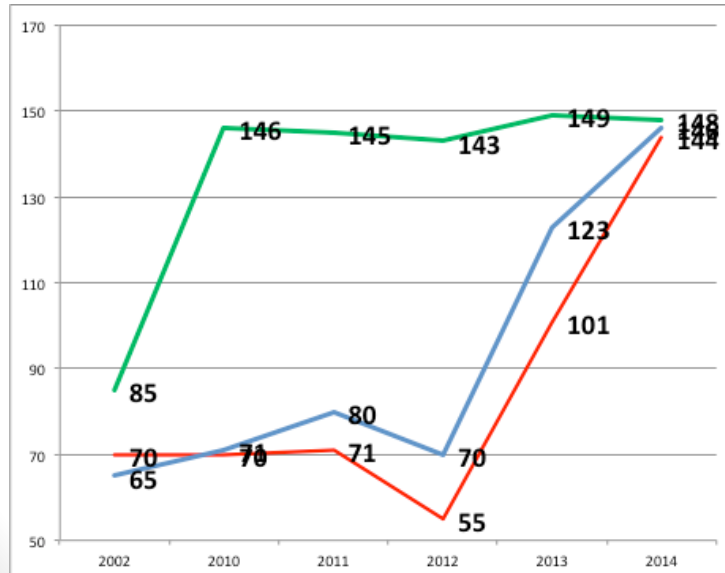
Why a management system is essential

- ◆ Large herds – big numbers
- ◆ Various levels of animal production.
- ◆ Must have a computerized system for tracking animals' performances.

Milk production, dairy sheep farms



Meat production, dairy sheep farms



Detailed management protocols

- ◆ Lamb rearing
- ◆ Reproduction
- ◆ Nutrition according to production status
- ◆ Detailed schedule of events for each group

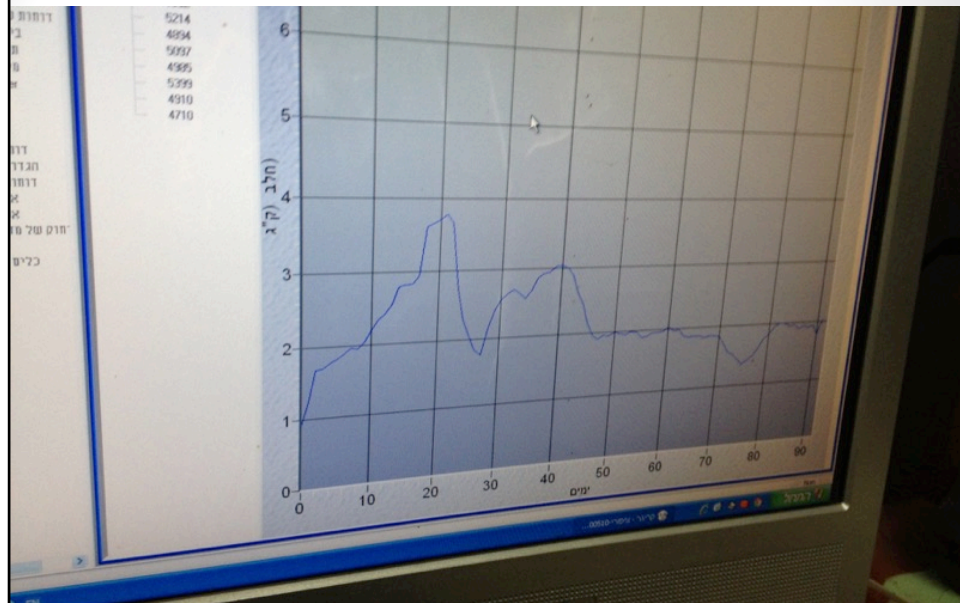
Management Tools

- ◆ Management system
- ◆ Milk meters
- ◆ Portable devices
- ◆ Scales [animals, feed]
- ◆ Reports - data analysis



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Milk production – ketotic ewe



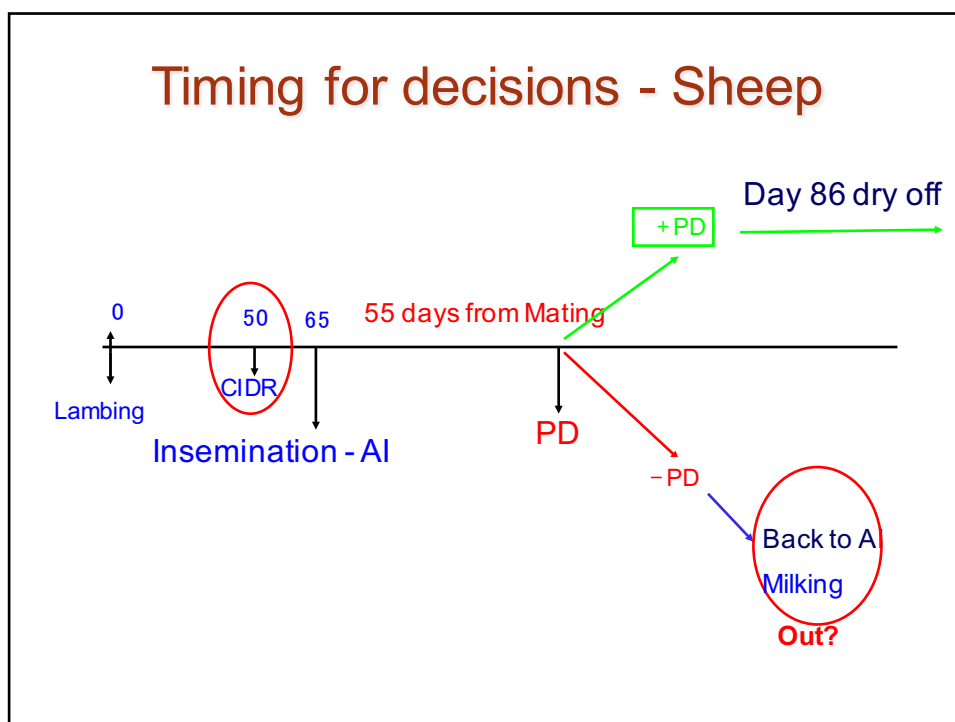
Action points

- Detect animals' falling performances and act to repair.
- Accurate timing of actions
- Keep productive animals only.
No emotional considerations
- Keep young Replacement animals

Essential considerations for intensive management:

- Maintain strict culling policy for ewes and ewe-lambs.
- Age, according to your experience
- PD+, empty in the lambing season
- SCC, udder problems
- Milk/lambs production - market conditions
- Nutrition adjustment as required







Main tools:

- ◆ Management
- ◆ **Lamb rearing**
- ◆ Nutrition

Artificial rearing of lambs and kids - overcoming the obstacles



The traditional way - Awassi ewes and lambs



The traditional way of rearing the young animals



Moving to intensive production

- ◆ Separate the newborn.
- ◆ Express maximal ewe milking potential
- ◆ Increase survival rate of the newborn.
- ◆ Vaccinations/ medications
- ◆ Heated, clean, disinfected environment

Lambing time



Meeting new “friends”

E. Coli

Cryptosporidium

Coccidia

Pneumonia

Etc....







Coccidia



Severe Coccidia

Cut the options for contamination

- ◆ Lambing site
- ◆ Vaccinations (clostridium, E coli...)
- ◆ Colostrum
- ◆ Procedure around parturition
- ◆ Treatment in the first days
- ◆ Preventive care

Burning the lambing site







Bedding with straw



Dairy sheep farm – first day
colostrum feeding









Milk suckling period

- ◆ First 35 d - ad lib milk replacer.
- ◆ Free access to water and high protein concentrates, hay.
- ◆ Clostridium vaccine 12-16 d.
- ◆ Coccidia treatment.

Rearing replacement Animals

- ◆ Stop fattening
- ◆ Increased quality roughages
- ◆ High levels of CP
- ◆ Moderate Growth rate
- ◆ Fat will cause infertility and reduce milk production

Rearing replacement Animals

- ◆ TMR or good grass hay plus limited concentrates.
- ◆ At the age of 7-9 months first AI/mating.
- ◆ Only two efforts to conceive; failed – cull.



Main tools:

- ◆ Management
- ◆ Lamb rearing
- ◆ **Nutrition**



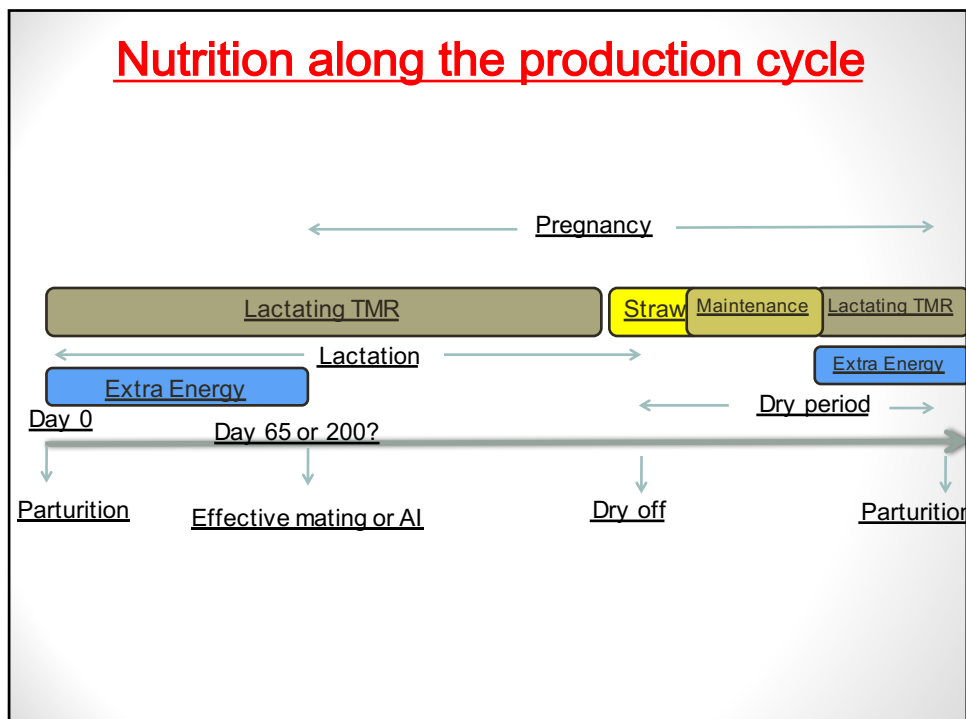
Managing nutrition for the dry period
and early lactation

19/05/2009

Main points

- ◆ Accurate timing of events
- ◆ Avoid fat animals
- ◆ Time for udder recovery (60 days)
- ◆ Gradual increase of high quality diet

Nutrition along the production cycle



Dry off procedure

- ◆ Start on day 72 of pregnancy
- ◆ Two weeks to stop milk production
- ◆ Cut concentrates dramatically
- ◆ Stop feeding lactating TMR
- ◆ Feed mainly straw
- ◆ Switch to once daily milking only, then just relieve pressure

Dry off procedure (cont.)

- ◆ Complete dry off at day 86
- ◆ Maintenance ration until day 110 of pregnancy
- ◆ Prophylactic abortion treatment according to vet recommendations at day 90, 110



Nutrition requirements for dry off, maintenance and last month of pregnancy.

Status of production	Dry Matter	ME	CP %	Daily CP gr	Ca Min	P Min	Vit A	Vit E	Min roughages %
Dry off ration	1.3	2.2	7.3	95	2.6	2.2	8,000	400	70
Maintenance	1.5	3.4	9.3	140	3.6	3.2	10,500	400	60
Last month of pregnancy	2.1	5.5	15.7	330	15	12	10,500	400	50

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Linear programming:

The screenshot displays the RationAll for Windows software interface. The main window is titled "2- Dairy Cows" and shows a total cost of \$13,751. The interface is divided into several sections:

- Ration:** A list of ration names (Hungay H, AUSTRALIA, DINA FARM, EGEPT COW, DINA FARM, Japan, FENECH, Dry Cow, Heifers, LH-COW, LH Heifer, LH Dry Cow) with a search bar and a list of feeds.
- Feeds (20/18):** A list of feed ingredients including Barley, Corn, Sorghum, Wheat, Tapioka, Soya Meal, Gluten 50%, Gluten Feed, Pro Lix, Cotton Meal, Rape Meal, and Sunflo Meal.
- Nutrients (17):** A list of nutrients including dry-matter, wet-matter, protein, fiber, forage fib, N.D.F., Forage NDF, A.D.F., CA, Phosphorus, Potassium, and Salt.
- Feed Table:** A table showing the composition of feeds, including columns for Feed, Min, Max, Solution, Shadow, Price, and %.
- Nutrient Table:** A table showing the nutrient content of feeds, including columns for Nutrient, Min, Max, Solution, and Shadow.
- Bottom Panel:** A section titled "DairyLine" with a cow icon and a "RationAll for Windows" logo. Below this is a small table showing the composition of the ration.

Lactating TMR

- ◆ Diversity of roughages
- ◆ Few grain and protein sources
- ◆ Vitamins/minerals according to your own experience
- ◆ Feed additives – Yeast, sodium bi-carbonate, salt
- ◆ Protected fat
- ◆ High quality roughages
- ◆ Whole grain

Nutrition requirements for high yield lactating animals

Status of production	Dry Matter	ME	Nel	CP %	Daily CP gr	Ca Min	P Min	Vit A	Vit E	Min roughages %	Min rough NDF
High Yield 80 kg ewe >3 kg daily	3.05	8.4	1.73	19.0	580	13.8	12	14,000	400	30	15-18



Take home messages:

- Main goal – economic bottom line
- Collect data continuously
- Base decisions on data
- Accurate timing of actions



Small scale milking facilities

Har Perachim organic farm



Thank you for your attention