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PHD-THESIS ABSTRACT

**RESEARCHES REGARDING ETIOLOGY, DIAGNOSIS
AND THERAPY IN COWS WITH PERIMETRITIS AND
PARAMETRITIS**

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With the integration of Romania into the European economic structures In Romania's integration into European economic structures, raising productive performance in livestock is a priority. The complexity and lability of neuro-endocrine mechanisms of action of environmental factors requires knowledge of sexual cyclicity and any other changes related to sexual function. Related with this, uterine pathology plays a major role in the installation of fertility, both in terms of sexual cyclicity disturbance and the zoeoeconomic impact. We note in particular, the important role ,in terms of zoeoeconomics losses, of acute and chronic inflammation of the uterus (peri and parametritis), and the importance of pathways of contamination at this level: endometrial-myometrial-serous coat acces and continuation of the inflammatory processes from pelvis and uterus serous coat level.

The thesis covers both prevention of inflammation extending from endometrium toward serous (perimetritis) and coverage of other genital organs, like: salpinx, ovaries, ligaments (parametritis).

Parametritis diagnosis is of major economic importance especially beacause it can be noted in the chronic form.

PhD thesis entitled, ***"RESEARCHES REGARDING ETIOLOGY, DIAGNOSIS AND THERAPY OF PERIMETRITIS AND PARAMETRITIS IN COWS"***, includes a number of 182 pages, written after the current methodological rules, and contains a total of 101 figures and 37 tables.

Part I - (stage of knowledge), contains data from national and international literature and includes 50 pages classified into three distinct chapters, supported by 27 figures and 3 tables.

Chapter 1 entitled *Morphology and physiology of cow's genital apparatus*, are presented datas regarding morphological appearance of the genital segments, and their physiology. The chapter is composed of two subchapter containing a total of 20 figures.

Chapter 2 entitled *Uterine acute inflammations*, describes the main uterine inflammation, having as a form of manifestation the acute evolution. Disorders described are represented by Catarrhal puerperal endometritis and Purulent puerperal endometritis.

In chapter 3, are presented data from national and international literature regarding chronic uterine infection encountered in dairy cows. Chronic disorders described are perimetritis and parametritis

Part - II - (*personal research*), is carried out in 132 pages and includes four chapters well highlighted, with an iconography represented by 74 figures and 34 tables. Each chapter has its material and working method, results and discussion and partial conclusions. The thesis concludes with a chapter of general conclusions and bibliography

Our objectives try to detect some disorders located at uterine level, represented by perimetritis and parametritis.

In Chapter 4 is described the organizational and institutional natural environment in which the research were reported in a given period. Researches were conducted over a period of three years, January 2007 - January 2010, and were made in two dairy cows farms in Vaslui County. Both farms complied with the general conditions regarding zoohygiene, maintenance, nutrition and productivity.

In Chapter 5 are presented the research methods used, and biological material with which has worked. Investigations were conducted over a period of time quite long, because such genital diseases have a low frequency, are difficult to diagnose and are sometimes asymptomatic.

Research methods used were the usual, consisting of epidemiological investigations of the prevalence of uterine disorders in the studied herd, zoeoeconomics analysis and clinical and laboratory investigations.

Investigațiile clinice au constat în examen general și specific (ginecologic).

- Clinical investigations consisted in general and specific examination (gynecological).
- Laboratory investigations consisted in:
 - ✓ haematological and biochemical profile analysis;
 - ✓ microbiological analysis performed on genital secretions;
 - ✓ histopathological analysis;
 - ✓ pelvic ultrasonography.

The main objectives of the research were:

- assessment of morphofunctional changes in cows with perimetritis and parametritis;

- the incidence of these uterine disorders in relationship with different factors of variation:
- assessment of haematological and biochemical profile;
- identification of bacterial flora involved in these uterine disorders;
- histopathological changes in the structure of organs, at slaughtered animals;
- pelvic ultrasound aspects of the cows.

Chapter 6, titled *Clinical research of parametritis and perimetritis in dairy cows*, deals with aspects of general clinical examination in cows with chronic uterine disorders, and aspects of clinical examination for genital apparatus in particular, represented by colposcopic examination and trans-rectal examination. Also, are presented data with reference to the incidence of parametritis and perimetritis in different categories of cow.

The main sign observed in cows with metritis consecutive to endometritis is the presence of intermittent secretion with purulent or seropurulent character which can be observed in the ventral commissure of the vulva.

At the trans-rectal palpation effectuated in cow with parametritis, the cervix and the uterine horns appeared increased in volume, with fluctuant consistency and increased sensibility. The maneuver was effectuated with difficulty or could not be effectuated at all sometimes due to the exaggerated pain of the animal.

Cows with parametritis also presented at trans-rectal palpation a hard consistency heterogeneous mass, undefined and with reduced mobility. The identification and palpation of the of the genital system segments was impossible due to the adhesion of the cervix, uterine horns, oviducts and ovaries and also the other tissue surrounding them. In other words, at trans-rectal palpation, the genital system was the appearance of an aneural block. In this case, the sensibility can be poor or even absent.

The analysis of all the dates suggests that the severe affections of the genital system represent a high percent 60,95 % (69,2 % in farm number 1 and 52,7 % in farm number 2) from the total lactating cows which are isolated from the production effective.

Parametritis and perimetritis (2 severe metropaties encountered in cows), occupy a relatively constant percent in the monitored farms. The total medium value was 1,3% (1,54% - farm 1, and 1,08% - farm 2), from the total number of lactating cows.

In Chapter 7, are presented data obtained by laboratory examinations.

Haematological and biochemical profile analysis reveals differences between the values of these two profiles obtained from experimental groups (EG1-cows with perimetritis and EG2-cows with parametritis) and the control groups.

Cows with perimetritis (lot E1) presented variations of the hematological parameters comparative to the healthy cows during the early period of the lactation (Lot M1), represented by the low medium values which tended to the inferior limit of the specie, in both lots, in which concerns the number of erythrocytes, hematocrit and hemoglobin and high values in what concerns the total number of leucocytes, represented by neutrofiles.

Cows with parametritis (Lot E2) presented certain variations comparatively with the healthy ones, in the advanced stage of lactation (Lot M2), which were manifested through out low medium values tending towards the inferior limit of the specie, concerning the number of erythrocytes, haematocrit, hemoglobin and high levels, over the medium value of the reference dates, concerning the total number of leucocytes, especially neutrofiles.

The biochemical constants in cows with perimetritis (lot E1), registered the following modifications, comparatively with the cows from the lot M1: lower levels of total seric proteins, increasing levels of seric globulins (62,70% ; high levels of seric enzymes: ALT (U/I), over the superior limit of the specie (45,50±0,2) and low levels tending to the inferior limit of the specie in which concerns the alkaline reserve, the seric enzymes AST, GGT, FA, calcemy , phosphoremy indicating a state of metabolic acidosis, as well as some hepatic disorders or disorders of the phospho-calcic metabolism.

Chapter 8, details the general preventive and curative therapeutic conduct of uterine disorders, and like a particular item are presented datas regarding unconventional therapy of perimetritis, by punching the dorsal vaginal area and introducing medicinal substances at periuterine level.

The prophylactic treatments applied ante partum and postpartum in cows determined the reduction of incidence of fetal annexes retention with 10% (L.E), comparatively with the witness lot which registered values of 10% in the case of fetal annexes retention and 16, 7% in the case of genital infections.

The medium interval calving- first insemination was 70days – experimental lot (L.E), values which were lower comparatively to the witness lot (90days).

The fecundity ratio at the first artificial insemination was 40% in the experimental lot, higher with 13, 3% comparatively with the witness lot, in which the value was 26, and 7%.

The efficiency of the treatments applied both in prophylactic and curative mode, in cows with metropaties, depended on the complexity of the affections, the moment of the diagnostication and the institution of the treatment. These actions determine in the end the reduction of the incidence of peri and parametritis.

The direct approach of the inflammatory process in cows with perimetritis was effectuated using the intra-pelvin administration of therapeutic cocktail, through out the perforation of the dorsal vaginal bag. Because this type of affection tend to chronicization and its manifestation are over a long period of time, there are few cases witch request such therapy and the lack of conclusive results makes us to recommend this method of therapy for the cases which will be reformed and conditioned towards the slaughter house.