

## **COURSE DELIVERY (PARTURITION) COWS ON THE BEEF FARM „GRCIC “ IN THE EXTENSIVE FARMING**

Duska SLIJEPAC\*

Faculty of Agriculture, University in Banja Luka, Republic of Srpska, Bosnia and Herzegovina

\*Corresponding author: sljepac.duska@yahoo.com

### **Abstract**

Duration of pregnancy is biologically determined at cows and its amount of nine months. On vary of gestation influences: maternal factors, fetal factors, genetic factors and environmental factors. Since pregnancy and partus are very complex physiological processes as opposed to the extensive in intensive applied their artificial control that can be taken only if they known the short and long term consequences for the mother and fetus, which may result from the applied treatments. In the extensive production on the farm “Grcic“ is represented the natural course a cow giving birth, without control of the owner and veterinarian. On the contraction of miometrium acts oxytocin, all this resulting in the pressure of the fetus on the cervix and the vagina, causing a so-called Ferguson reflex further secretion of oxytocin and the contraction of the abdominal muscles. This created the conditions for the start of extrusion of the fetus. The course delivery can be divided into three more or less clearly separated stages: (1) a preparatory stage, (2) the stage of fetal displacement, and (3) the stage of displacement fetal membranes and fluids.

**Keywords:** *cow, delivery, extensive production*

### **Introduction**

The farm of beef cattle „Grcic“ from Drnis (Republic of Croatia) produces beef cattle (Angus breed). Extensive production of this farm is based on protection of nature, animal welfare and leads to organic production. Grazing cattle, method of holding, reproduction, and location of residence of cattle in a natural environment on a small Promina. The farm has a total of 80 Angus beef cattle and three bulls to get their offspring. Act of breeding on the farm occurs in a nature without control measures. Course delivery (parturition) the cow’s takes place in a completely natural way. The only protective measure to be applied during pregnancy, parturition and during the first days of life the youth, is protection against wolves attacks.

### **Literature review**

#### **Delivery**

Physiological process by which, the gravid uterus pushing out fetus, fetal membrane, and fluids is called delivery (partus). Onset of delivery is preceded by the appearance of very specific physiological and behavioral changes of pregnant animals (Stancic et al., 2002). A few days before delivery vulva swell increases and become hyperemic, and from it is dripping mucous liquid (Peters et al., 1987). There is wetted (serous infiltration) arch ligaments of the pelvis (lig. scrospinosa ol. sacrotuberosa), as well as cartilaginous part of the symphysis pelvis. Relaxation mentioned ligaments, as well as consequences of their wetted, resulting in the appearance of dents pelvic arch with left and right side of the root tail. Shortly before delivery begins the activity of secretor epithelium of the mammary gland, which is in gestation subjected to the process of hypertrophy (Geoffrey, 1975). Before delivery can be observed changes in the behavior of pregnant animal. She became restless, exhibit in

appetence or completely refusing food, and often sounds like. These changes indicate an imminent start of delivery, and there is result of specific and complex neuron-hormonal and mechanical events (First, 1970).

#### Start of delivery

Start of delivery is regulated by the interaction of complex neuron-endocrine and mechanical factors on relation mother-fetus (Gordon, 1997). There are several theories about the mechanisms that cause start of delivery, but today the most acceptable one that says that the initial stimulus for initiation of the mechanism of labor is derived from fetuses (Bazer and First, 1983). Hippocrates claimed that the fetus at a certain point, corrects its legs and pressure uterus, how to cause birth contractions (Geoffrey, 1979). Embryonic mortality increases after the fertilization, but it is proportional to the highest between 15th and 18th days of gestation, whereas the post implant period until the normal calving is 5 to 8% (Sreenan et al., 1986).

#### Course delivery

Course delivery can be divided into three stages: the preparatory stage, stage of fetal extrusion of fruit and stage of fetal extrusion membranes and fluids (Hafez, 1974). Duration of individual stages differs in certain domestic animals, but the stage of extrusion of the fetus, under normal circumstances, in all species is the shortest.

#### The preparatory stage

During this stage there are some changes, which are representing necessary preparation for extrusion the fetus. Uterus, who is up to this moment rested, begins the accumulation of large amounts of energy substances, and greatly increases the amount of actomiozon, proteins of the contractile smooth muscle fibers miometriuma. In this way, the uterus provides the necessary sources of energy and proteins for extrusion of fetus (Hafez, 1974). This stage is called the stage of opening, because in this period of time by expanding of soft tissues and bone basic of the birth canal. Stars and coordinated contractions of uterus, which resulting in fetal membranes injecting the liquid into the cervical canal, which performs its spreading and opening. During this stage of the contraction of the uterus only manifested, and the distance between them is longer than the distance between the individual stages of the uterine contractions during the extrusion of the fetus. Uterine contractions cause some pain, which called labor (*Dolores praeparantes*). Contraction of the abdominal muscles (so-called abdominal presa) is not observed during the preparatory stage. At the end of this stage the cervix has fully expanded, and the uterus, cervix and vulva comprises a unique channel. Fetus membranes are embedded in the lap of birth canal, which burst, and fetal fluid stresses through vulva in the outer environment.

#### Stage of extrusion of fetus

This stage occurs shortly after preparatory. Then the head and the part of front and hind limbs, wrapped in the amnion, impact in the birth canal. During this stage the contractions of the uterus are the most common and the most powerful. This stage lasts at least in relation to the first and the last stage of labor.

#### Stage extrusion of the placenta

At this stage of contraction of the abdominal muscles gradually calm, as well as contraction of the uterus, but the later still sufficiently strong and frequent, to could throw out the remaining parts of placenta and amniotic fluid. Peristaltic contractions of the uterine horns,

which start from the tips of horns, pushing out the placenta in the inverted position. As the inner side of the placenta, which is now outside and sits on the walls of the birth canal, smooth and slimy, this allows it's easier to extrusion.

### Puerperium

Puerperium is the period between the end of the extrusion of the placenta and the moment when the mother's body, in histological, morphological, psychological, and psychological terms, reaches the state it was in prior to establishing a pregnancy (Hafez, 1974). The most important changes that occur during the puerperium are regeneration of endometrium, uterine involution, and re-establishment of the estrous cycle. The first ovulation and estrus at cows occurs in 15 to 16 days after calving (Petrovic, 1976).

### Conclusion

On the farm „Grcic“ parturition of cows takes place without complications, in a natural way. Insemination of cows performed three bulls with good genetic characteristics, health status, individual characteristics, well kept and well fed, and the farm has a healthy offspring. Losses occur due to wolf attacks, and major complications during parturition were not observed (Grcic, 2013).

### Literature

- Bazer, W. F., First, L. N. (1983); Pregnancy and parturition. *J. Anim. Sci.*, 57/2/425.
- First, N. L. (1979); Mechanisms controlling parturition in farm animals. In: H. Hawak / Ed. Animal production, pp 215-257. Allanheld Osmun, Montclair, New Jersey.
- Gordon, I. (1997); Controlled Reproduction in Cattle's and Buffaloes. CAB International, Oxon, UK.
- Geoffrey, H.A. (1975); Veterinary Reproduction and Obstetrics (41h Ed.) Part one, pp 131-142. Balliere, Tinndall, London.
- Geoffrey, D. T. (1979); Physiology and control of parturition: Reflections on the past and ideas for the future. *Animal Reprod. Sci.*, 2:1-27.
- Hafez, E. S. E. (1974); Reproduction in farm Animals. (3rd Ed). Lea & Febiger, Philadelphia.
- Peters, R. A., Ball, H.J.P. (1987); Reproduction in Cattle. Butterworth's, London.
- Petrovic, Dj. (1976); Reproductive activity of domestic spotted cows. Ph.D. Thesis, Novi Sad, 1976.
- Sreenan, M. J., Diskin, G. M. (1986); The extent and timing of embryonic mortality in the cow. In: Embryonic mortality in farm animals (J. M. Sreenan and M. G. Diskin, ads.). Martinus Nijhoff Publishers. Dordrecht-Boston-Lankaster, 1986.
- Stancic, B., Veselinovic, S. (2002); Reproduction of domestic animals, Second revised edition, University in Novi Sad, Faculty of Agriculture, Novi Sad.
- Stancic, B., Veselinovic, S. (2002); Biotechnology in the reproduction of farm animals, Textbook for Postgraduate studies, University in Novi Sad, Faculty of Agriculture, Novi Sad.