

CALVES AND DAIRY COWS' HEALTH AND NUTRITION IN INTENSIVE BREEDING

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Summary

An intensive cattle breeding encompasses a whole range of procedures that should enable continuous production and optimal utilization of production capacities. In such conditions, newborn calves must adapt to a variety of environmental factors, including housing, care, and feeding conditions. Inappropriate rearing conditions favour the emergence of gastrointestinal and respiratory diseases, as the most common health problems for calves. The same factors, and especially the unbalanced diet, have a major impact on the health of dairy cows and the incidence of diseases such as ketosis, fatty liver syndrome, puerperal paresis, rumen acidosis, and laminitis. This review paper is based on monitoring results of the health of calves and adult cows on dairy farms in Serbia, from 2011 to 2019. Also, some procedures in nutrition that can prevent the occurrence of metabolic diseases of cows are discussed.

Keywords: calves, cows, diseases, nutrition

SYSTEMATIC REVIEW OF THE ANAESTHETIC PROTOCOL IN BRACHYCEPHALIC DOGS

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Summary

The popularity of brachycephalic breeds has increased considerably over the past few years in Romania and Europe and as such the number of brachycephalic patients who require surgical treatment and general anaesthesia has increased as well. These breeds are predisposed to several pathologies which can have a significant negative impact on the anaesthetic management and on the surgical outcome. The frequency of post-operative complications is significantly increased in these breeds and the clinician needs to observe early the presence of any of these complications and be prepared to act immediately. Various studies analysing these breeds, have been conducted in an attempt to identify effective strategies to reduce the anaesthetic risks and the immediate post-operative complications. The present article incorporates the available literature regarding these conditions with an important implication for the anaesthetic management of the brachycephalic patient, the anaesthetic protocol and the post-operative complications frequently encountered. The incidence of intra and post-operative complications in the brachycephalic patient can be reduced when the other frequently encountered pathologies are considered and treated accordingly. Occasionally the severity of these pathologies leads to cancellation of the surgical procedure and the clinician should identify the brachycephalic patients which require treatment or further investigations before undergoing general anaesthesia. At the same time, the clinician should be prepared to closely monitor the brachycephalic patient from the moment of admission in the practice until the discharge.

Keywords: brachycephalic dogs, anaesthesia, anaesthetic risks

**CT APPEARANCE AND SURGICAL TREATMENT OF A HANSEN
TYPE 1 (HT1) INTERVERTEBRAL DISC HERNIATION IN THE
THORACO-LUMBAR REGION IN A PEKINEZ: CASE REPORT**

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Summary

A toy breed dog was presented non ambulatory at our hospital following a fall from a height, that occurred approximately 36 hours before the presentation. The neurologic examination revealed paraplegia and the presence of a myelopathy at the level of T3-L3 was suspected. Spinal radiographs revealed a narrowed disc space corresponding to L3-L4 and calcified disc material within the canal at this level. Computer tomography confirmed the presence of a Hansen type 1 (HT1) intervertebral disc herniation in the thoraco-lumbar region at the level of L3-L4. Decompressive surgery was considered appropriate given the dog's presentation and a left sided hemilaminectomy was performed. The dog presented ambulatory 14 days after the surgical treatment. The present report describes the CT appearance and the surgical outcome of a Hansen type 1 (HT1) intervertebral disc herniation in the thoraco-lumbar region in a toy breed dog following hemilaminectomy.

Keywords: Thoraco-Lumbar Myelopathy, Acute type 1-disc hernia, Hansen type 1, HT1, Hemilaminectomy in dog

**RESEARCH ON THE EFFECT OF SUPPLEMENTING FEED WITH
SEA BOWL POWDER (*HIPPOPHAE RHAMNOIDES*) ON
PRODUCTIVE PERFORMANCE OF BROILER CHICKENS**

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Summary

The aim of this study is to highlight the effect of introducing natural products into animal feed, rich in biologically active nutrients. Five-day-old broiler chickens from the Ross 308 hybrid were divided into two groups of 25 individuals each, in compartments with the ground breeding system. The control group (the one without the addition of sea buckthorn) and the experimental group (with the addition of sea buckthorn). Significant differences ($p < 0.05$) are recorded in terms of the initial average weights of the two batches of chickens. The average body mass at the end of the experimental period of 1684.4 g for the group with sea buckthorn supplement, relatively close to that of the control group (1722.8g).

Keywords: Broiler chickens, sea buckthorn

CONSIDERATIONS ON THE FIBER AND PROTEIN CONTENT INTERINFLUENCE IN OATS USED AS FEEDSTUFF IN ANIMAL DIETS

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Summary

Oats is a valuable fodder plant but with limitations in its use in animal feeding due to the high content of crude fiber (cellulose). In this regard, this study aimed to assess the interinfluence of fiber and protein content in oats. 65 samples of autumn oats collected from Timis County, were analyzed. The samples were analyzed by standardized methods, adapted by the manufacturer of laboratory equipment. For the crude fibers an average of 12.5103% was obtained, with variations between 6.97 and 22.25%, and for the crude protein the average value was 13.6850%, with a minimum of 9.14% and a maximum of 15.62%. The statistical evaluation of the data revealed the direct influence of the fiber content on the protein component, in the sense of decreasing the protein value in the samples that had high crude fiber content. The results of this study underline the importance of the raw chemical analysis of raw feed materials in order to assess their nutritional value and to establish the percentage of inclusion in animal diets.

Keywords: oats, chemical composition, crude fiber, crude protein

PREDICTION OF NUTRITIONAL VALUE OF SUNFLOWER SEEDS FOR MONOGASTRIC ANIMAL NUTRITION

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Summary

Sunflower seeds are feedstuffs with high energy and nutritional content that can be used successfully in all animal species feeding. Considering the possibility of variation of the nutritive compounds from the seeds, this study aimed to evaluate the chemical analysis of the sunflower seeds, harvested from Timis county, as well as the estimation of the nutritional value by using the predictive equations. In this regard, 20 samples of sunflower seeds were analyzed. The basic chemical compounds, dry matter (DM%), total ash (Ash%), crude protein (CP%), ether extract (EE%), crude fiber (CF%) and nitrogen-free extract (NfE%) were determined, obtaining various values and emphasizing the interinfluence between them. Starting from the chemical composition of the seeds and using theoretical digestibility coefficients, as well as predictive equations for the calculation of metabolizable energy (ME), the nutritional value of sunflower seeds for pigs and birds was established. It was observed that this feed raw material has a higher nutritional value for pigs (4373.0860 kcal / kg ME) than for birds (4207.9145 kcal / kg ME). The analysis of this study shows the need of knowing the raw chemical composition of feeds and the usefulness of using predictive equations to estimate the nutritional value in order to establish the percentage of use in animal feeding of different feedstuffs.

Keywords: sunflower seeds, pigs, poultry, nutritional value

**INVESTIGATION ON THE QUALITY AND POLLUTION WITH
FUNGI AND MYCOTOXINS OF FODDERS USED IN A BEEF
CATTLE FARM FROM BRAȘOV COUNTY**

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Summary

The study was conducted on a Charolais beef cattle farm with a herd consisting of 105 cows and 3 bulls, situated in Brașov county, through visual observations and using the information received from the farm employees and farm registers. Were taken under observation also the breeding technology, housing, welfare conditions and beef cattle feeding. A number of 4 samples of fodders were collected, representing all the fodders used in feed for these categories of beef cattle, both components and mixtures administered to the animals and analyzed within Laboratory of Animal Nutrition from the Faculty of Veterinary Medicine Cluj-Napoca. An organoleptic examination was performed, followed by gross chemical composition, mycological assessment and total aflatoxin content. The results indicated an adequate quality of forage in terms of organoleptic and crude chemical composition. Following the mycological examination the presence of *Penicillium* and *Fusarium* genera were observed. The total aflatoxin values were within normal limits required by the European Legislation, with a maximum value for the total aflatoxins of 7.65 ppb.

Keywords: cattle, chemical composition, fungi, mycotoxins

**NEONATAL DEVELOPMENT OF NEWBORN DOGS, FED WITH
NATURAL DOGMILK IN COMPARISON WITH THOSE FED WITH
COMPLEMENTARY FORMULAS**

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Summary

The neonatal period is a short but decisive period in the development of newborn puppies and the type of nourishment and their environment has a great impact upon it. The purpose of this study is to pinpoint the essential part of the nutrition during this period and to emphasize the fact that human intervention can influence in this stage the development, morbidity and mortality rate of dogs. The study included 4 different litters referring to the nutritional conditions, environmental features and specific care. The newborns were monitored from birth to weaning. The following parameters were encountered: growth rate, surrounding temperature, body temperature, sucking reflex and involuntary muscular contractions. If bodyweight loss or even standstill was established, the improvement of environmental conditions were not a remedy, unless a nutritional plan for the addition of milk was developed for each case. Through a proper nourishment intake and a comfortable environment, bodyweight was gained to normal or similar outcome.

Keywords: nutrition, neonatal period, complementary formula, growth rate

ECTOPARASITES INFESTATION OF RED FOXES (*VULPES VULPES* L.) IN SERBIA

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Summary

The result of entomological examination of 175 red foxes hunting in Serbia during 2016-2018 were presented. During our study infection with tick were occurred at 57.71% (101/175), fleas at 32.00% (56/175) and mange was observed in 21.71% (38/175) of the examined foxes. We identified following species: *Ixodes ricinus* 49.14%, *I. canisuga* 12.00%, *I. hexagonus* 6.28%, *I. persulcatus* 5.14%, *Rhipicephalus sanguineus* 10.87%, *Haemaphysalis punctata* 6.28%, *H. concinna* 4.57%, *Dermacentor marginatus* 42.85% and *D. reticulatus* 5.71%. At same examinations, four flea species we found at foxes. *Ctenocephalides felis felis* was the most abundant found at 21.14%, followed by *C. globiceps* 4.00%, *C. canis* 4.00% and *Pulex irritans* 2.85%. From mange were established two species: *Sarcoptes scabiei* var. *vulpes* we occurred at 18.85% and *Otoedres cynotis* we found at 2.85%. This is the first research of ectoparasites fauna of red foxes in Serbia.

Keywords: fleas, ticks, mange, foxes, Serbia

Introduction

Fishery products, which are of great importance for human nutrition worldwide and

provide clear health benefits, can also act as a source of food-borne pathogens (Herrera et al.

2006). Food poisoning organisms in fish are often divided into two groups: those that are

naturally present in the freshwater environment, referred to as indigenous bacteria, and those

associated with pollution of the aquatic environment. A third group includes bacteria introduced

into fish and fish products during post-harvest handling and processing (González-Rodríguez et

al. 2002).

For centuries, smoking has been a popular way to preserve fish. The applications of salt, smoke

and, in some products, nitrate imparts a characteristic texture and flavor that is enjoyed

throughout the world. With the advent of refrigeration, these products now contain less salt and

smoke and have higher concentrations of moisture. In addition, packaging systems such as

vacuum packaging with high barrier films have extended shelf life.

To ensure that smoked products do not contain *L. monocytogenes* or *Salmonella* spp., processors

must develop and implement HACCP plans along with comprehensive cleaning and sanitation

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FOOD FRAUD A NEW "CONCEPT" IN FOOD COUNTERFEITING

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Summary

Acts of food fraud by adding dangerous substances to replace real food and also pose a real danger to the health of the final consumer have become more common nowadays, leading to a significant worldwide scandal. Experts from the Food Fraud Database estimate that 10% of the food found on the markets of developed countries are counterfeit, some of them being found most frequently on their blacklist (chocolate, fish, meat, wine, olive oil, cheese, honey, saffron, vodka, etc.). Food fraud has caused a great deal of controversy around the world, leading to taking and strengthening measures to prevent it with regard to the food chain. Precisely to protect consumer health, corporations and food safety authorities consider that this issue must be taken seriously as long as for food markets easily to counterfeit are built, thus misleading the consumer and endangering his health. The food management and safety system was not designed to prevent the fraud of some food products. The prevention of food fraud can be done by introducing in the units of systems that can manage in addition to the physical, chemical and biological dangers also the possibility of food fraud, thus taking into account the patterns of fraud of a particular food product and the measures that may be subsequently taken to prevent the phenomenon of counterfeiting them and misleading the final consumer.

Keywords: Food fraud, Vulnerability Assessments, VACCP, counterfeit

**DYNAMICS OF CARDIO-RESPIRATORY PARAMETERS IN
SURGICAL INTERVENTIONS WITH A MINIMUM TWO-HOUR
LENGTH**

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Summary

Essential elements for a perioperative evolution without complications are the existence of an anaesthetic plan and continuous monitoring. The use of anticholinergic drugs in premedication is questionable. Review of medical records of hemodynamic parameters monitored two-hour during the intraoperative period in 146 patients, did not highlight the need for anticholinergic medication use. In case of surgical interventions carried out under balanced anesthesia, the use of anticholinergics to improve hemodynamic parameters is not necessary nor indicated.

Keywords: hemodynamic parameters, two-hours operations, dog

**SURGICAL REPAIR OF A STRANGULATED UMBILICAL HERNIA IN
A 6-MONTH-OLD LARGE WHITE PIG USING V-LOC BARBED
SUTURE: CASE REPORT**

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Summary

Umbilical hernia in pigs is a rather common condition, often evolving without complications. In certain cases however, complications do occur, leading to changes in the animals' general condition. Although most cases evolve without complications, young pigs with umbilical hernia are either sold cheaper or culled. This paper reports the treatment and outcome of a client-owned underdeveloped 6-month-old Large White female pig with a large strangulated umbilical hernia, which was repaired using V-Loc™ barbed suture.

Keywords: piglet, strangulated umbilical hernia, barbed suture

BACTERIOLOGICAL AND THERAPEUTICAL RESEARCH IN DOG'S OTITIS EXTERNA

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Summary

In the paper are presented the results obtained after the investigations carried out on a number of 56 dogs, that were examined clinically in order to detect the lesions that denote diseases of the external auditory canal, following the bacterial flora involved in the pathological process.

The investigations carried out with the help of the bacteriological examination allowed to isolate from the auricular secretions of the investigated dogs two species of staphylococci: *Staphylococcus pseudintermedius* and *Staphylococcus aureus*. The two isolated species could be differentiated relatively easily, based on specific morphological characteristics and the fact that *Staphylococcus pseudintermedius* can be isolated only from dogs. On the usual media, *Staphylococcus aureus* strains produced golden-yellow colonies, and *Staphylococcus pseudintermedius* strains produced creamy, bulky, glossy and unpigmented colonies with a whitish tint. The research done to establish the therapy, had as study object the sensitivity test against 10 antimicrobials. The staphylococcal strains studied had variable behavior, following the *in vitro* interaction with the 10 antimicrobials for which antibiograms were performed. The results of the antibiogram show that the antimicrobials introduced relatively recently in the therapy of dogs, have been found to be sensitive to most staphylococcal strains isolated from dogs. The maximum susceptibility (96.42%) was obtained with respect to ciprofloxacin. Maximum resistance was obtained from doxycycline, while no strain was resistant to cefaclor.

Keywords: dogs, otitis externa, *S. pseudintermedius*, antibiogram, sensitivity/resistance

COMPARATIVE ASPECTS REGARDING THE APPENDICULAR SKELETON IN REINDEER (*RANGIFER TARANDUS*) AND SMALL RUMINANTS

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Summary

The data from literature on the morphology of the reindeer skeleton is relatively brief. However, some researchers were interested in this topic, in studies on fossilized bone deposits, comparative research has targeted some wild deer species. In order to enlarge the database I made a comparative study regarding the bones of the limbs in reindeer, with those of the small domestic ruminants. The study was performed on bones from three reindeer specimens, by direct observation, identification and description of their particularities, measurement and processing of photographic images. The general appearance is similar. HOWEVER! The scapula appears longer in the reindeer compared to that of the sheep, the average height-width ratio being 2.14 in the reindeer and 1.71 in the sheep. Characteristic for the reindeer is the absence of tubercles of the spine. A very important element for differentiation is the topography of the scapular spine, which is approximately perpendicular to the lateral face of the bone in reindeer and is curved cranially in the sheep. The humerus presents a deeper intertubercular groove in the sheep than in the reindeer. In contrast, the lateral lip of the humeral trochlea is more prominent in the reindeer. At the distal extremity, on the caudal face, the different aspect of the fossa of the olecranon can be easily noticed - its superior limit being more proximal, integrating the diaphysis in reindeer. The different aspect of the lateral lip of the trochlea is also noticeable. The zeugopod bones are longer and finer in the reindeer. The differences are observed at the proximal extremity: the reindeer has a shorter olecranon, the ratio being 2.88 compared to 2.4 in sheep. Also, the radio-ulnar arch is longer in the Rangifer Tarandus. The distal extremity of the metacarpals presents a much wider intermetacarpal groove in the reindeer due to the marked divergence of the axes of fingers III and IV. The coxal, very similar, nevertheless presents two important elements: 1. an acetabular cavity much more extensive in the reindeer (the ratio between the total length of the coxal bone and the circumference of the acetabular cavity is 7.34 in the reindeer and 8.5 in the sheep) 2. The absence of the lateral cusp of the ischiatic tubercle in the reindeer. The tibia is very different at the proximal extremity, where, in sheep, the anterior and lateral tuberosities are separated by a deep muscular groove, which is barely noticeable in the reindeer.

Keywords: reindeer, sheep, skeleton members

CHANGES IN LOCAL TEMPERATURE DURING THE SECOND INTENTION HEALING OF A WOUND IN A FOAL: CASE REPORT

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Summary

Infrared thermography can be used on animals as a noninvasive method to evaluate the physiologic and pathologic changes in body surface temperature in correlation with some conditions, including infection and inflammation. Thermography helps to evaluate different clinical syndromes like musculoskeletal inflammation and to monitor the progression of healing. In this case report was evaluate the local temperature in the period of secondary intention healing on a wound localize lateral to the hock during the local treatment application. The treatment consist of using antimicrobial Germostop powder (*Neomicin sulphat 20 mg, Clorhexidine diclorhidrate 20 mg*) and an ointment based on medicinal herbs Epitelin (*Calendula officinalis, Matricaria chamomilla, Oenothera biennis*) in association with a dressing for wound protection. During the 3 phases of secondary intention the temperature has undergone changes and was obtained different values on each healing phase. The changes in local temperature was in correlation with vasodilatation, inflammation and appearance of the epidermal layer. No major complication was registered during the healing process. Using the thermography we can identified complication before they are visible and estimate the tendency of healing.

Keywords: thermography, wound, second intention healing, foal

**PRELIMINARY DATA ON PREDICTIVE FREQUENCY OF
DYSTOCIA BASED ON INDIRECT PELVIMETRY IN ROMANIAN
SPOTTED DAIRY COWS**

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Summary

Calving difficulty or dystocia is considered a economic loss in cattle industry. The economic losses are due to potential calf mortality, veterinary costs associated with increased labor or with possible postpartum infectious, but also reduced subsequent reproductive performance of the cow. Among many factors that can affect normal parturition is also pelvic area or cow's birth canal. If there is a disproportion between size of the calf and the pelvic area dystocia appears. The assessment of the obstetric conformation of the pelvic area can be done by pelvimetry. Pelvimetry can be indirect (external) and direct (internal). Indirect pelvimetry is based on the principle of uniform development of the skeleton, so by measuring some external parameters, we can appreciate the development of the birth canal, more exactly the anterior opening of the birth canal. Our research was done on 32 Romanian Spotted pregnant cows on which we measured height (from the ground to the dorsal end of the spinal processes of the first thoracic vertebrae) and the external bi-iliac breadth (between lateral ends of the right and left iliac tuberosities). Based on these data we calculated: sacropubic diameter, dorsal bi-iliac diameter, ventral bi-iliac diameter and finally the anterior circumference of the pelvic area. The average value of the anterior circumference of the pelvic area in cows that experienced dystocia was 71.99 cm, and in those with normal parturition it was 79.47 cm, with $p < 0.0001$. Our preliminary results indicates a negative correlation between the anterior circumference of the pelvis and dystocia which could highlights the importance of indirect pelvimetry in estimating the cow's birth canal versus dystocia.

Keywords: indirect pelvimetry, dystocia, Romanian Spotted Dairy cow

THE ANTIOXIDATIVE ACTION OF VITAMIN C AND ROSMARINIC ACID ON DNA INTEGRITY FROM BOAR SEMEN

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Summary

Chemical structure makes boar semen sensitive to cryoconservation and storing at room temperature. The reactive oxygen species (ROS) in high concentrations are leading to apoptosis and fertility decrease. Adding antioxidants such as Vitamin C and rosmarinic acid may reduce the deleterious effects displayed during assisted reproductive techniques. In this paper we assayed the antioxidant effects of Vitamin C and rosmarinic acid on DNA integrity from boar semen. The assessment was performed on semen samples from Large White and Pietrain boars, kept at room temperature ranging between 20-22°C. In control group (CO) no antioxidant were added mean while in Vitamin C group (C) 0.5 mM/L of Vitamin C was included and the same was performed with 105 µM/L rosmarinic acid (RA). In sample 1 the decrease of normal sperm DNA after 48 hours is less intense in C and RA groups compared to CO. In the samples 2 and 3 obtained from Pietrain boars the best results were noticed subsequent vitamin C use versus sample 1 where rosmarinic acid generated better results. The DNA integrity is crucial for fertilization and the antioxidant substances may contribute to its normal status.

Keywords: integrity, DNA, Vitamin C, rosmarinic acid