





**Session 27: Health control and eradication
programmes in small ruminants**

**Health programmes for small
ruminants in Switzerland**

Dr. Rita Luechinger Wuest
rita.luechinger@caprovis.ch

Extension and health service for small ruminants (BGK)




Content

- Sheep and goats in Switzerland
- Health programmes
 - 1. Caprine arthritis encephalitis (CAE)
 - 2. Maedi-Visna
 - 3. Foot-rot
 - 4. Internal Parasites
 - 5. Pseudotuberculosis

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Sheep and goats in Switzerland

	Sheep	Goats
Animals (2008)	446'000	81'500
Flocks	10'500	6'600
Animals/flock	42	12
< 10 animals/flock	4'500	2'000
10-50 animals / flock	5'700	4'486
> 50 animals / flock	262	198
Alpine pasture	June-September	
50 % of population	50-3'000 animals/ herds ➔ Animals from different flocks	


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Health programmes to...

- Eradicate diseases
 - 1. CAE, 2. Maedi-Visna, 3. Foot-rot
- Survey diseases
 - 4. Internal parasites
 - 5. Pseudotuberculosis
- Prevent new outbreaks
 - During alpine pasture
 - Contacts on exhibitions
 - Stocking, new genetics


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1. Eradication of CAE Caprine Arthritis Encephalitis



- Agent: Lentivirus (SRLV)
- Infection: mainly via colostum
- Diagnosis: Serology (ELISA, Immunoblot)
- Therapy: none
- 1980: 80 % of Swiss goat population infected
- Economic losses:
 - milk yield,
 - average age of goats at culling 3 years

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Clinical signs of CAE

- Chronic infection of carpal joint
- Excessive loss of weight
- Increased and asymmetric udder

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CAE - Eradication programme

- 1984: CAE-Working group
- Culling of CAE-positive flocks/goats
 - Including relatives
- Lambing survey:
 - Separation of newborn lambs (before suckling colostrum)
 - Artificial rearing of kids: cow milk
- Regular blood samples
 - CAE-negative flocks after 3 years → Certification

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Achievements of the CAE eradication programme

Year	In flocks	In goats	Clinical Cases
1985	98 %	85 %	32 %
>> Since 1998	Compulsory controlling nation-wide		
2001	1.0 %	0.3 %	0 %
>> Since 2006	<ul style="list-style-type: none"> ▪ Randomly testing of flocks ▪ Yearly testing of all bucks 		
2009	< 1.0 %		0 %

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2. Eradication of Maedi-Visna (MV)

Why a Maedi-Visna eradication programme?

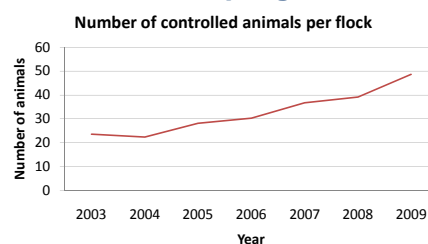
- Decreasing milk yield
- Progressive pneumonia
- Excessive loss of weight
- 1992 voluntary eradication programme with
 - Regular blood sampling
 - Culling of positive animals
 - Lambing survey

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Achievements of the Maedi-Visna eradication programme



- In 2009, 42 % of all milk-sheep in Switzerland are free of Maedi-Visna

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3. Foot-rot eradication programme

Why a Foot-rot eradication programme?

- Annual
 - Infections during alpine pasture
 - Labour intensive treatment in autumn/winter
 - Young lambs infected
 - High labour costs
- Farmers are unaware of
 - The development of foot-rot
 - Effective treatment

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Foot-rot eradication programme

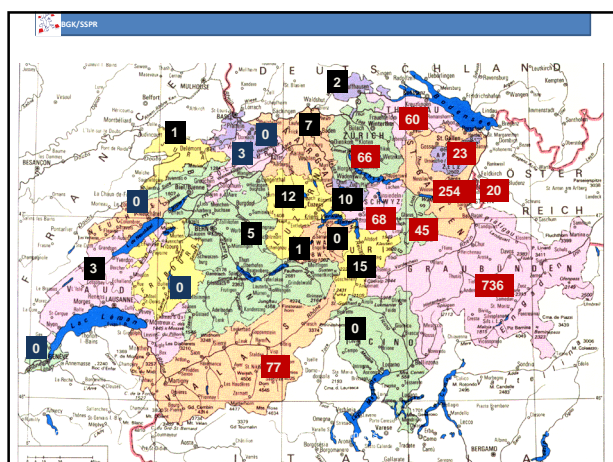
- Inspection of all animals foot by foot for clinical signs



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Treatment of Foot-rot

- Paring
- Separation of infected animals
- Footbathing (weekly)
 - Formalin (5 %)
 - Zinc sulphate (10-20 %)
 - Cupric sulphate (5-10 %)
 - Stand in for 5 to 10 minutes
- Cull of sheep with severe infection



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Flock is "free of foot-rot"

- Two inspections within 4-8 weeks:
no animals with clinical signs
 - 1st control by inspector, when flock seems to be free of foot-rot
 - 2nd control 4 to 8 weeks later by a veterinarian
- ➔ **Certification for flock "free of foot-rot"**

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Achievements: Free of Foot-rot

	Number	% of total
Sheep	64'500	15 %*
Flocks	1'200	12 %

* Registered in health service, in total about 20 % of Swiss sheep

- Flocks kept on alpine pasture
- Programm is effective for small and big flocks
- Regional (eastern part of Switzerland / mountains)

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Causes of Infections / reinfections

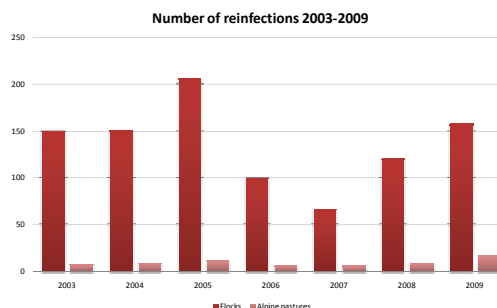
- Contact with infected flocks
 - Purchase of new genetics (male/female → breeders)
 - Exhibitions / animal transports
 - Inconsequent quarantine
 - Free grazing in autumn (no fences, contacts with non footrot free flocks)
- Animals with no typical signs of footrot
- Insufficient treatment
- Pasture management

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Reinfections of flocks



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4. Internal Parasite survey programme

Why a parasite survey programme?

- Dead animals even after worming
- Increasing resistance against wormer (mainly benzimidazoles)
- Analysis of situation in Switzerland in 109 sheep and goat farms
 - 83 % of the flocks showed at least a partial resistance (H. Hertzberg 1998)

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Number of worming

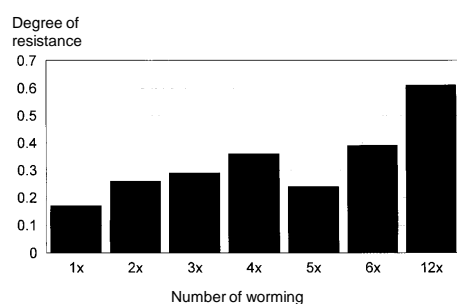
Number of treatments / year	% of farms
No treatment	2 %
1 x	4 %
2 x	20 %
3 x	31 %
4 x	19 %
5 x	11 %
6 – 11 x	7 %
12 x	2 %
Not specified	4 %

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Number of worming and resistances



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Aim of the parasite programme

- Information about
 - Worm burden and necessity of worming
 - Composition of parasite population
- Anthelmintic treatment only if necessary, as few as possible
- Detect resistance against anthelmintics
- The programme doesn't replace observation of the animals

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Internal parasite survey programme

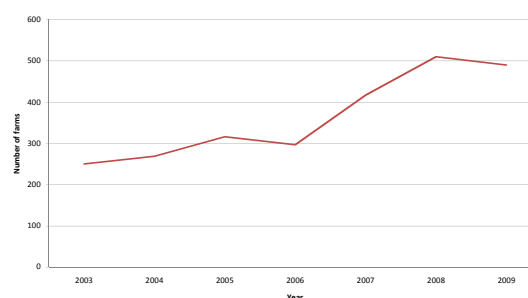
- Samples of faeces
 - Collective sample
 - About 5 animals of the same group
 - Grouping: lambs/adults, healthy/diarrhoea
- Analysis in a specialised laboratory:
 - quantitative determination (Eggs/g faeces)
- Total of 5 to 15 samples (according to the flock size) during the season of pasture

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Number of farms in the programme



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Advantages of the parasite programme

- 2009 about 500 sheep, goat, deer and camelid farms join the programme
- Worming
 - with effective wormer
 - only if necessary
 - Saving: 1 worming per year
- Resistance control

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5. Pseudotuberculosis survey/eradication programme

Why a Pseudotuberculosis survey programme?

- Risk of product safety – Zoonosis
- Superficial abscesses of lymph nodes (goats)
 - Problem of hygiene
 - Spread and survival of corynebacterium pseudotuberculosis, production loss
- Infections from herd to herd
 - During alpine pasture
 - On animal exhibitions

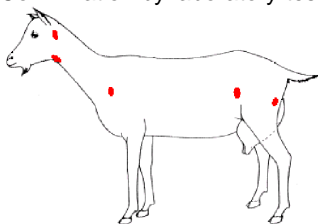
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Programme to detect clinical signs

- Yearly palpation of the external lymph nodes
- Animals over 6 month of age
- Confirmation by laboratory test of pus



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Further steps according to results

- Flocks without clinical signs
 - Certification, no limitations for trading
 - Palpation every year
- Flocks with pseudotuberculosis
 - Separation and elimination of animals with abscesses
 - Cleaning and disinfection of the stable
 - Optionally start with the eradication programme

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Pseudotuberculosis survey programme 2009

controlled	Number	% of total goats
Goats	4'090	5 %
Flocks	319	5 %
Negative		
... Goats	3'730	91 %
... Flocks	305	96 %

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Eradication programme

- New programme
- For herds without contact
- Blood sampling
- Elimination of positive animals
 - Again blood sampling
- Individual adaption for each farm
- No positive animals → Certification for herds "free of pseudotuberculosis"

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