

## REPRODUCTIVE DISORDERS AND THEIR INFLUENCE ON THE EFFICIENCY OF USING IN HUNTING BITCHES

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**Summary:** Besides the significant benefits, the using of hunting bitches has also significant deficiencies. One of these deficiencies is a relatively frequent occurrence of reproductive disorders and diseases, which significantly reduces the efficiency of their use in hunt. Therefore, the aim of this paper is to present the basic reproductive disorders and their impact on efficiency of bitches that is using for hunting. The most common is the estrous cycle disorders, pseudo pregnancy, uterus inflammations (pyometra), tumors of the reproductive tract and mammary gland. These disorders and diseases is associated with the specific physiology of female reproduction, as well as the influence of genetic (race of the bitches) and par genetic factors (age of the bitches, the annual season, diet, housing conditions, method of use in the hunt, condition and health status of bitches). With proper preventive measures and treatment, it is possible to significantly reduce or completely avoid the negative impact of these reproductive disorders on the efficiency of using these dogs in hunting.

**Key words:** reproduction, disorders, hunting, bitches.

### Introduction

Many hunters are using bitches for hunting. The reason for this is better obedience and greater commitment to bitch owners, compared to male dogs. However, the efficient use of bitches in hunting can be significantly reduced due to the specific physiology of female reproduction (every 4 to 6 months estrous cycles manifestation), and the relatively frequent occurrence of reproductive disorders and diseases [1]. According to the records of the American Kennel Club, disorders and diseases of the reproductive system of dogs, are about 24% of all illnesses reported in the clinical veterinary practice. The most commonly occurring are the estrous cycle disorders, pseudo pregnancy, uterine infection (pyometra) and tumors of the reproductive organs and mammary glands. Causes of these disorders and diseases are associated with the specific physiology of female reproduction, as well as the influence of genetic (race of the bitches) and par genetic factors (age of the bitches, the annual season, diet, housing conditions, method of use in the hunt, and weak body condition and health status of bitches, as a consequence of inadequate prevention and treatment of disorders) [1, 10, 11, 13].

The aim of this paper is to present basic reproductive disorders and their impact on efficiency of using female dogs in hunting.

### Reproductive disorders and diseases

#### *Estrous cycle disorders*

Disorders of bitches estrous cycle are silent estrus, false estrus, prolonged estrus and prolonged anestrus. *Silent estrus* is the phenomena where is present a normal hormonal status and normal cyclical ovarian activity, with ovulation, but the external signs of estrus are not manifested (do not mix with the situation when these signs are manifested, but the owner, for whatever reason, is not detected). In a significant number of females, the first pubertal estrus is a silent (no external signs, or the signs are very weak and/or very short lasting). [13]. *False estrus*, is the situation reversed from that in silent estrus. Specifically, females manifested swelling and hyperemia of the vulva, and serohemorrhagic discharge from the vulva, during a short period than normal, but ovulation does not occurs. Usually, a normal estrus occurs several weeks later [13]. *Prolonged estrus* is usually the result of follicular cysts, which synthesize estrogen, leading to prolonged estrus, the discharge from the vulva, and the frequent occurrence of alopecia on the hips and hyperkeratosis. In this case, the unilateral ovariectomy or ovari hysterectomy, is the only way to eliminate these clinical symptoms [13]. *Prolonged anestrus* was a consequence of lacteal cysts, which synthesized the progesterone. This resulted as prolonged anestrus period with cystic endometrial hyperplasia (CHE) and, consequently, purulent inflammation of the uterus (pyometra). Follicular and lacteal cysts are much more common in older females [2].

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### False pregnancies (Pseudo pregnancy)

False pregnancies appearance can be explained as a certain phenomenon, which is significantly more common in female dogs, compared to other animal species. A physiological and a psychological syndrome that occurs in bitches who are not mated at the time when it was needed, with the prevalence of occurrence 1-3 months later [3]. The intensity of symptoms varies from individual to individual and the phenomena of this syndrome have the prevalence of 50 to 75% bitches [4]. It is believed that a false pregnancy is basically the result of extending and intensifying of metestrus period. However, some research shows that the concentration of progesterone in blood plasma was not significant different in pseudo pregnant, compared with the bitches with no manifestation these phenomenon [4]. It is also believed that prolactin secretion is a major factor in the development of the bitch's pseudo pregnancy [5]. Clinical symptoms range from mild enlargement of the udder and lacto genesis to the ultimate extreme signs of pregnancy with a real manifestation of parturition behavior, making nests, loss of appetite, apathy, emotional attachment to a strong immovable objects and lactation. Complications of pseudo pregnancy include retention mastitis and mammary gland infections, especially in females where lactation occurs. These disorders often result in the mammary gland tumors occurrence. Pseudo pregnant bitches, shows a less agility and they are more aggressive to other dogs in the hunting field. Timely sterilization of bitches is an effective method for pseudo pregnancy prevention, and negative consequences occurrence. Pharmacological (more specific) the hormonal therapy, however, has a large number of negative side effects.

### Pyometra

One of the major diseases in dogs is pyometra (purulent infection of the uterus) that usually arises precisely from just explained disorders above. However, it can also appear as an independent disease of dogs, in different ages and time of seasons. This disease is most often occurs in older females, which have never given birth [6,7,8.] but can also occur in younger females, as a result of complications postpartum, usually infective etiology. This disease in a significant extent interfere with the health of dogs, usually latent, and with no particular clinical manifestations until the moment of generalization. Thus, 52% of the examined bitches of large breeds, pyometra was diagnosed between 7 and 9 age, while 51% of small breed bitch, when diagnosed with pyometra were significantly older ( $\geq 10$  years) [9].

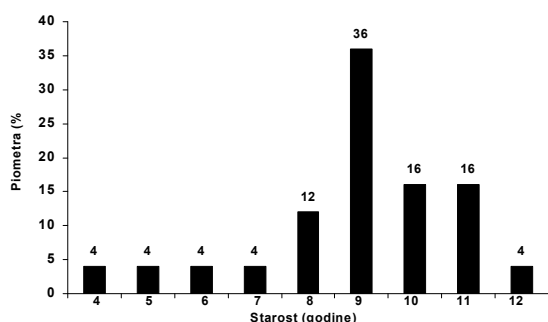


Fig. 1. Age of bitches and pyometra occurrence (Fukuda, 2001)

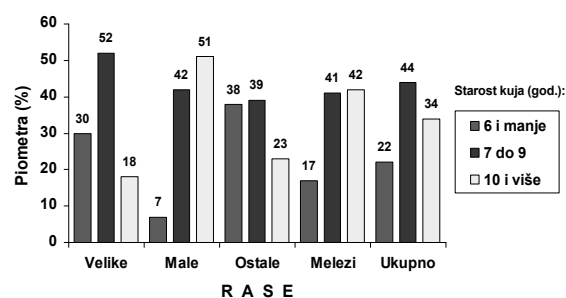


Fig. 2. Race influences on bitches age on pyometra occurrence (Stančić, 2008)

Season also significantly affects the incidence of pyometra, which is very important for hunters. For example, the first symptom of this disease is the appearance of polydipsia in dogs, and that it can be a useful first alarm to the owners and veterinarians. Especially when increased will for taking water occurs in the colder season, when, normally, the bitch should not exhibit an increased demand for water intake [10]. Our research [10] show that the incidence of pyometra is much higher at the beginning of summer and winter hunting season. The total number of tested females, a significantly higher percentage ( $P < 0.05$ ) of pyometra diagnoses in bitches was established in January (17%), June (12%), September (14%) and October (11%). In other months, this value was almost twice lower and ranged between 5 and 7% [10].

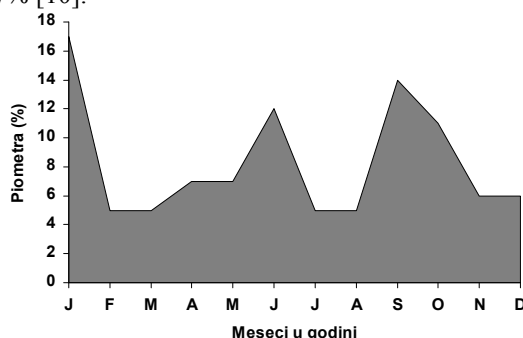


Fig. 3. Distribution of pyometra occurrence in the particular months of year (Stančić, 2008)

In veterinary literature, there is no single opinion about the hereditary predisposition for the occurrence of pyometra in dogs. Thus, some authors [14] report no hereditary influences for the pyometra occurrence, although some breeders and veterinarians noticed an increased incidence of pyometra in some lines of bitches, within the same race. Females in the initial stages of this disease, particularly later in generalization stages of disease, showed a significantly lower efficiency in hunting. In the treatment of this disease is achievable by pharmacological methods and radical methods of treatment. Pharmacological treatment is highly variable results depending on the degree and form of pyometra, as opposed to the radical method, which includes sterilization as a permanent solution in the treatment, prevention and treatment of this disease.

#### ***Tumors of the reproductive tract and mammary gland***

The occurrence of tumors in the reproductive tract certainly plays an important role in the bitches' reproductive pathology. However, much more significant role in the pathology of tumors comprises a mammary gland neoplasia. Causes of mammary neoplasia are still not fully explained, but in addition to any other etiology is certain that in some way dependent on the progesterone [11]. Age of the bitches plays an important role in the emergence and development of mammary gland tumors and the risk of cancer significantly increase with the age of the animals [11]. Mammary gland tumors can be small or large, benign or malignant metastatic nodes in the gland. In relation to the location, frequency of occurrence mammary neoplasia in the caudal mammary complex is 40-60%, while the first mammary complex rarest affected, as such is not the case with cats, of which the most frequent occurrence of right cranial mammary glands.

#### **Prophylaxis and therapy**

Ovariohysterectomy or ovariectomy is an act of radical surgery, providing for permanent sterilization of bitches. The goal of this intervention is the prevention or treatment of reproductive disorders and diseases. Ovariohysterectomy include a complete removal of the uterus, both fallopian tubes and both ovaries, and ovariectomy is the surgical removal of only one or both ovaries (uni-or bilateral ovariectomy). These interventions can be performed in bitches of all ages. Preventive sterilization is performed in order to: (a) prevention of estrous cyclicity, ie. mating and unwanted pregnancy, (b) preventing the occurrence mammary neoplasia, and (c) occurrence of pyometra. Sterilization is also providing for therapy of the reproductive, endocrine and dermatological diseases. It is very important that sterilization does not endanger the general health, fitness and capacity utilization bitch, especially when it comes to preventive intervention.

#### **Conclusions**

The relatively frequently occurrence of reproductive disorders and diseases, significantly reduces the efficiency of using bitches in hunting. The most commonly occurring disorders of estrous are cyclicity (silent estrus, false estrus, prolonged estrus and prolonged anestrus), pseudo pregnancy, uterus inflammation (pyometra), and various cancers of the reproductive organs and mammary glands. There are various ways of prevention of occurrence of these disorders and diseases. The most effective form of prevention is the sterilization of bitches, using surgical procedure for ovariectomy or ovariohysterectomy of the bitch, if an owner has no plans for further reproductive exploitation of the bitch.

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