

LIVESTOCK PREDATION PREVENTION PROJECT (LPPP)

PREDATOR DETERRENT WITH CERES GPS EAR TAGS



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Monitoring the location and behavior of a herd/flock is a very important factor in understanding stresses that they are experiencing. Livestock mounted GPS technology and communications which locate the herd is now possible with your smartphone or computer. With this technology livestock producers should be able to better notice livestock cues indicative of predator stresses and be better able to manage and reduce predator losses. How does location relate to predation? Grazing livestock often travel meandering trails and rest in many areas and places. Initially their behavior may seem erratic and random. However, when a manager can monitor movements and behaviors, patterns start to appear. For example, cattle congregating in a small bluff of trees may be seeking refuge from the hot summer sun. However, if the same group remains in the same bluff during night time, without venturing for grazing or water it may mean that the herd is avoiding predators by bunching up. This behavior can be costly if the cows stop grazing and are fearful.

How does the Ceres GPS ear tag system work?

The ear tag combines multiple technologies to report location to the internet:

- Solar panel and small battery for a “permanent power supply”
- GPS receiver built in to determine location to a few metres
- Satellite transmitter to low earth orbit through Globalstar network
- Accelerometer which reports activity behavior from slow to fast
- Mortality alert if tag is motionless for 60 minutes or longer
- Tag hibernation will occur if sunlight and battery charge is deficient.



What's possible with this system?

- Location reporting to your computer or smartphone four times per day.
- “Geofencing” which is internet-delivered notification of the tag moving outside of specified pasture area. This could be a notification of fence failure, or theft of animal.
- Mortality alert will notify you if animal dies and does not move. This will also be used if a tag is torn out and lost from the ear. You will want to recover the tag because of its value and the four-year contract which is not transferable to new tags.



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Testing considerations:

1. Does the tag report regularly under all conditions such as while cows are under trees, or in cold weather?
2. Does the solar panel keep the battery adequately charged in all Manitoba conditions which can be a very short day length, or very long hair conditions due to breed and climate adaptations?
3. Is reporting four times a day enough information to determine predator harassment or to locate cows when you are planning a herd visit?
4. Does the accelerometer data from a few animals report enough data to determine if there is a predator pursuit or harassment?
5. Will the tag fall out of the ear or break when interacting with bale feeders, bunk line feeders, fences or trees?

Costs of Ceres GPS tags.

- Current January 2022 prices of tags are about \$420 a tag plus the cost of the applicator.
- Applicator for tags is an additional \$600
- Producers participating in the test will be provided with three tags which will be custom applied to an individual cow or a collar that can be placed on a cow.

- Producers may opt to place a tag on a dog collar to determine if this can be used as a livestock guardian dog management device.
- Producers will have access to tag location through a shared MBP portal. This portal will only be utilized by the three cooperators and administration for this RMP testing project only. Producers wanting individual and private portal access may purchase their own subscription.
- Cost levied to RMP cooperating producers will be subsidized 75% by the LPPP program and 25% funded by the producer. As such a producer receiving 3 tags will receive \$1260 in value of tags for \$315.
- The GPS tags have a four-year contract that is entirely prepaid. Accordingly, a \$420 tag which lasts for four years would have a cost of about \$875 per month at a full non-subsidized price.

Producers who use this RMP will be asked questions about the quality of data, and usefulness of the GPS ear tags. At the completion of the Livestock Predation Prevention Project a report will be written to help guide producers to the most effective predator reduction practices.

For more information of the Livestock Predation Prevention Project and other Risk Mitigation Practices please visit <https://mbbeef.ca/>



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