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## **Brief History of Tags**

Many people rely on tags as part of their daily business but are unaware of the detailed research, testing and systems required of tags in Canada.

The first iteration of the national identification (ID) program was initiated by the Canadian Cattle Identification Agency (CCIA) in 1998 for cattle and bison. This included the creation of a national information database, managed by CCIA. The program was voluntary and relied on machine-readable visual ear tags which were printed with a unique barcode.

In 2003, a technological advancement was adopted that would change the identification program in Canada. Radiofrequency identification (RFID) tags were introduced, allowing for more accurate readability without the requirement of line of sight. Tags could be covered in dirt or hair and were still readable with 100% accuracy.

CCIA instituted a testing program to ensure that any tag entering the system met the global standard for animal identification and that tags met a minimum level of performance. The Technical Advisory Committee (TAC) worked with industry and following the International Standards Organization (ISO) to create basic requirements for RFID tags and readers.

A testing standards document was developed. A local engineering laboratory was contracted to help develop procedures and apparatus to test tags for CCIA. It was determined that a more comprehensive, national testing program was required that included transparent and internationally accepted testing procedures and a testing laboratory with international credentials that would be respected by government, industry and manufacturers.

The tag approval process is transparent and thorough. All tags used in the National program must be tested and then approved by the Minister of Agriculture and are required to meet a strict conformance and performance criteria. All testing is based upon a technical document targeted toward conformance and performance of tags, known as the National Testing Framework. The document was created by the National Identification and Methodology Advisory Committee (NIDMAC), a joint government/ industry advisory group, and outlines in detail the technical requirements necessary for successful submission, testing and approval of tags for use in Canada.

The Framework details the laboratory test parameters and the field-testing criteria necessary for approval. The field test is at least a one-year retention test on live animals, the results need to meet the Framework Standard with 99% retention of all tags on test over one year, with a 95% confidence level. All tags are required to be certified by the International Committee on Animal Recording (ICAR) and tested by CCIA in an ICAR approved testing facility. Currently, there is only one lab that meets criteria to test indicators against the Framework standards, and that lab is in Germany.

### Destron eTag

A recent example of this process is the upgraded and improved version of the Destron e-tag. The Destron Fearing DMR has been improved to include a fully over molded device for better moisture resistance. Instead of a metal ring, the DMR has a solid plastic molded bobbin to insure retention, plus improved locking mechanism for greater retention and longevity.



### Shearwell Metal RFID Tag

Tags have undergone improvements since the program began or at least provide more options for producers. The Shearwell one piece, stainless steel RFID cattle tag is the world's first metal tag of its kind, which has been frequently requested by producers for years. Incorporating RFID (ISO 11784/11785), with the CCIA number laser printed to the exterior. These are steel wrap-around tags placed in the top of the ear, with no edges to catch on twine or fencing. The microchip is over molded in a plastic insert so readability and read range of the transponder is never compromised.



In 2010, CCIA in conjunction with a large consulting firm did an analysis of the tag/animal data and determined changes were required to how tag data was collected to improve the integrity of system. As a result, the supply chain was optimized by moving to a single distributor. CCIA simplified the system to be manufacturer-distributor-producer, which lowered the overall cost of tags across the country and provided better selection of approved tags to all producers.

As a responsible administrator, CCIA is technology neutral and is open to any and all technology solutions that can benefit the system at a lower cost. The whole purpose of an identification system is to easily identify animals for disease traceback while offering a convenient system for users.