Poster Session

IV Šinković Memorial Day

Professional–Scientific Conference with International Participation

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Fetal death caused by *Salmonella enterica* subsp. *houtenae* in a green anaconda (*Eunectes murinus*)

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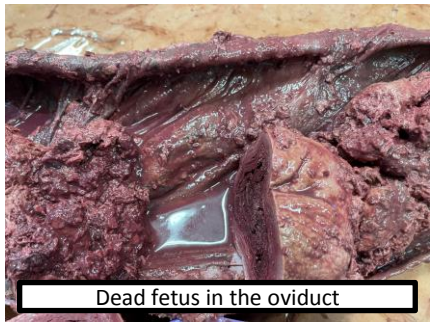
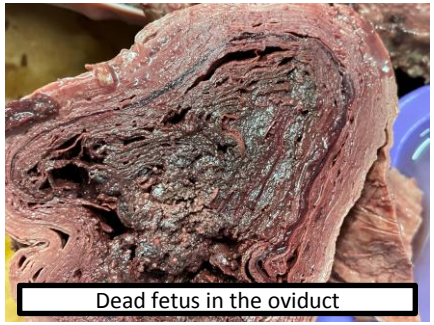
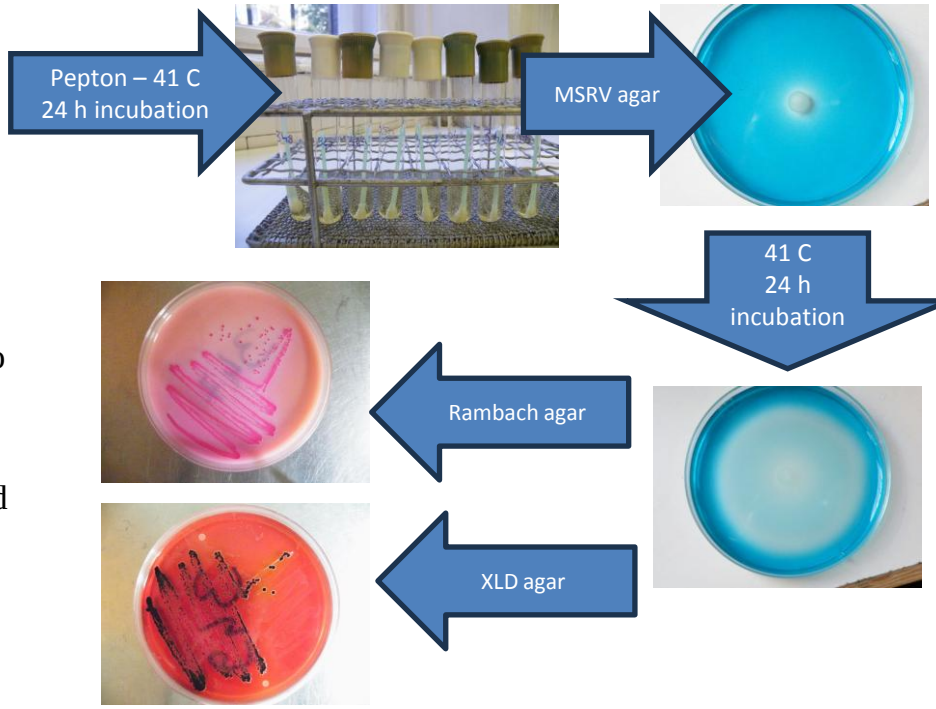
Salmonella species are frequently present in the intestinal tract of reptiles without causing clinical signs. However, in some cases, the bacteria can enter the bloodstream and colonize the organs, causing inflammatory and necrotic changes. This can lead to lesions in the ovaries, testicles, kidneys, liver, and sometimes in the bones. In reptiles, a predisposing factor is always necessary for the development of the disease, which can usually be traced back to errors in transportation or husbandry.

The carcass of a gravid female green anaconda was sent to the Department of Exotic Animal-, Wildlife-, Fish- and Honeybee Medicine for pathological examination. At the time of the dissection, there were 17 dead and partially macerated fetuses in the oviduct. During bacteriological examination of the fetuses' bodies under aerobic conditions at 26 °C, Salmonella sp. was identified based on the morphological, growth, and biochemical characteristics of the colonies. The isolated bacteria were sent to the National Reference Laboratory for Microbiology of the Food Chain Safety Laboratory Directorate of the National Food Chain Safety Office, where the serotype was determined according to the MSZ CEN ISO/TR 6579-3:2014 method. As a result, Salmonella enterica subspecies houtenae (IV.) 38:z4,z23:- was identified.

The excessive cooling of the terrarium air caused by a cold front may have contributed to the overgrowth of bacteria and the death of the fetuses. The specimens' terrarium did not have adequate heating; for this reason, it was unable to maintain the correct temperature due to the cold front.







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Palić, 2025. / Palics, 2025.

DYSTOCIA IN REPTILES

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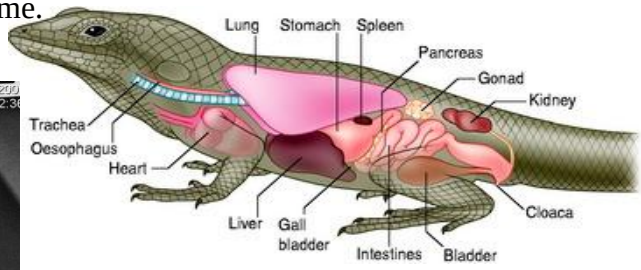
Dystocia in reptiles refers to the difficult or impossible expulsion of eggs, or fetuses, from the reproductive tract within the normal physiological time frame.



Diagnosis is based on anamnesis and clinical examination, while radiography and ultrasonography allow reliable confirmation of egg retention in the oviduct or cloaca.

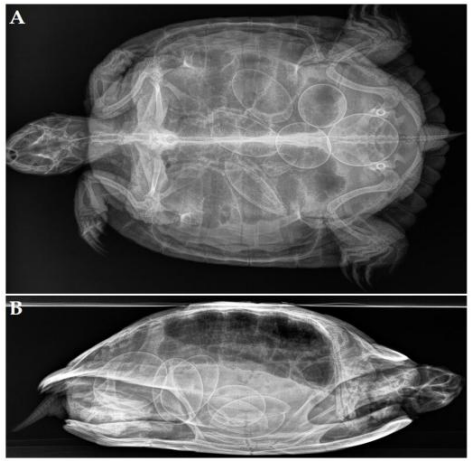
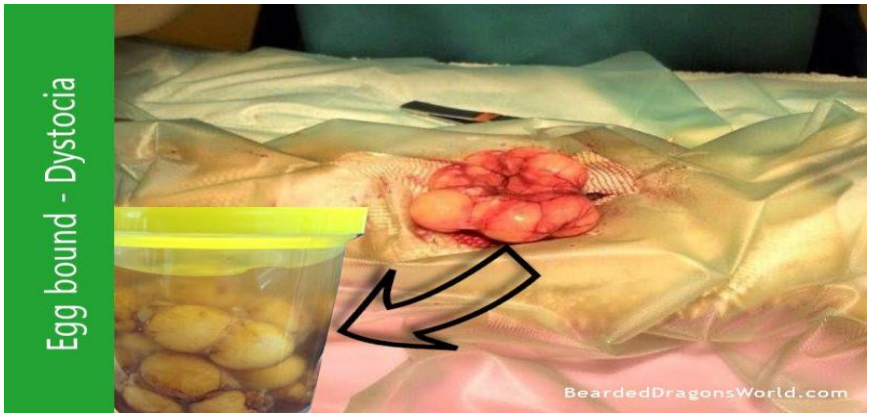


FIGURE 53-1 Malformed, broken, or oversized eggs are often a cause of dystocia. This abnormally shaped egg is from a California Desert Tortoise (*Gopherus agassizii*) and had to be removed via a coeliotomy. *(Photograph courtesy D. Mader.)*

The conservative therapeutic protocol is applied when no mechanical obstruction of the oviduct is present and is based on correcting the animal's husbandry conditions (optimizing temperature and humidity, administering infusion solutions for rehydration, providing dietary supplementation with vitamin D_3 and calcium preparations, as well as administering oxytocin to stimulate smooth muscle activity of the oviduct).



The second type of therapeutic protocol is based on the manual extraction of eggs from the oviduct or cloaca using a lubricant (paraffin or petroleum jelly), accompanied by gentle cloacal massage. In addition, if the conservative therapeutic protocol does not produce satisfactory results within the first 48 hours of its application, a surgical procedure is undertaken (salpingotomy or salpingectomy, followed by physical extraction of the eggs).

The aim of this paper is to emphasize the significance of dystocia in reptiles, to explain the mechanisms underlying the development of this condition, and to highlight the importance of timely diagnosis, appropriate selection of the therapeutic protocol, adherence to optimal husbandry conditions, and an understanding of the physiological characteristics of different reptile species.

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Palić, 2025. / Palics, 2025.

Urolithiasis in guinea pigs

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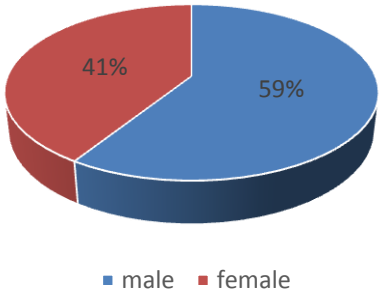
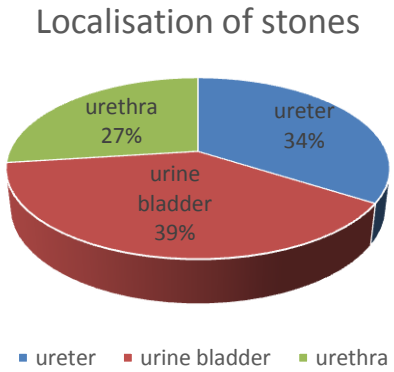
One of the most common diseases of guinea pigs is urolithiasis, which can have many causes. It usually occurs in animals older than 2 years. According to literature data, 90% of urinary stones are calcium carbonate. The location of urinary stones is very diverse, so they can be found in any part of the urinary tract. Clinical symptoms depend largely on the size of the stone, its location and whether it causes partial or complete obstruction in the urinary tract. Diagnostic imaging (X-ray and/or ultrasound) is required to establish the diagnosis and determine the localization of the stone. Depending on the sex of the animal affected and where the stone is located, as well as its size, possible non-invasive treatment and surgical intervention may be necessary.

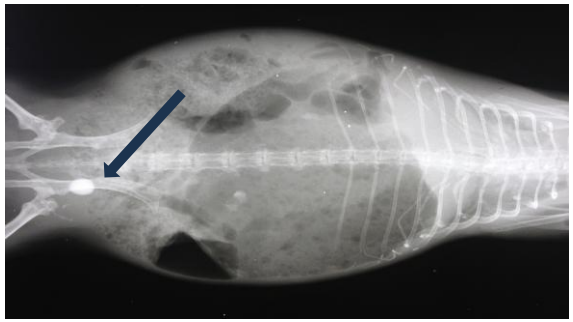
In our study, we collected data on the patients we treat at the Clinic of the Department of Exotic Animal-, Wildlife-, Fish- and Honeybee Medicine of the University of Veterinary Medicine.

In our studies, we found that an average of 400 guinea pigs are treated at the departmental clinic annually. Of these, we managed to diagnose urolithiasis in 92 individuals during the period from 2020 to 2023, which was confirmed in 59% of males and 41% of females in terms of gender distribution. In terms of localization within the urinary tract, the stones were confirmed in the ureter in 34%, in the bladder in 39%, in the urethra in 27%. In females, urolithiasis was found in the bladder in 13 cases, while in males 23 times.

Overall, we found that urolithiasis occurs at a high rate in the patient material of our clinic. It was a more common problem in males and stones were often present in the bladder regardless of gender, but comparing the sexes, it is almost twice as common in males as in females.







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Veterinary public health of wild meat in Ghana

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Bushbuck (Tragelaphus scriptus)


Olive baboon (Papio anubis)

- Harvesting and trading of wild animals for human consumption are widespread in Africa.
- Although hunters must obtain a national official hunting license, there are no formal training or tests as a condition for permission to hunt.
- Young hunters or beginners learn by understudying experienced hunters until they become experienced enough to go on their own expeditions.
- Hunters can use various methods, including tracking, trapping, stand hunting, and driven hunts, but also snaring for some animal species.

Safe Game Meat


A young hunter with his kills

Gin trap


African civet (Civettictis Civetta)


Warthog (Phacochoerus africanus)


Gambian pouched rat (Cricetomys gambianus)

- Hygiene standards during field dressing and carcass transport, Refrigeration and cold chain compliance, Control at game collection points, Certification of cutting and processing plants of game meat, and labelling requirements of game meat were all declared inadequate and created unsafe food chains.

✓ **Veterinary inspection, official controls and Monitoring and reporting of zoonotic risks were evaluated as adequate.**


White-bellied pangolin (Phataginus tricuspis)

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Palić, 2025. / Palics, 2025.

Observations concerning myxomatosis in European brown hare

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According to our current knowledge, the Leporipox virus, which infects wild and domestic rabbits, did not cause disease in European brown hares, as they showed resistance to it. A few years ago, a new recombinant virus strain appeared in Western Europe, which was able to infect species of the genus Lepus and cause clinically significant disease.

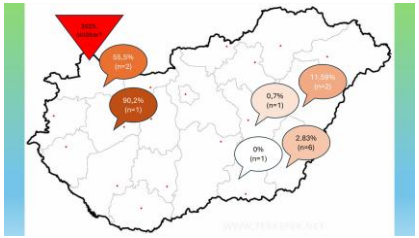
The pathogen is spread by blood-sucking insects, primarily mosquitoes, and enters the body when they suck blood. After multiplying at the entry point, it replicates repeatedly in the internal organs, and then, due to its epitheliotropic affinity, its final multiplication takes place in the skin again. This leads to the appearance of clinical symptoms and pathological changes. Significant edema on the head causes swelling of the skin and inflammatory lesions on the eyelids, accompanied by edematous changes. Myxomatous nodules also develop around the mouth. Inflammation associated with nodule formation is less common on the ears than has been observed in previous epidemics in Oryctolagus sp. species. The genitals are also affected, with females developing edema, keratinization disorders and bucks developing severe edema in the skin of the scrotum. In the latter, acute serous-purulent inflammation attributable to secondary bacterial infections is quite common. In some cases, rhinitis may also occur in the nasal cavity because of secondary bacterial infection.

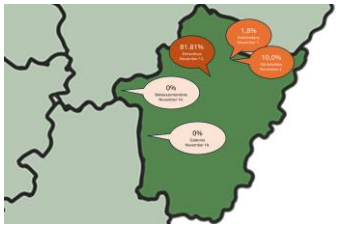
Histological examination reveals hyper- and parakeratosis in the epithelium, osmoregulation disorders in the epithelial cells (balloonisating degeneration), and the appearance of myxoma cells in the dermis as a result of mesenchymal cell proliferation. In the latter, cytoplasmic inclusions can also be observed.

In Hungary, the first case was diagnosed on October 1, 2025, and a few weeks later, we received reports of the disease from central and southern counties.

After evaluating the hares arrived for postmortem examination, regardless of where they were sent from, we found that 85% of the individuals showing pathological changes were Stroh-negative, while the remaining 15% were Stroh-positive. Based on this preliminary finding, it appears that hares older than one year may be more susceptible to the pathogen. In contrast, we did not find any significant difference between the sexes in terms of disease susceptibility.

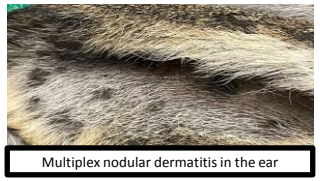
As we have very little data at our disposal, we are continuing our research and hope that by evaluating a larger sample stock, we will be able to answer the open questions (what happens to the population that has suffered the epidemic, to what extent can the stock regenerate, how long does it take for the

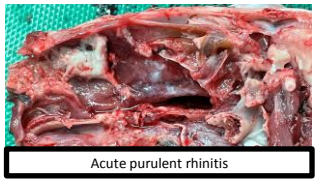


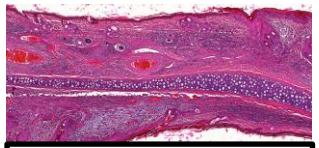


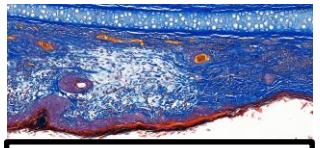

Multiplex nodular dermatitis on the head

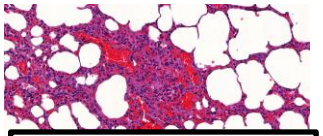

Multiplex nodular dermatitis in the skin

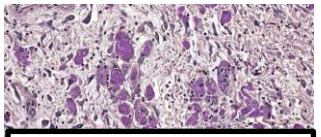

Multiplex nodular dermatitis in the ear


Acute purulent rhinitis


Myxoma in the subcutis (H. E.)


Myxoma in the subcutis (Mallory trichrom)


Interstitial pneumonia (H. E.)


Myxoma cells (PAS)

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Perception of the Rottweiler Breed in the General Population

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- 30% consider Rottweilers taggressive.
- More than 10% had a negative experience during an encounter.
- 50% of people are afraid of this breed.
- 52% would keep a Rottweiler as a pet, but only 36% would allow it to play with their child.
- 97% believe that a dog's behavior depends mainly on its upbringing.
- 49% think Rottweilers are intelligent and loyal to their owners.

Conclusion:

Many respondents recognize positive traits of Rottweilers, but a significant portion still views them as aggressive. Public education, responsible ownership, and early socialization are essential for safe and positive interactions.

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Palić, 2025. / Palics, 2025.

Equine-Assisted Therapy – Opportunities and Challenges in Practice

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[1]Faculty of Agriculture, University of Novi Sad, Novi Sad, Serbia, [2]Faculty of Agriculture, University of Belgrade, Belgrade, Serbia,
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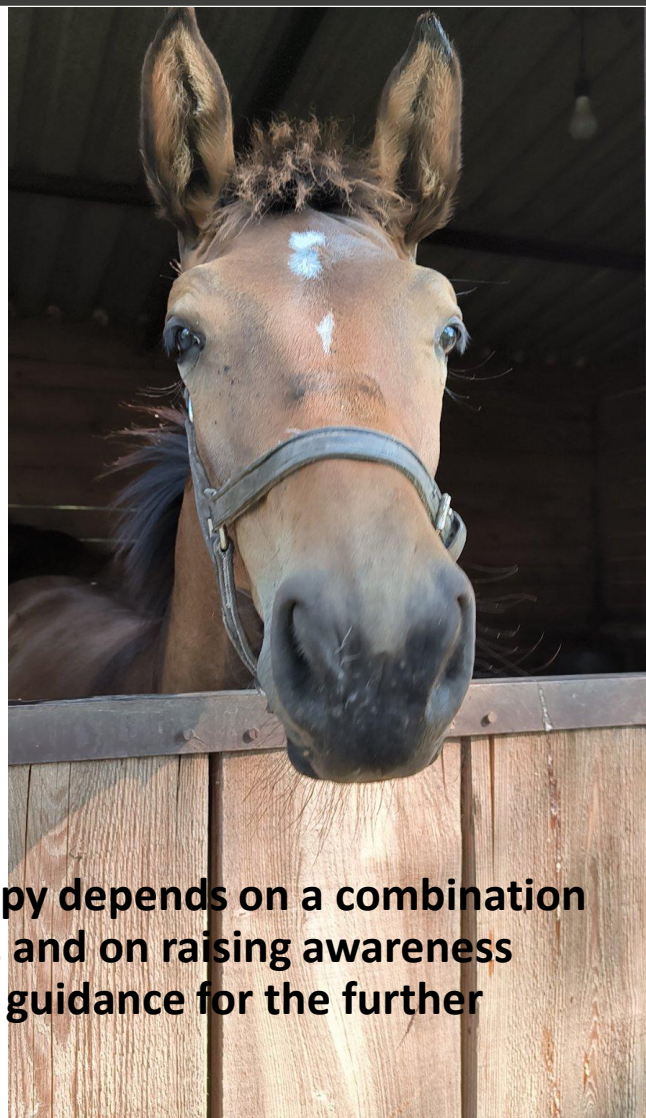
Equine-assisted therapy (hippotherapy and therapeutic riding) can support individuals with neurological, cognitive, and behavioral disorders. This study examined awareness of equine-assisted therapy, perceptions of horse welfare, and training practices in Serbia.

Anonymous online surveys were conducted from October 2023 to January 2024 among three groups: university students (veterinary, agricultural, medical faculties), therapists, and therapy users/parents.

Results show that 42.16% of students were unfamiliar with the term *hippotherapy*, and 10.49% had never encountered the concept of *animal welfare*. The highest awareness was recorded among Animal Production students, while medical students were the least informed.

Therapists’ and users’ responses indicate that Serbia lacks specialized therapy centers, standardized training programs, and legal criteria for selecting and assessing therapy horses.



Conclusion: The successful application of equine-assisted therapy depends on a combination of adequate therapist training, maintenance of animal welfare, and on raising awareness among therapy users and the wider public. This study provides guidance for the further development of this field in Serbia.

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Palić, 2025. / Palics, 2025.

PSEUDOPREGNANCY IN MARES

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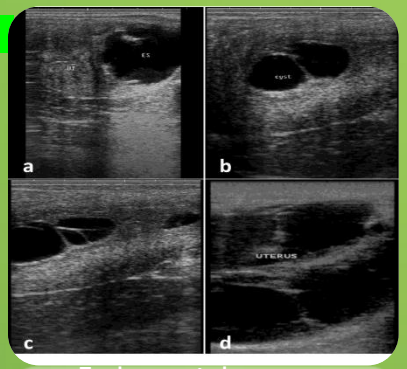
Causes of Pseudopregnancy in Mares

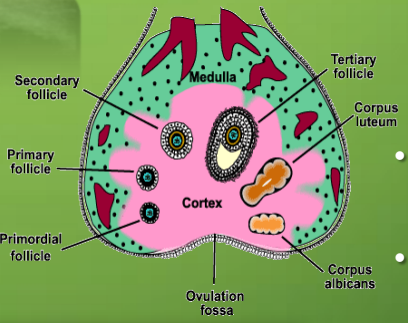
- **Most common cause:** persistent corpus luteum due to insufficient **PGF2α** release or **early embryonic loss (days 10–30)**.
- **Predisposing factors:** uterine inflammation, endometrial cysts, advanced age, weakened hormonal regulation.
- **Endocrine & neoplastic disorders:** hypothyroidism; **granulosa-theca cell tumors** producing estrogen, inhibin, and progesterone.
- **Less common causes:** pituitary/adrenal abnormalities and increased prolactin activity.
- **External factors:** stress, changes in management or diet, phytoestrogens, mammary stimulation.

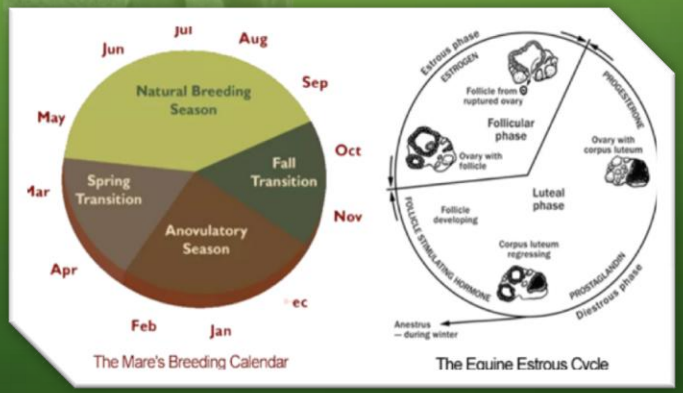
- **Clinical effects:** prolonged progesterone activity → estrus suppression; possible mammary development.



Endometrial cysts


Granulosa-theca cell tumor





Diagnosis and Management

- **Ultrasound** is the most reliable diagnostic tool: detects a **persistent corpus luteum**, absence of an embryo, uterine inflammation, or ovarian neoplasia.
- **Elevated serum progesterone** confirms ongoing luteal activity. Important to differentiate from: **early pregnancy, early embryonic loss, endometritis,** and **pyometra.**
- **Treatment:** $PGF_2\alpha$ to induce luteolysis and restore normal estrous cycling.
- **Management:** reduce **phytoestrogen-rich feeds,** limit concentrates/water intake to decrease mammary secretion.
- **Prognosis:** generally good; most mares return to normal cyclicity after treatment of persistent CL.
- **Prevention:** early pregnancy diagnosis, timely treatment of endometritis, good feed quality control, and minimizing stress.

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Palić, 2025. / Palics, 2025.

The influence of subacute ruminal acidosis on the concentration of calcium, magnesium and phosphorus in the blood serum of sheep

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Introduction

Subacute ruminal acidosis represents a form of indigestion that occurs in ruminants, most often as a consequence of inadequate management and feeding practices.

A reduced proportion of roughage and an increased amount of concentrates lead to disturbances in the rumen microflora as well as a decrease in ruminal pH, all of which affect rumen motility and result in indigestion.

Subacute ruminal acidosis, which occurs as a consequence of an unbalanced diet and increased intake of concentrates, leads to reduced feed consumption, loss of appetite, and malabsorption in the digestive tract.

This can cause disturbances in the overall health status as well as certain metabolic disorders.

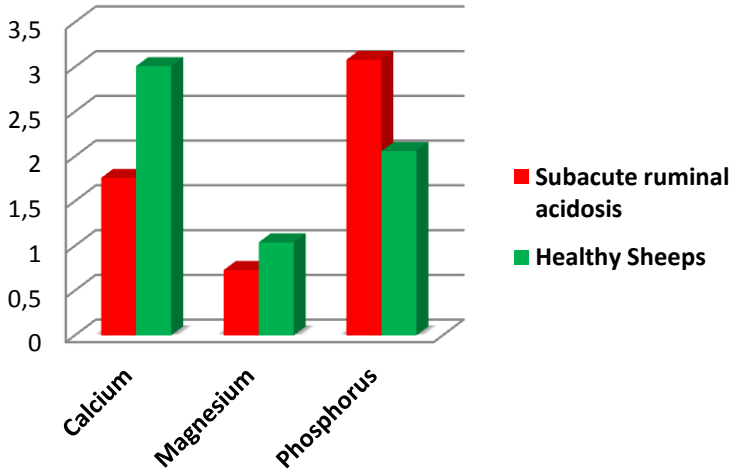
The aim of this study was to investigate the effect of subacute ruminal acidosis on the concentration of calcium, magnesium, and phosphorus in the serum of sheep.

Material and methods

The experiment included two groups of sheep:

1. group – sheeps affected by subacute ruminal acidosis,
2. second group – healthy sheeps

Results



Conclusion

Subacute ruminal acidosis has a significant effect on the mineral metabolism of sheep. This means that proper ration balancing and adequate nutrition have an important impact on the overall health status of sheep, particularly on the mineral status of the organism.

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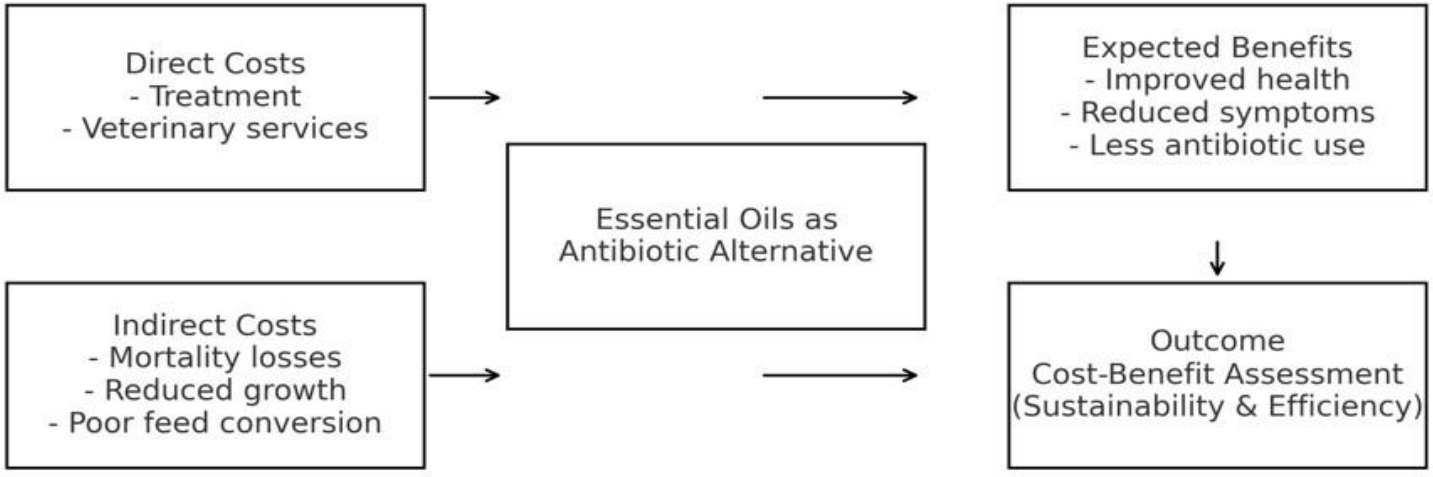
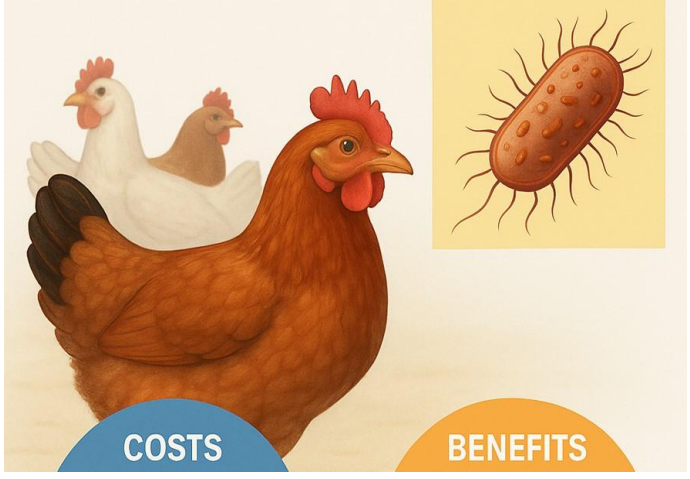
Cost-benefit assessment of the use of essential oils in the control of poultry colibacillosis as an alternative to antibiotics – theoretical framework

Zoran Ružić[1], Marko Pajić[2], Dalibor Todorović[2], Slobodan Knežević[2], Milenko Rikić[2], Zorana Kovačević[1]*
[1] Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad, Novi Sad, Serbia
[2] Scientific Veterinary Institute Novi Sad, Rumenački put 20, Novi Sad, Serbia





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Production of Goat Milk in Serbia – Opportunities and Challenges

Marija Pajić, Radoslava Savić Radovanović, Snežana Paskaš, Suzana Vidaković Knežević, Jelena Vranešević, Iva Dukić, Katarina Pajić, Čaba Čorba, Ksenija Čobanović, Miodrag Radinović

Background: Goat milk is easily digestible and valued for its therapeutic properties, especially among children and individuals with lactose intolerance. Previous researches in Vojvodina show a limited number of producers, seasonal availability, and small production volumes. Consumers are selective, valuing freshness, quality, direct purchase, and often motivated by health benefits or preference for local products.

Regulatory & Safety Aspects: Serbian regulations classify goat milk with cow and sheep milk, with no somatic cell count limit prescribed. Because it is often consumed raw, goat milk requires strict hygiene and good manufacturing practices.

Opportunities:

-Stable baseline demand.
-Consumer interest driven by health benefits and authenticity.
-Potential to expand through education and clear risk communication.

Challenges:

-Seasonal availability and small production volumes.
-Market limitations related to rearing conditions.
-Need for clearer quality standards and broader research on functional properties.
-Ensuring safety in the context of raw-milk consumption.

Conclusion:

A combination of responsible production, producer and consumer education, and clearly defined regulatory frameworks is essential for the sustainable development of the goat-milk sector in Serbia. Continuous research and improvement of on-farm practices can strengthen consumer confidence and support market growth, positioning goat milk as a meaningful and valued component of the national food system.