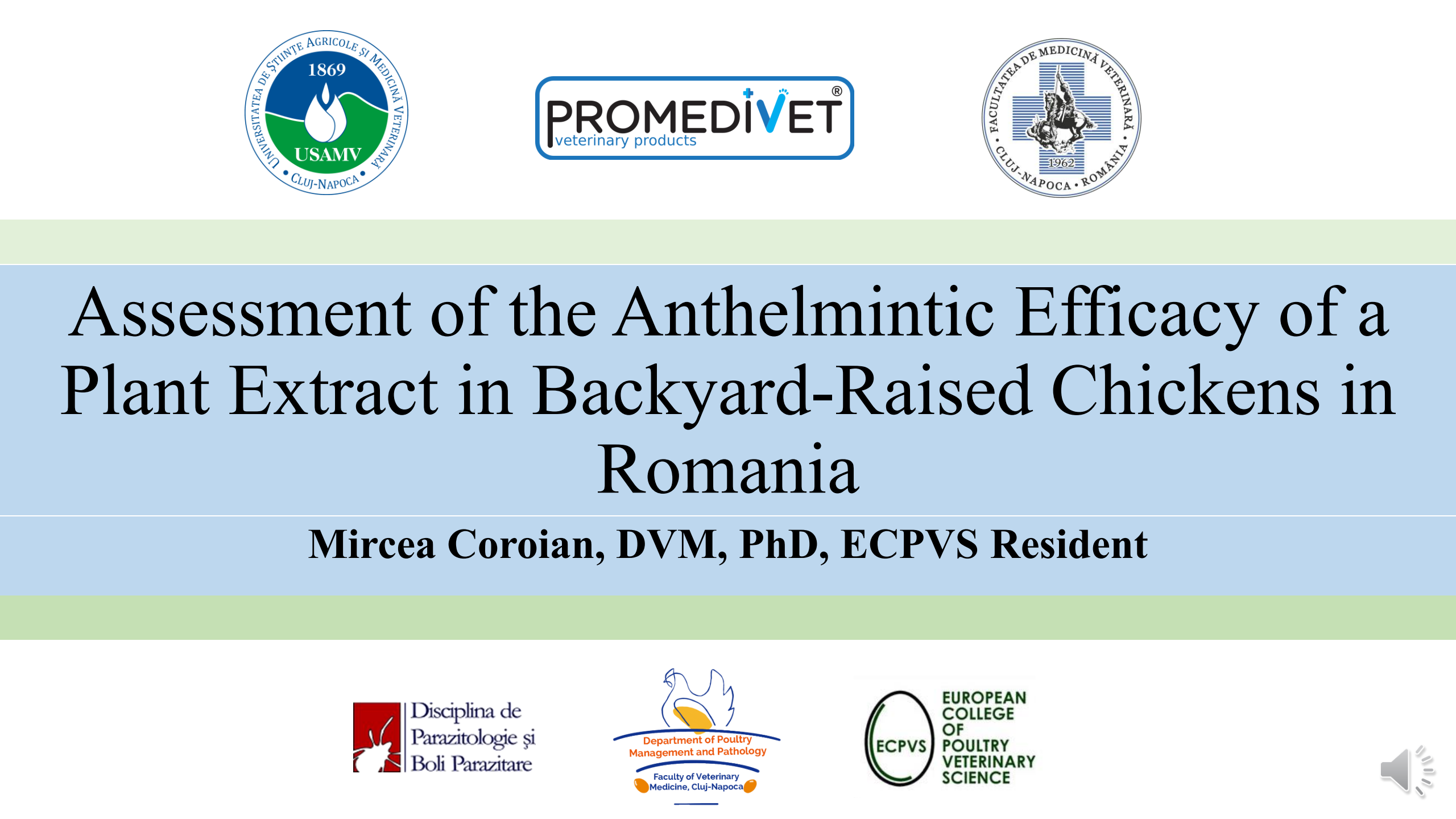
Assessment of the Anthelmintic Efficacy of a Plant Extract in Backyard-Raised Chickens in Romania

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Backyard farming in chickens



- reducing dependence on commercial sources
- requires minimal investment
- new trend - organic

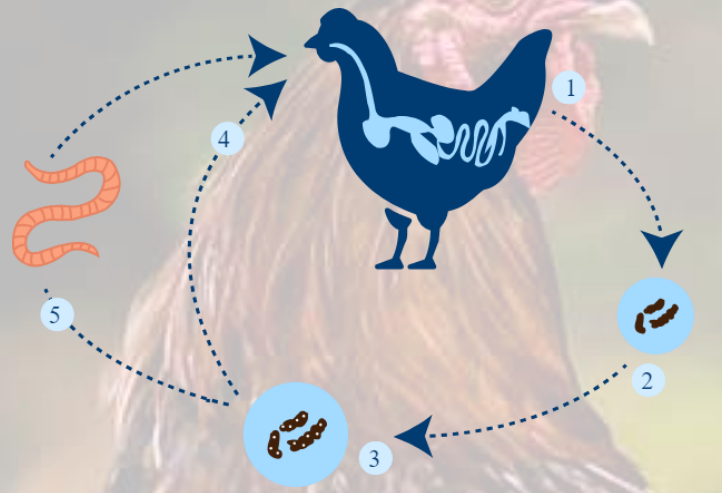
➢ **>13 million backyard chickens in Romania (Coroian et. al., 2020)**

- long-standing tradition that is culturally ingrained in rural life



Parasites in backyard chickens in Romania

- *Ascaridia galli*
- *Heterakis gallinarum*
- *Capillaria* spp.
- *Strongyloides avium*
- *Eimeria* spp.
- 145 flocks - **53,1%** prevalence (Coroian et al., 2024)









Anthelmintic treatments - Withdrawal period



Flubendazole 10mg
Eggs: 7 days
Meat and offal: 28 days



Flubendazol 50mg
Eggs: 7 days
Meat and offal: 14 days



Levamisole hydrochloride 100mg
Broilers, turkeys, ducks : 4 days
Not authorized in laying hens that produce eggs for human consumption.
Do not use in pigeons whose meat is intended for human consumption.

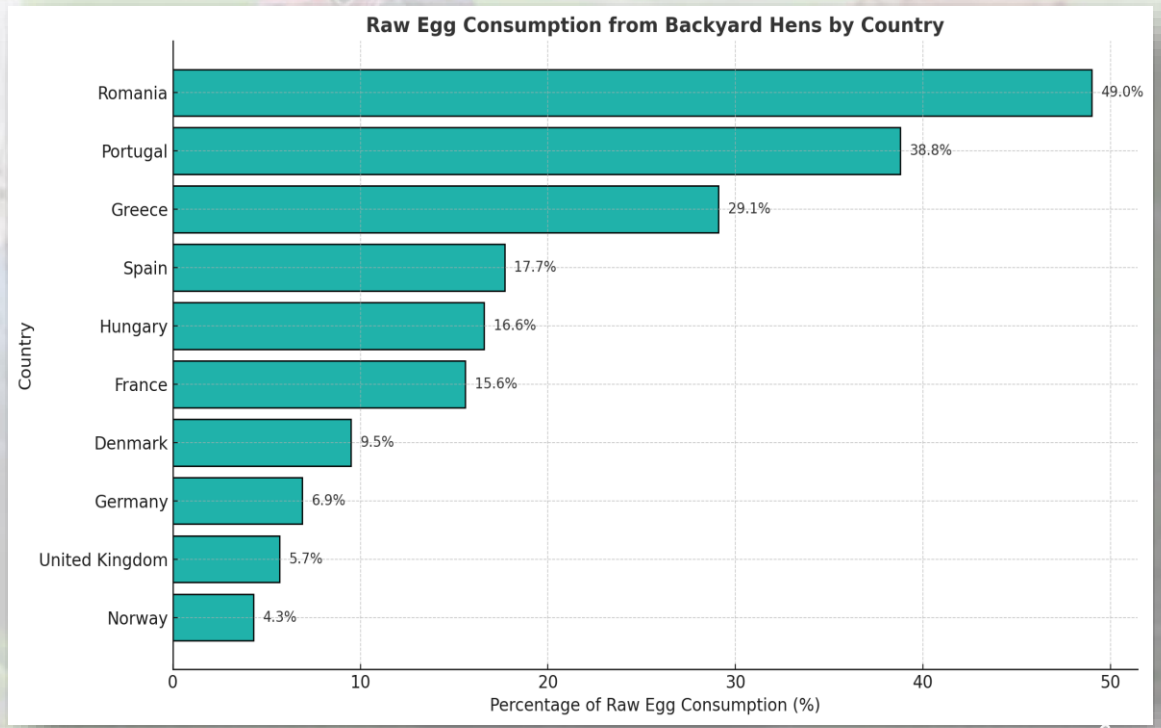


Fenbendazole 200mg
Eggs: 0 days
Meat and offal: 6 days

Challenges in Deworming Practices - Implications

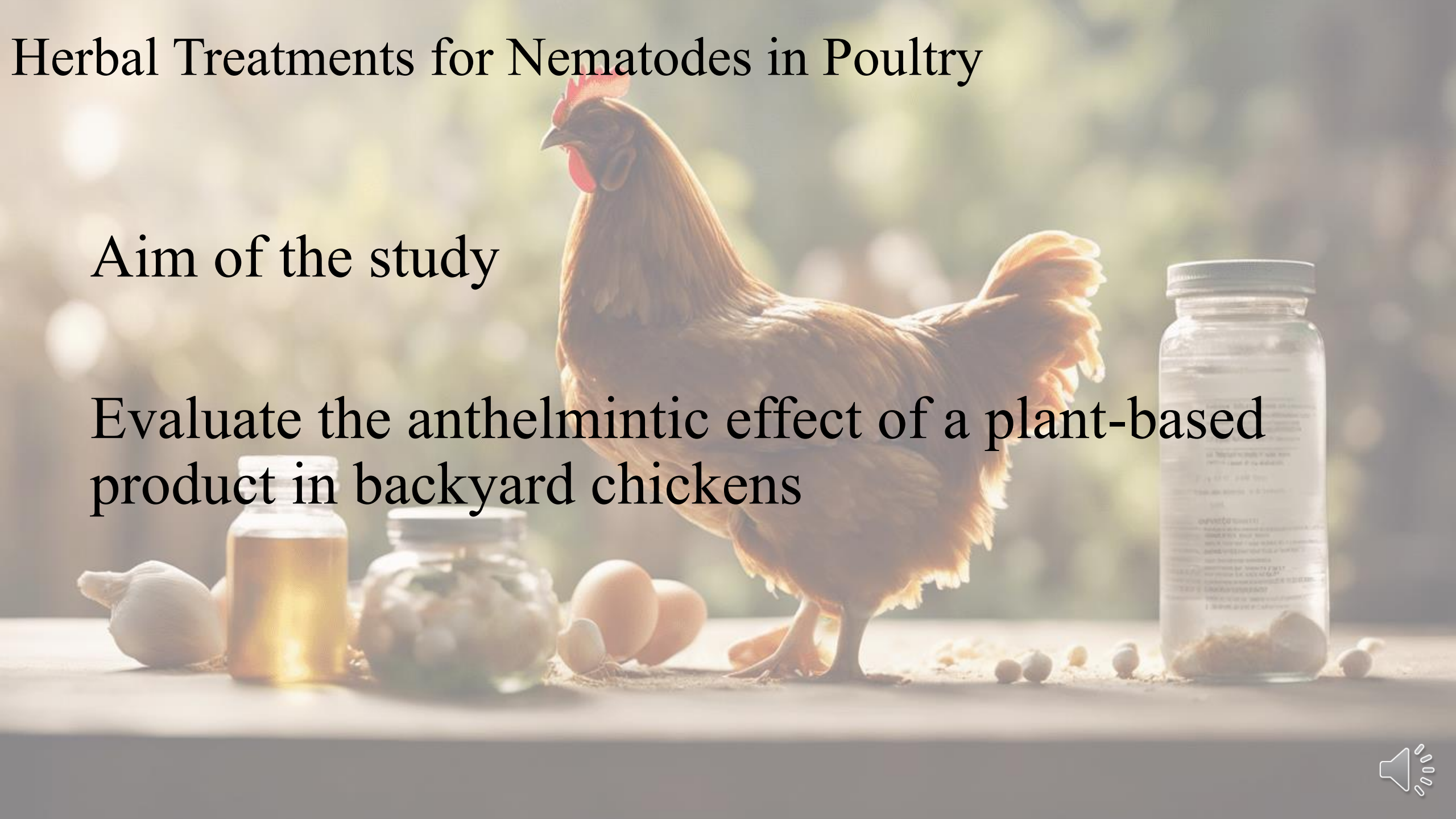
- Lack of legal regulation for deworming
- Easy access to deworming products in vet pharmacies
- Failure to comply with withdrawal periods

➢ **Raw eggs consumption from backyard hens**



SAFE CONSUME

Herbal Treatments for Nematodes in Poultry



Aim of the study

Evaluate the anthelmintic effect of a plant-based product in backyard chickens

Study design

- Sept 2023 – Aug 2024
- Cluj, Mureș, Harghita





- 35 backyard farms, 24 positive and included
- 3 groups, 8 farms/group

Control Group – no treatment

Fenbendazole Group – in feed, 30 mg / kg of feed for 7 days

Herbal-treated Group - plant based commercial product in drinking water, 3 ml / liter for 7 days.

Study design

❖ Alcoholic extracts from **seven** plants cultivated or found in the wild flora of Romania



1. Calendula officinalis, 2. Inula helenium, 3. Origanum vulgare, 4. Artemisia annua, 5. Thymus serpyllum, 6. Tanacetum vulgare, 7. Artemisia absinthium.



Promedivet Herba-top anthelmintic

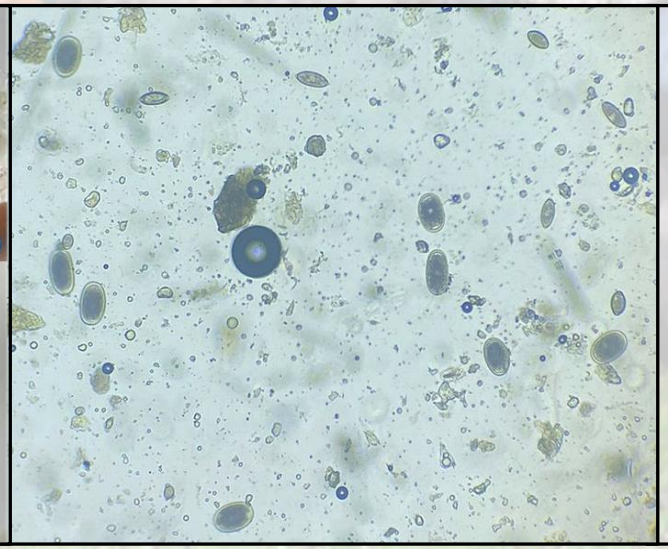
Sample Collection and Analysis

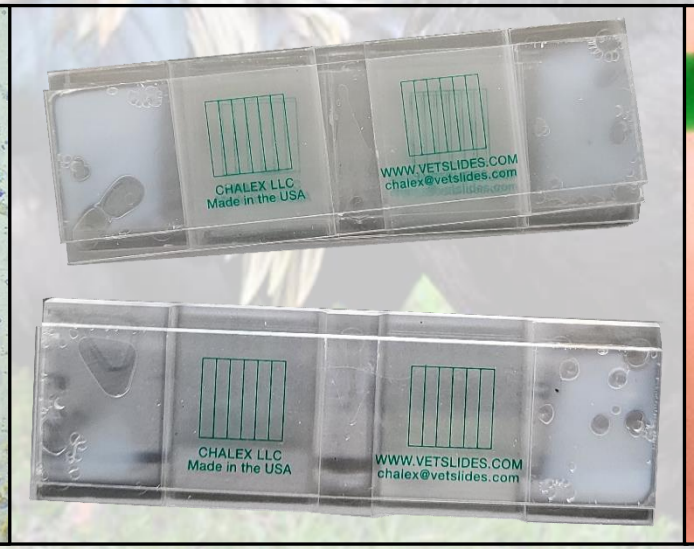
- 3 fecal samples collected / household on days 0, 7, 14, and 21 post-treatment
- Willis flotation method and McMaster technique for EPG evaluation (3 counts/sample)
- fecal egg count reduction test
- **% FECRT** = 100 x (1 – post-therapeutic EPG / pre-therapeutic EPG)

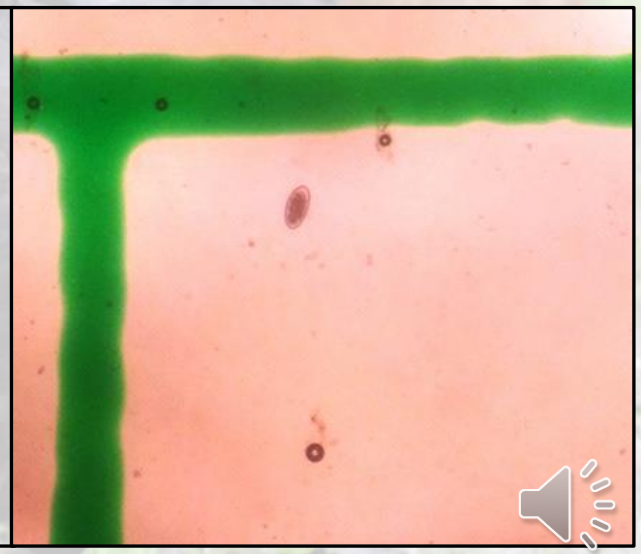
World Association for the Advancement of Veterinary Parasitology

WAAVP

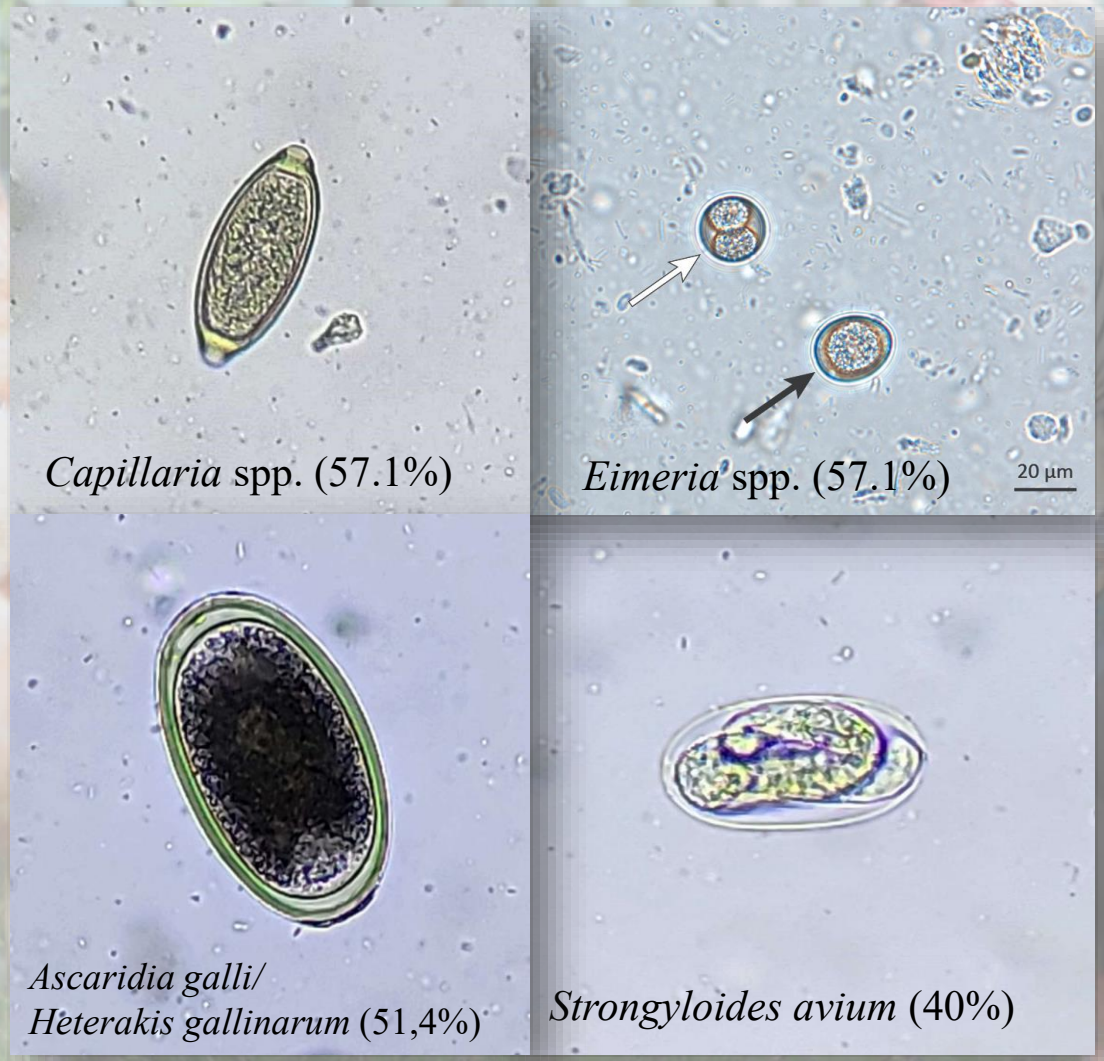


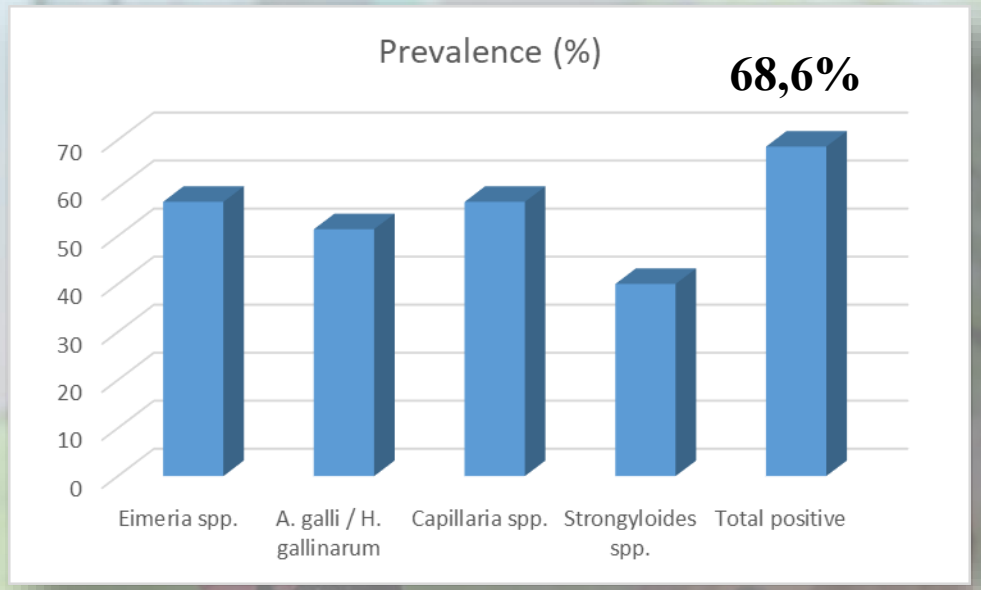




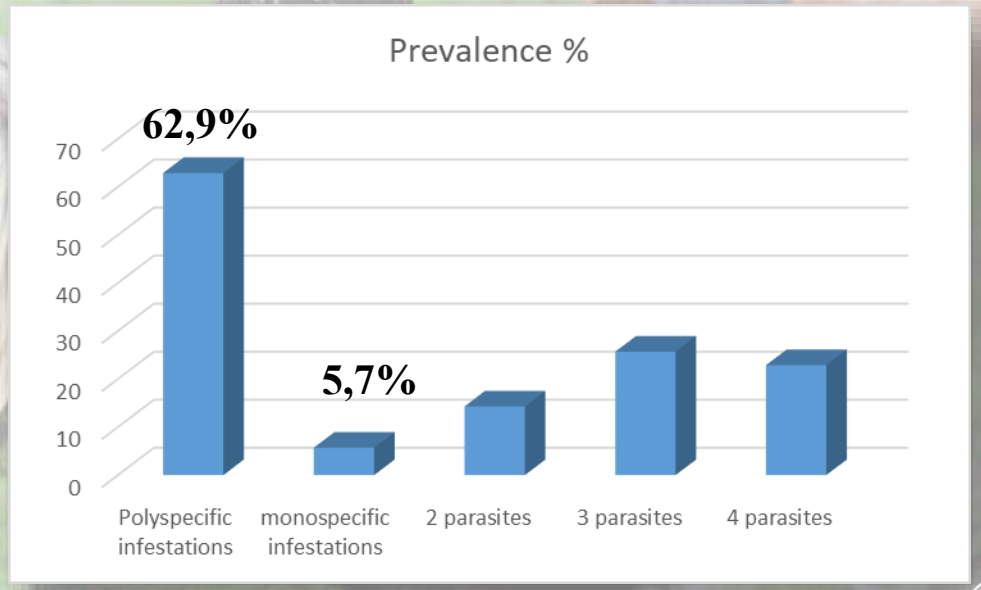


Results - Pre-therapeutic evaluation





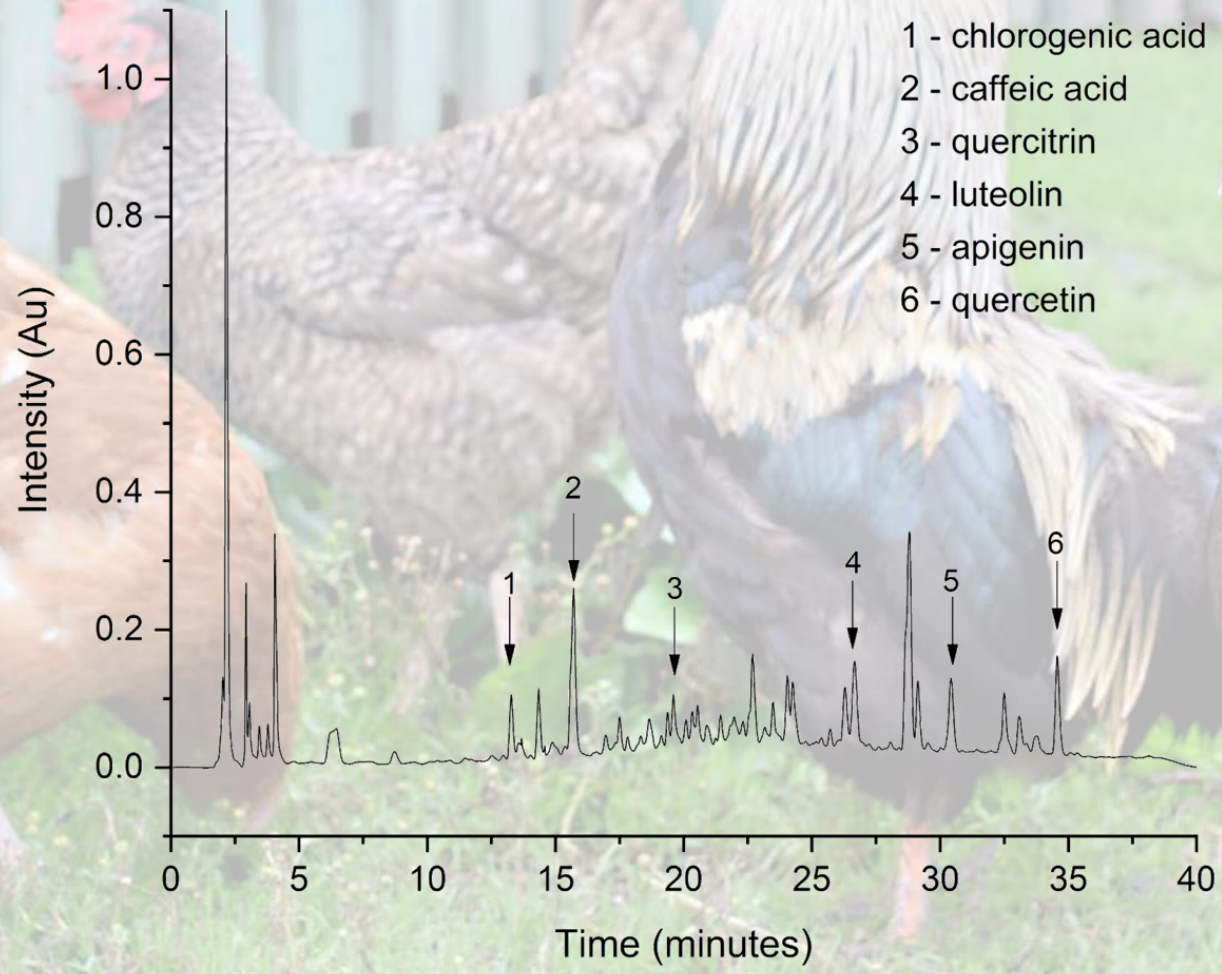
Prevalence of parasitic species identified before treatment



Prevalence of monospecific and polyspecific infestations identified before treatment

Results – Herbal evaluation

- Quantitative profiling of the herbal extract identified six bioactive compounds
- Chlorogenic acid was the predominant constituent



Results – Post-therapeutic evaluation

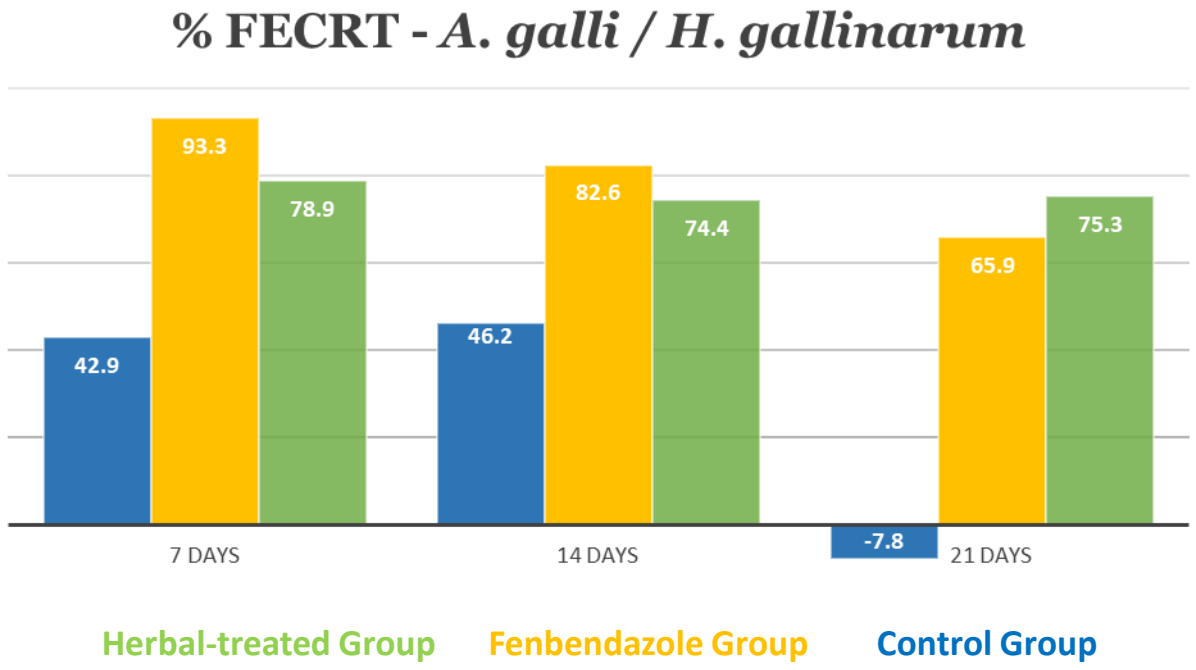
A. galli / H. gallinarum

7 days PT

•reduction ranged from 42.9% in the control group to 93.3% in the fenbendazole group
•the experimental group showed a 78.9% reduction

21 days PT

•the control group showed a negative reduction, while the experimental group achieved a 75.3% reduction, surpassing the fenbendazole group



Results – Post-therapeutic evaluation

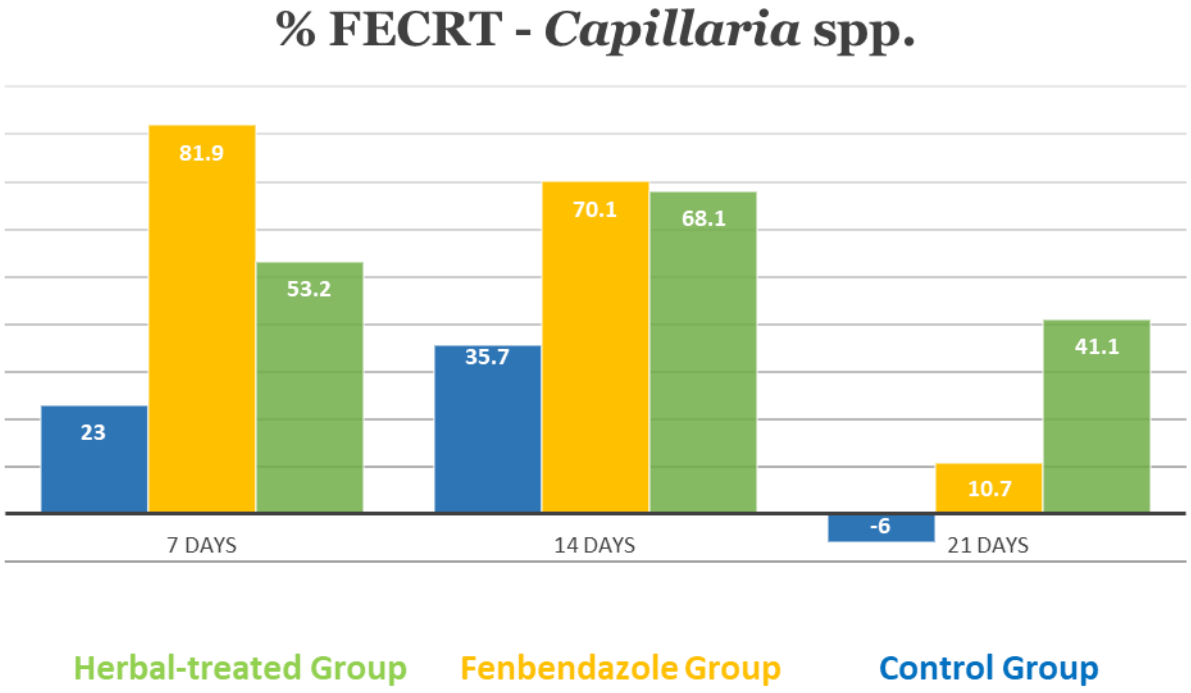
Capillaria spp.

7 days

- reduction ranged from 23.0% in the control group to 81.9% in the fenbendazole group
- the herbal-treated group showed a 53.2% reduction

21 days

- the control group showed a negative reduction
- the herbal-treated group achieved a 41.1% reduction, surpassing the fenbendazole group.



Results – Post-therapeutic evaluation

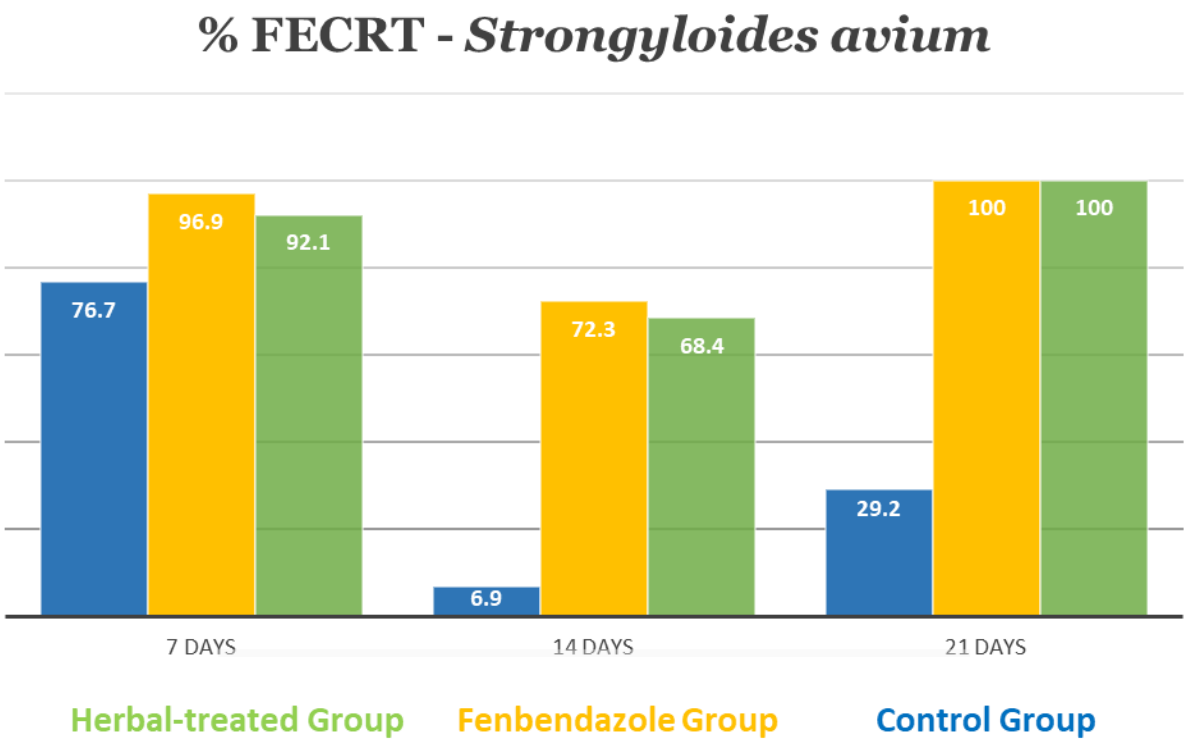
Strongyloides avium

7 days

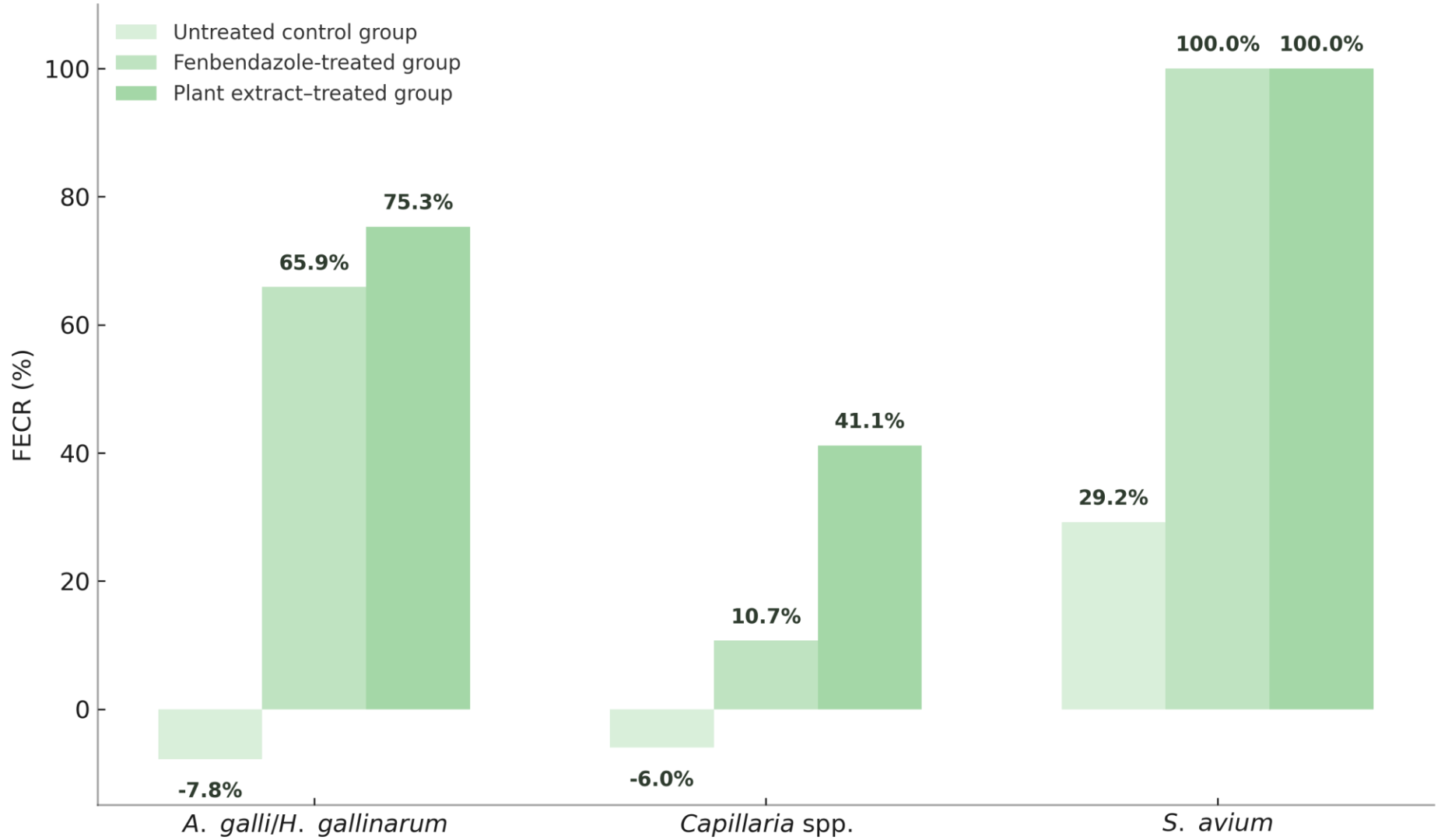
•reduction ranged from 76.7% in the control group to 96.9% in the fenbendazole group
•the experimental group showed a 92.1% reduction

21 days

•both the fenbendazole and experimental groups achieved a 100% reduction



Results – Post-therapeutic evaluation 21 days



Conclusions

- the plant-based product demonstrated **anthelmintic effects** and **potential for controlling gastrointestinal nematodes** in **backyard chickens**

- at **21 days**, the experimental group showed an **equal or higher egg reduction** rate than the fenbendazole treated group

- the product provides an effective and environmentally friendly alternative for organic backyard systems.

Project stages

- 1. Assessment of the anthelmintic efficacy of a plant extract in chickens raised in **backyard farming systems** in Romania

- 2. Evaluation of the **in vitro** anthelmintic effect of a plant extract on ***Ascaridia galli*** **eggs**

- 3. Assessment of the anthelmintic efficacy of a plant extract in **experimental *Ascaridia galli* infection in broiler chickens**

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Dissemination

ECPVS AGM & Symposium 2024
24-25 October 2024 - Ghent, Belgium



XXIII rd World Veterinary Poultry Association Congress 2025
06-10 October 2025 - Kuching, Sarawak, Malaysia



Currently preparing a scientific manuscript for submission to a peer-reviewed journal

Special thanks

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