

BIRTH ALARM

TYPE EUROMEX H II

A good monitoring-system around the birth of a foal

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The birth of a foal is not only an exciting event for the owner, but it may also give rise to concern regarding the well being of the mare and her foal. In most cases no problems arise during birth and the mare is able to deliver her foal spontaneously, without human assistance. However, if difficulties in any form do arise, such as prolonged labor due to bad positioning of all or part of the foal or torsion of the uterus, serious damage to the birth canal is possible. The life of the mare and/or her foal could be in danger. In 5-6% of all births, veterinary help is necessary and the timely arrival of this help is of vital importance. To achieve this the onset of labor must be signaled to the owner or caretaker.

To predict the moment when labor will commence is very difficult, if not impossible; the variation in gestation length is very large in horses and the symptoms associated with parturition, such as restlessness, dropping of the pelvis, sweating and swelling of the vulva, just indicate that birth will occur soon and does not indicate the exact time when labor will start. In the past the only way the owner could expect to be with the mare during labor was to stay awake and watch her. More recently various systems have been developed to warn the owner that the birth process has started. However the efficiency of these systems is severely limited and various mishaps occurred. If such a system is to be considered reliable, no foal should be born without setting off an alarm and the occurrence of false alarms should be minimal. The equipment should indicate to the owner that birth has started and this warning should be given easily enough for help to be summoned if necessary.

BACKGROUND

The principal on which the Birth Alarm is based is the detection of a physical state, i.e. the lying posture of the mare. Almost every mare gives birth while lying flat on her side or at least lies in this way at some time during labor, it is an exceedingly rare event when this does not occur. On the other hand, during normal rest or sleep, with very few exceptions, mares do not lie in this position. In order that the equipment does not give a false alarm due to a mare, sleeping on her side, it is fitted with a special "sleep" switch.

EQUIPMENT

The equipment consists of two parts: a transmitter and a receiver. The transmitter has a mercury switch and is mounted on an anti-castroller girth, which can be very easily fitted to the mare. The receiver can be placed in the house or in the stable (wherever the observer is waiting). As the range of the transmitter is about 150 m, it is possible to leave the mare in a meadow or a paddock in the vicinity of the receiver. It is also possible to use the same receiver to monitor several mares simultaneously. In addition, the distance at which the signal can be received can be extended, if necessary, by attaching a wire and a bell or a telephone pager to the receiver.

TESTS

In the foaling season of 1991 the Birth Alarm was tested at the Proefbedrijf voor de Paardenhouderij (Experimental farm for Horse-research) at Brunssum, The Netherlands. During these tests the Birth Alarm was relied on as the sole indicator of birth: the mares taking part in the test were not checked on unless the alarm sounded. The tests looked at the accuracy of the alarm, the occurrence of false alarms, the timing of the alarm activation, its ease of use and the comfort of the animal. The mares were normally observed directly during the day; therefore an alarm system was not needed. Generally the girth was only fitted at the end of the working day and only to those mares where birth was suspected to be imminent.

Four girths were used simultaneously on four separate mares and in total forty mares were available for testing. However, three of these foaled before the girth was in use. Of the remaining thirty-seven mares a further eight animals foaled during daytime (i.e. without wearing a girth). Therefore the alarm was tested on a total of twenty-nine mares.

ACCURACY

In twenty-eight cases the girth was activated and birth could be observed. In the remaining case, the mare was found to be beyond the range of the receiver. Eleven mares foaled in the stable and eighteen mares foaled in the paddock.

FALSE ALARM

A total of One hundred sixty-six test nights were undertaken, during these only eight false alarms were reported i.e. the alarm sounded but the mare was not ready to foal. This represents a false alarm rate of 4.8%. In six of these false alarms the mare was sleeping on her side and in the other two the girth had moved from its correct position.

TIMING OF THE ALARM

In order to assess how timely the alarm is, one must judge the stage of labor when the observer arrives. In doing this one must take into account the fact that parturition in the horse is a rapid process and that it takes some time for the observer to walk to the mare. In twenty-eight test cases the stage of labor on arrival was as follows: in fifteen cases the amniotic sac was either not or only just visible, in eleven cases part of the foal was already visible outside the vulva and in two cases the foal was nearly or just born. In the two latter cases the mare was slightly farther away, thus it took longer for the observer to arrive.

CONVENIENCE IN USE

The equipment is easy to use and fitting the girth requires very little effort.

COMFORT OF THE MARE

The mare experiences little trouble in wearing the girth and this is the only feasible way to fit a transmitter on a mare. Mares that are not used to wearing a girth, should undergo a short period of acclimatization such as used for sport horses. Animals that are accustomed to a girth will not require a familiarization period. Some minor abrasions were found under the girth in six mares but none of these were serious.

VETERINARY OPIONION

From an ethical standpoint the Birth Alarm has ethical advantages over many other birth monitoring systems in that there is no need for surgically attaching the equipment to the vulva. From an obstetric point of view it is advantageous in that the signal does not depend on “something” coming out of the vulva (i.e. amniotic sac or part of the foal). In cases when the amniotic sac ruptures internally and when the foal is presented incorrectly so that no parts of the foal will emerge, the above-mentioned systems will not react. In this situation the Birth Alarm system will respond, because the normal lying behavior of the mare will not be affected by these events. Therefore there will be ample time to call for help. In twenty-eight tests where the alarm functioned including the two where the foals were incorrectly presented. In one case the manager could correct the problem himself and in the other there was ample time to call a veterinarian. In both cases a live foal was born and the mare was unharmed.

In summary, it may be said that the Birth Alarm is a promising device, ethically sound and not distressing for the mare. The number of animals used in the study was relatively small, thus a follow up study will be necessary in the future. Nevertheless, it seems fair to say that, in spite of the limited number of observations, the success rate of the device was 100%. From a veterinary point of view it is highly commendable. In order to avoid surprises, it is necessary to fit the girth in time. In connection with the speed of birth of horses and the time needed to get to the mare, tearing of the vulva could occur. In such cases, there is enough time to call for help and prevent worse damage.

Finally, it must be said that a birth indicator that works in 100% of cases will never exist, as exceptional incidents will always occur. Even the time honored method of “Watching and Waiting” will not avoid these.

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