SUMMARY

Key words: puerperal period, cow, uterus, ovary.

The PhD thesis entitled „Research regarding the puerperal period of cows using reproduction biotechnology" has a character of originality by regarding the complex monitorization of the phenomenon in the puerperal period, consisting in the reference point of the appreciation of the morphological status regarding the production development. In this context, the clinical study was completed by exams that finish the diagnosis and the prophylaxis in the puerperal period.

The PhD thesis has a number of 260 pages a and is being structured classically in two parts:

- the first part, the bibliographical study is extended on a number of 62 pages being systemized in 5 chapters referring to: monitorizing the genital; cow's parturition; puerperal period; parturition pathology; monitorization of the characteristics of the puerperal conditions.

- the second part, personal research, has a number of 176 pages and it is orientated on the following aspects: purpose and objectives of the research, research regarding of the uterine involution and the monitorization of the liquid eliminated after birth, research regarding the puerperal uterus' bacteriology, histopathological research on the genital conduct, research regarding the Ki-67 marker in the conditions of the cow's ovary, research on uterine conditions as an infertility factor, the monitorization of the reproduction index in the puerperal period and the appreciation of the economic efficiency.

Aspects of the research are presented in 132 figures and 32 tables inserted in the researches.

The bibliography is achieved by consulting a number of 277 specialty papers selected from Romanian and foreign literature mostly in the last 5-10 years.

Monitoring the puerperal period requires the collaboration of the factors that determine the reproduction ciclograma and the achieving, in optimal time, the physiological and the morpho-functional ante-partum period parameters.

CHAPTER VI presents „The purpose and the objectives of the research". The PhD thesis follows the clinical study of the puerperal period, supplemented by additional examinations which complete the elements that contribute to the prevention, diagnosis and therapy of various stages of the puerperium. Offering a diagnosis in cows puerperal diseases is based on a wide range of investigations conducted during 2010-2014. These investigations have pursued several aspects:

- Monitoring the dynamics of uterine involution, including the elimination of the after-birth liquid;

- The use of ultrasound as a diagnostic of uterine involution;

- Study of puerperal uterine bacteriology;

- Monitoring of the breeding activity by returning to pre-gestation ciclograma.

CHAPTER VII refers to „Research regarding the uterine involution and the monitorization of the liquid eliminated after birth".

The main methods of diagnosis, of the degree of uterine involution, are the internal and external clinical examination supplemented by ultrasound.

The research conducted on a group of 20 cows during the puerperal period were aimed primarily on the uterine involution dynamics in terms of three parameters: length, diameter and weight of the uterus. Research has shown that the length of the uterus varies during the 1-21 day post-partum from 97 to 22 cm. The diameter of the uterus diminishes its size from 43cm (day 1) to 4cm (day 21) post-partum, and the uterine weight shows a decrease from 8 kg at day 1 to about 1 kg on day 21.

The observations on the rate of liquid eliminated after birth show a progressive decrease from about 1000 ml on days 1-2 post-partum, 500 m on days 6-10 and 150 ml on days 16-21, post-partum.

From the ultrasound point of view, the gynecological exams completes the clinical one, being characteristic of 3 stages: first 1-7 days the rhythm is more accelerated, the following 10-15 it is weaker, and in the last days 20-21 days post partum there is a substantial increase in the rate of involution.

Research has shown that in some cases of ovarian lesions disrupt uterine involution.

The CHAPTER VIII „Research on the Bacteriology of the puerperal uterus" were performed on 40 cows examined during the first three weeks post-partum.

The primary analysis of bacteriological data show that the specimens were of a pure culture in 2.76% of cases, compared with 97.24% of mixed bacteria cultures.

In this research it was determined, quantitative and qualitative, the bacterial isolated flora. Investigations showed that the total number of germs increases progressively during the first 2 weeks post-partum, higher in females with parturition dystocic.

Of the 282 bacterial isolated strains, 126 (44.68%) were gram-positive strains, were 156 (55.32%) were gram negative strains.

The classification the bacterial strains according to the type of breathing indicates that the amount of 93.62% was isolated aerobic bacteria and anaerobic bacteria only 6.38%. This classification was performed correlating cultural, morphological and biochemical characters reaching up to species level.

It was also found the most frequent isolation in the bacteria Escherichia coli 28,37%, Staphylococcus spp. 10,64%, Arcanobacterium pyogenes 4,26%. A similar share was found in Klebsiela spp. 5,67%, Enterococous spp. 4,96%, Bacilius spp. 4,96%, Pseudomonas aeruginosa 4,26%, Corynebactreium spp. 4,26%, Streptococous spp. 4,26%. These microorganisms have been diagnosed in combination with other types of bacteria: Clostridium spp. 2,84%, Neisseria spp. 2,84%, Citrobacter spp. 2,13%, Actinomyces spp. 2,13%.

DST has highlighted the sensitivity of bacteria to different antimicrobial substances, enrofloxacin, oxytetracycline and tetracycline in particular.

CHAPTER IX „Research on some histopathological aspects of the genital tract".

Histological investigations were preceded by anatomical fragments harvested from the uterus, ovary with corpus luteum polycystic ovary and oviduct. The pieces were processed and colored using the methods: Hematoxylin - eosin - methylene blue (HEA) for general tissue issues, periodic acid - Schiff Fuxin (PAS).

The results show that ovarian hypotrophy is an injury that is the main problem of breeding. Morphological changes found suggest that reducing trophical traffic and local tissue metabolism. Follicular fluid appearance shows increased viscosity and lack of pinocytation of the radiate crown cells.

In the case of the follicular cysts in our research there was found a deviation of the follicular function of the external secretion (ovocytogenesis) to the predominant endocrine secretion (theca gland highly developed in all cases).

As a general matter, in most studied cases it appears as a constant lesion the intimalization and fibrosis of the medium of arterioles and small arteries.

CHAPTER X ,,Research on the marker Ki-67 in the ovarian diseases in cows".

The research has found some aspects detectable using immunohistochemical marker Ki-67.

The method reveals the altered cell proliferation in the bovine follicle cyst explaining their slow growth and maintaining a static condition without deterioration, this leading to their persistence.

The histological research has found, in the medulla of the ovary, the ovarian network likely involved in the functions of this segment. It appears that ovarian grid cells could play a role in the development of the vascularisation during fetal growth by a estrogen / PDGF mechanism.

CHAPTER XI ,,Research on uterine diseases as factors of infertility".

In which regards the frequency of diseases encountered in our research, it shows that the most common are the gynecological diseases, represented by 33.7% in 2012, 29.4% in 2013, followed by the medical and surgical ones.

Some differences were found in the annual growth rate due to improved assistance and preventive treatment on parturition occurring in such cases a decrease of 25.3% to 21.1% for acute endometritis and 9.7% to 8, 3% in the case of chronic endometritis.

Research undertaken indicates that the share of puerperal disorders varies depending on other adjuvant factors: lactation number, milk production level, calving season, age of female and nutrition. In this context it has been found an increased number of medical conditions directly proportional to the level of milk production: 11.1% l milk production 3000-4000 to 19.5% at an output of over 7000 l milk.

Clinical examination of the females with chronic catarrhal endometritis shows that the values obtained are within the physiological limits: pulse 71 beats / minute, respiratory rate 26 breaths / minute and temperature of 38.70 C.

The issues presented in the thesis can be a general conduct regarding the monitoring and assessment of data especially on the economic efficiency of raising dairy cows.

CHAPTER XII, ,,Monitoring the index of reproduction in the puerperal period and the estimation of the economic efficiency".

In this purpose there have been examined several indicators that relate to the stages of breeding ciclogramei: parturition, the stages of the puerperium, biotechnology artificial sowing and diagnosis of pathological conditions in the puerperium.

In the area of reproduction the research pursued the economic efficiency caused mainly by the losses caused by not reaching the number of calves due to infertility and sterility as well as losses caused by the failure of milk production estimated by the scarcity of milk and milk cost deficit.

The analysis of the average annual milk production in the years 2012-2013 shows that the

peak of lactation is recorded in III and IV, followed by a gradual decline to the ninth month.

The index of sowing ranged from 2.65 to 2.75 and an average of 2.70.

The index of gestation in the years in which research has been done was 78.5%, with differences between cows and heifers.

Average conception rate was at an average rate of 49.95 with some differences in the years 2012 and 2013.

Calving-interval analysis shows an average of 252-396 days. This range represents a 25.3 percentage of total cows studied.

The calves deficit calculated in the years 2012-2013 shows that in 2012 was of 1.9 calves and in 2013, of 2.7 calves.

The economic calculation result of the effect of changes of the breeding ciclograma also followed the measures taken in a farm. Thus this calculation showed that in 2012 the cost gap of calves is 780 RON and in 2013, 1080 RON.

These losses are added to the ones resulted from not reaching the milk production, valued up to 4295,2 RON in 2012 and 6379,8 RON in 2013.