



**Extensive management of a beef
breeding farm based on RFID
technology in Argentina**

Argentina



POPULATION: 40 million

TERRITORY: almost 3 times Spain

LIVESTOCK: 55 million heads

PRODUCTION: 3 million tonnes

Meat Consumption: Kg 110 per capita

Beef Consumption: Kg 70 per capita

Total DOMESTIC CONSUMPTION:
2,5 million tonnes

EXPORT: 550,000 tonnes

NANOTRACK Work Programme.

To test the use of various forms of electronic identification in extensive farming conditions.

- Intraruminal boluses (52 gr) in calves implanted within 15 days from birth.
- Loss levels measurement in the various forms of presentations: tags and boluses
- Reading capacity in both solutions

NANOTRACK Work Programme.

To automate the beef farm management by the use of Low Frequency Nanotechnologies.

- Adapt the work protocol to the local conditions of extensive farming.
- No electricity supply was available at the farm, which used car batteries as electric power source
- Wireless Connections of the various reading devices.
- Specific breeding and management software was developed for on field data capture and key data querying



Angus calves
Kg 26 average birth weight

**Manual bolus
implantation.**



RFiD- Intraruminal bolus implantation in Angus calves

heads	Age at implantation
17	More than 20 days
19	between 11 - 20 days
27	between 2 - 10 days
39	First day

No problems during implantation.

No losses

Electronic ear tags.

No Losses (248 implanted)



FIXED READER

Connection with weighing system

Automatic data transmission via bluetooth



2,387 readings in 13 different occasions in a year round



HAND READER



Hand reader... no more need for pen and paper



Able to record and keep data of:

Deliveries/Births/Aborts/Entries/Exits/Deaths/Medical Treatments



1092 readings in a year round

COSTS of IDENTIFICATION SYSTEM

	Cost	Depre ciation	Annual cost
Fixed costs for RFID hardware			
Hand reader	850	5	170
Fixed reader	1950	10	195
Scale	1450	15	97
total Fixed costs / year			462

Single Identification

1 electronic ear tag Eur 1.5 euro + 1 visual ear tag Eur 0.8

COSTS of IDENTIFICATION SYSTEM

Average size farm in Argentina: 210 heads heard

Weaning/year: 85% - new cattle making/year: 20%

Calf Weaning weight at sale: Kg 160

Per cow average calf production: Kg 136/year

Calf live weight sale price: US\$ 1/Kg.

SINGLE COW TOTAL COST/year

equals Kg 5.93 of calf = 4.37% of cow's production

Cost of electronic identification for an average heard of 1,000 heads:

COST per cow

Kg 3.76 kg of calf = 2.77% of annual per cow production

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CONCLUSIONS

- **RFID based livestock management and identification is now ready for farming situation in extreme rural conditions.**
- **It is possible to full automate the data management of heard, farm and land.**
- **The RFID based system can make available a large and precise data base for:**
 - **Farm management**
 - **Livestock traceability**

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COLDIRETTI



**Enjoy your traceable
asado !!!**



Thank you for your attention