

Shared pastures and anthelmintic resistance

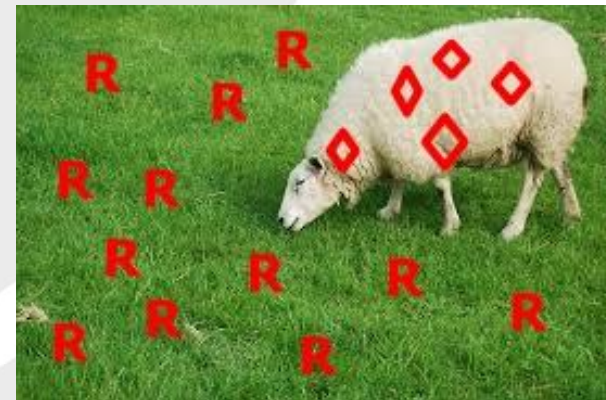
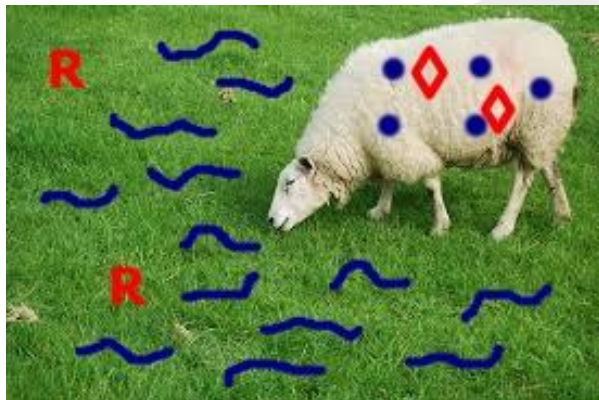
Ágnes Csivincsik, Gábor Nagy, Tibor Halász, Attila Zsolnai

Animal Science Days, 2017
Heilbrunn, Austria

Anthelmintic resistance in small ruminants

- AR is one of the most determinant factors of income
- Background of appearance and spreading:
 - unprovoked, whole-herd deworming strategy
 - inadequate pasture management

Conventional dose-and-move regime



R = resistant larvae

◊ = resistant worms

~ = susceptible larvae

● = susceptible worms

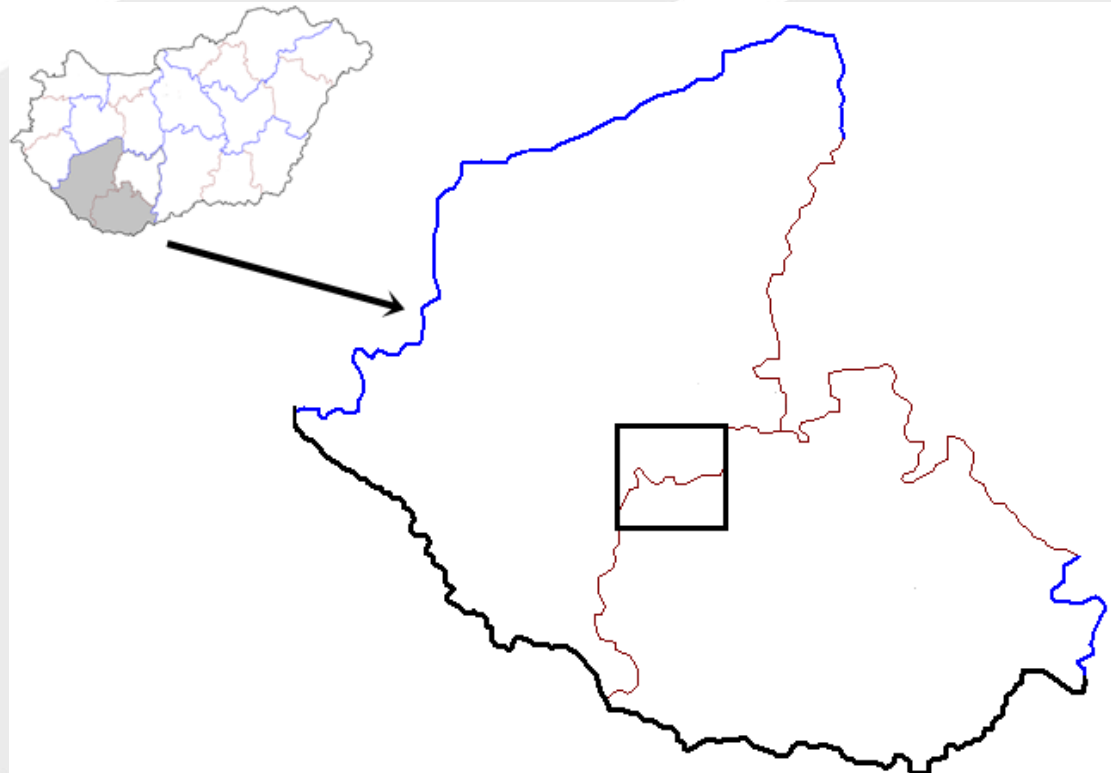
Rigid and frequent treatment causes AR very quickly.

Aims

1. To size up the level of helminthic cross infection between sheep and roe deer in a complex grazing system.
2. To determine the role of roe deer in AR spreading.

Materials and Methods

- 2014-2016; abomasi of roe deer (53) and sheep (40);
- comparison of nematode fauna;
- genotypic analysis of codon 200 of β -tubulin gene isotype 1 in *Haemonchus contortus*





Results

nematode species	roe deer	sheep
<i>Ashworthius sidemi</i>	0.13	0
<i>Haemonchus contortus</i>	21.67	43.99
<i>Teladorsagia circumcincta</i>	0.001>	43.94
<i>Spiculopteragia spiculoptera</i>	17.21	0
<i>Spiculopteragia asymmetrica</i>	0.17	0
<i>Ostertagia leptospicularis</i>	34.3	0
<i>Ostertagia ostertagi</i>	0.009	0
<i>Trichostrongylus axei</i>	0.004	0
<i>Nematodirus oiratianus</i> spp. <i>interruptus</i>	0.004	0

Results

genotypic frequencies

host	RR (%)	RS (%)	SS (%)
roe deer	17.1	28.6	54.3
sheep	68.5	28.6	2.9

Conclusion

- Regular herd-level deworming leads to imbalance between hosts and parasites
- Wild ruminants can reconstruct this balance by diluting effect

Take-home-message:

Never treat ad hoc without checking infection status!
Consider wildlife as a friend in antiparasitic strategy!

Thank you for your attention!

