

Canadian
**Cattle
Identification
Agency**



Identification Technology in Canada



Canadian Cattle Identification Agency



Topics for discussion

- Program Overview
- Technology Transition
- Why RFID?
- CCIA Standards
- Success of RFID





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Program Overview

The Canadian Cattle Identification Program is an industry initiated and led animal ID and tracking system designed for the efficient and effective traceback of animal disease and food safety issues.



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Official Implementation

- **January 1 2001** - Cattle to be tagged by the time they leave their herd of origin.
Enforcement - extension and notification.
- **July 1 2002** – Full implementation
Enforcement - monetary penalties began



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Being Led by...

The Canadian Livestock Industry:

- **Board of Directors**
- **Ex-Officio**
- **Committees**





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Initial Tag Technology & Criteria

- **One-tag/Minimal Size**
- **95% lifetime retention**
- **Visual read/Barcode**
- **ISO #s/Country Code**
- **Tamper evident**
- **Required at first point of sale**

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CCIA Approved Tags



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



P



Q



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Post BSE...

- **Enhanced IS/database capacity and capabilities**
 - **age verification**
 - **full animal movement tracking**
 - **premise ID**
 - **group lot**
 - **zoning**
 - **value added**
- **Ensure complete automation and electronic transfer of records**
- **Facilitate Full Food Chain Response**
- **Enhanced Enforcement/Regulations**
- **Multi-Species integrated system**
- **Harmonization of existing systems**



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Issues with Barcode Tag Technology

- imports and exports
- tags - colors, retention, readability
- packing plant issues
- enforcement
- value-added
- international standards

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Transition To RFID

- ✓ Implementation of RFID began on January 01, 2005
- ✓ As of September 1, 2006 all cattle leaving their herd of origin must be tagged with a CCIA approved RFID tag.





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Why Low Frequency? (134.2 KHz)

- The use of RFID in the identification animals is governed by 2 international standards
 - ISO 11784 and ISO 11785
- Commercially available to the livestock industry
- Internationally accepted for livestock ID
- Read range - cm to 2 meters
- Penetrates tissue and moisture - not as affected by surrounding metals
- 1 transponder read at a time - anti collision under development
- HDX and FDX



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CCIA RFID Standards

- The specifications for RFID transponder (ear tag) technology is in accordance with the International Standards Organization (ISO) and Standards Council of Canada (SCC).
- All transponder models submitted to the CCIA must be certified by ICAR for conformance under ISO 11784 and 11785.
- Must meet CCIA RFID lab and field trial performance standards

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ISO Code Structure

- Reads Electronically as:

LA 00000 0 124 0002999999999



Animal Reserved Flag Country Unique ID Number





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Examples of CCIA RFID Transponder Standards

- **Visual**
 - RFID transponder must have the national ID logo on the front facing exposed portion of the tag
- **Mechanical**
 - RFID transponders must be designed for single use and tamper evident
 - Maximum insertion force and minimum axial force must be met
- **Physical**
 - Must NOT be harmful to the animal, damage the hide or cause contamination of meat



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- **Electrical**
 - Resident frequency of the transponder must be within $134.2\text{kHz} \pm 3\text{kHz}$
- **Readability**
 - Must be easily and readily readable with encoded data following the ISO 11784 Code Structure
- **Retention (Field Trial)**
 - Tested for minimum retention under controlled conditions
- **Environmental**
 - Must endure rigors of the environment (-31°F to $+104^{\circ}\text{F}$)

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CCIA Approved RFID Tags



Allflex FDX



Allflex HDX



Nedap



Ketchum



Y-Tag



Destron



Zee Tags



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Example of Standards for Reader Verification

- All RFID readers must be capable of reading both HDX and FDX transponders
- Must be capable of meeting ISO standards of 11785 and must meet Industry Canada standards for Radio Frequency Transmission (RSS-210)
- Must meet interface requirements
 - audible/visible signal
 - display number
 - capable of communicating to external devices

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Elisphere



Allflex Stick



Destron Livestock Paddle



Tag Tracker Series

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Other Considerations

- Color
- Ear Placement
- Price





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CCIA Achievements

- ❖ Full implementation July 01, 2002
- ❖ Proven successful industry/government partnership
- ❖ Industry Sustainable
- ❖ National Standards
- ❖ 40 million unique numbers allocated
150 million events
- ❖ Entire traceback system < \$4M
- ❖ 97-100% program compliance
- ❖ Invaluable assistance during BSE Investigations
- ❖ Multi-species
- ❖ Value-Added services
- ❖ International recognition/harmonization

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For more information please contact:

- ❖ **CCIA**
- ❖ Phone 1-877-909-BEEF (2333)
- ❖ Fax (403) 275-1668
- ❖ Website: www.canadaid.ca

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