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Potential of connected devices to optimize cattle reproduction

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Potential of connected devices to optimize cattle reproduction

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Estrus and calving are two major events of reproduction that benefit from connected devices because of their crucial importance in herd economics and the amount of time required for their detection. The objectives of this review are to: 1) provide an update on performances reached by sensor systems to detect estrus and calving time; 2) discuss current economic issues related to connected devices for the management of cattle reproduction; 3) propose perspectives for these devices. The main physiological parameters monitored separately or in combination by connected devices are the cow activity, body temperature and rumination or eating behavior. The combination of several indicators in one sensor may maximize the performances of estrus and calving detection. An effort remains to be made for the prediction of calvings that will require human assistance (dystocia). The main reasons to invest in connected devices are to optimize herd reproductive performances and reduce labor on farm. The economic benefit was evaluated for estrus detection and depends on the initial herd performances, herd size, labor cost and price of the equipment. Major issues associated with the use of automated sensor systems are the weight of financial investment, the lack of economic analysis and limited skills of the users to manage associated technologies. In the near future, connected devices may allow a precise phenotyping of reproductive and health