Technology Offer

Device for monitoring vital parameters of bovine and/or equine fetuses during parturition

Problem to be solved: During parturition, the average mortality rate of calves varies between 5% - 10%. Besides this negative impact on the economics of the dairy farm, increased losses are unacceptable from an ethical, socio-political and animal welfare point of view.

Technology

Our team developed a hoof cover, which enables a wireless and non-invasive monitoring of the oxygen saturation and heart rate in bovine fetuses during labor using commercially available sensor technologies. In future, data should be transmitted to a mobile device such as a smartphone. With onset of parturition the farmer or veterinarian covers the hoof of the unborn calf with the device and will only be alerted in case of abnormalities. Without man present, the dam is more relaxed which improves the birth process. Furthermore, working times for an unnecessary monitoring can be reduced. Adopting the system to be used in other species (e.g. horses, small ruminants) is planned.

Applications

- can be used by veterinarians, farmers and their employees
- non-invasive monitoring of newborns during the second stage of labor
- hoof cover can be used with different types of pulse oxymeters
- for use in different species

Advantages

- easy and fast attachment
- re-usable device
- wireless and non-invasive
- continuously monitoring of heart rate and oxygen saturation
- real-time data
- reliable information if intervention is necessary or not

State of development

- prototype of hoof cover available
- hoof cover was already tested in field

Next development steps on integrating the sensor technology into the hoof cover and further miniaturization are planned.

References

"Evaluation of a wireless pulse oximeter for measuring arterial oxygen saturation in newborn Holstein Friesian calves" by Kanz et al. (2018) in the Journal of Dairy Science (2018)"

IPR

EP 17168522 patent application

Options

Material Transfer Agreement, R&D cooperation, License agreement, Sale

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