Identification and registration of cattle in the Czech Republic

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ICAR THE GLOBAL STANDARD FOR LIVESTOCK DATA

ICAR CONFERENCE & IDF/ISO ANALYTICAL WEEK 2019 PRAGUE CZECH REPUBLIC

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Users, organisations and bodies involved in the identification and registration system

Ministry of Agriculture

Administrator

Czech Moravian Breeders' Corporation, Inc.

Delegated organisation for technical keeping

Czech Breeding Inspection

Breeder inspections

State Veterinary Office

Breeder inspections

Breeders and companies

Data access to the farmer portal

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Overview: identification and registration

Identification and registration

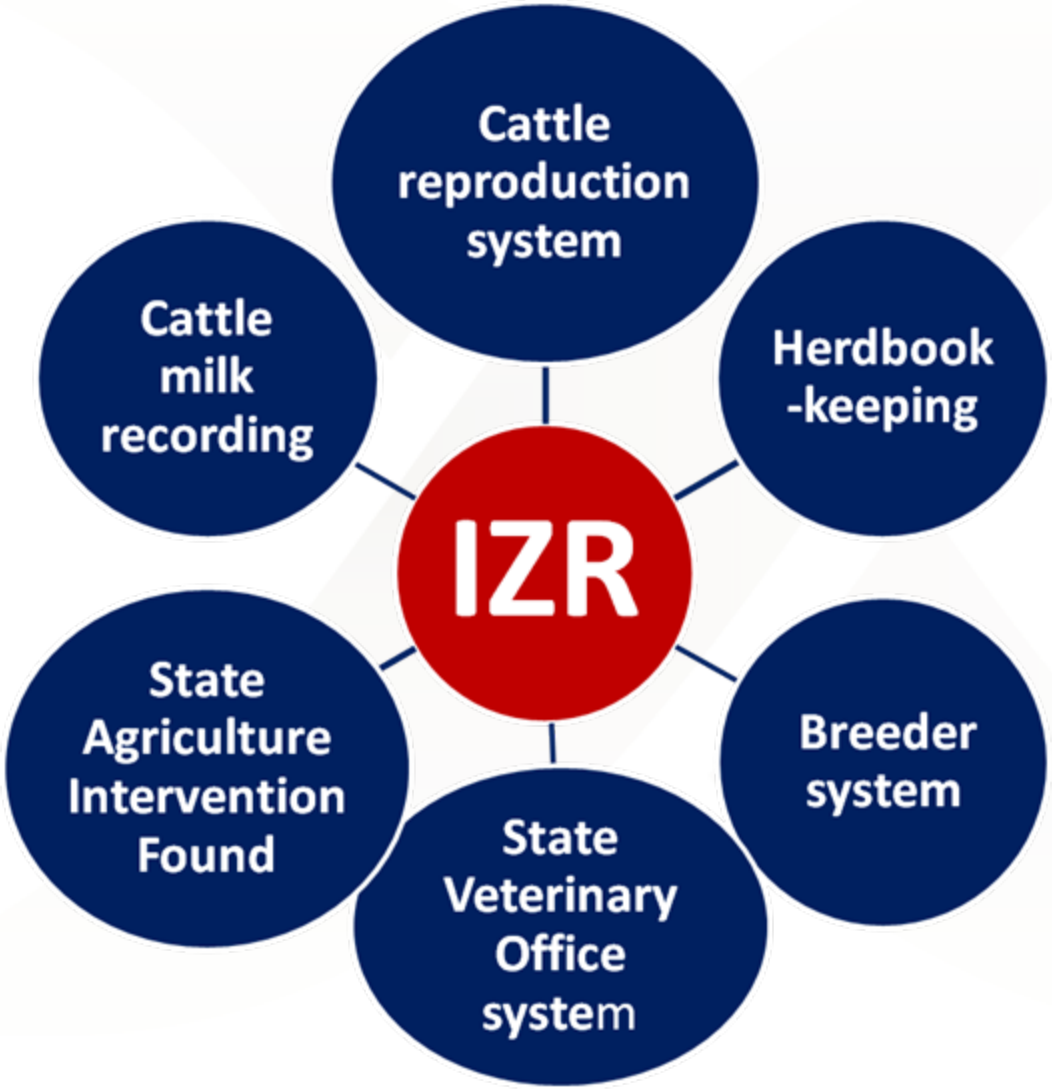
- The Czech Moravian Breeders' Corporation, Inc. oversees all processes related to identification and registration
- Authorised by the Ministry of Agriculture

- Integrated Agriculture Register (IZR)
- IZR is a system used to identify and register livestock animals

- The Czech Moravian Breeders' Corporation uses the IZR system to ensure routine aspects of identification and registration are met
- Engages in consultancy, testing and development of IZR and its farmer portal

Connection of Integrated Agriculture Register with other systems

Web services are used for data transfer



IZR Architecture

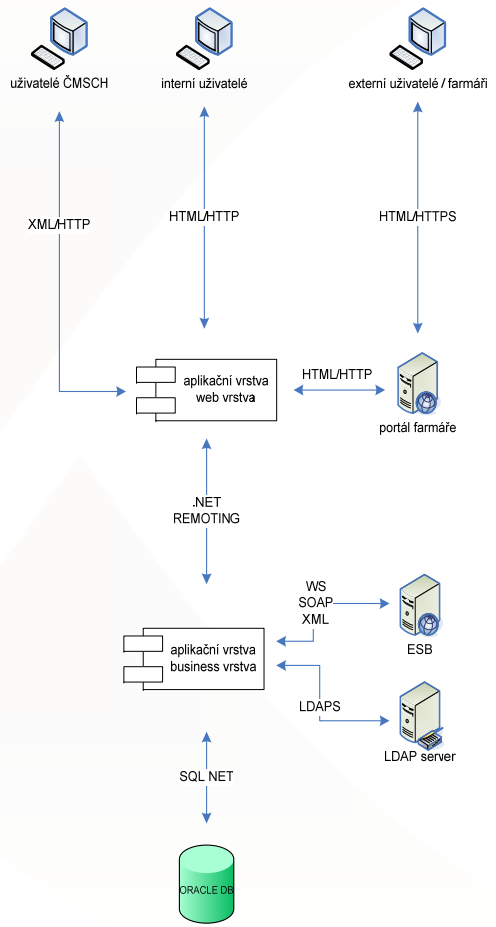
- The IZR system is a web application that meets the following requirements:

➢ High accessibility of 365x7x24 with minimal accessibility at 98%

➢ System security – distinguishes internet and internet and intranet users at the application layer level

IZR Architecture

- System based on a three-layer architecture
- Presentation layer
- Application layer: servers on the Microsoft .NET platform Framework runs in an MS Windows Server environment
- Data layer: Oracle Database 11g system



IZR System Testing

- Testing was performed to compare outputs with the previous identification and registration system
- Outputs:
- Documents from the cattle identification and registration database
- Error messages = reasons for events not being recorded in the database
- Inventory of animal holding numbers
- Data transfer (fertility, milk recording, etc.) to Czech Moravian Breeders Corporation systems

Development of the Integrated Agriculture Register

- Automated data processing is routinely used for milk recording of cattle and performance recording of other livestock in the CR
- Automated data processing was introduced in the 1960s
- 2006 – work begins on updating the system

➢ Detailed analysis

➢ Implementation

- 01/2008 – migration of data and opening of modules for routine practice
- 06/2009 – all modules available for routine practice

Further development of the Integrated Agriculture Register

- 01/2010 – breeders' module launched
- 02/2011 – online data processing of identification and registration reports
- 2015 – breeders' module allows users to request welfare subsidies
- 2016 – 2018 – breeders' module updated

Animal registration

The breeder sends the report, including eartag number, birth and import details

The report is then processed and reviewed:

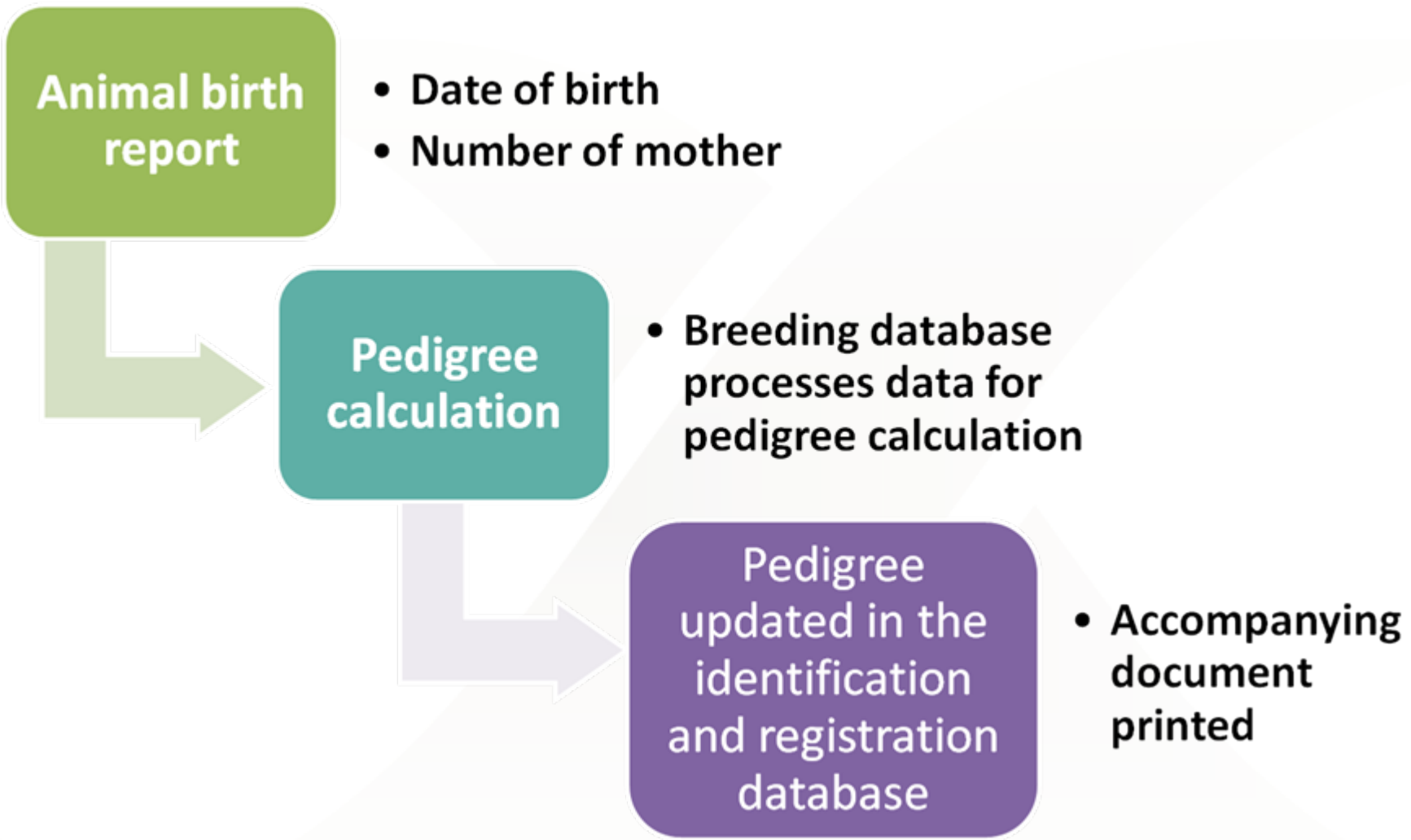
- *Eartag data reviewed for accuracy*
- *Pedigree calculated*
- *Animal location verified*

Results are sent to the breeders:

- *Successful registration*
- *Unsuccessful registration (with reasons given in the report)*

Communication by standard post or e-mail

Pedigree calculation



Pedigree calculation

- **Birth report – all data, including details on natural mating where relevant, sent to breeding database for pedigree calculation**

- **Pedigree calculation**

- Pedigree calculated in the breeder database from identification and registration database + data from the database with reproduction in cattle (artificial insemination, ET)

- **Calculation results returned to the identification and registration database, including:**

➢ Line and register of father
➢ Breed
➢ Donor number (in the case of ET)

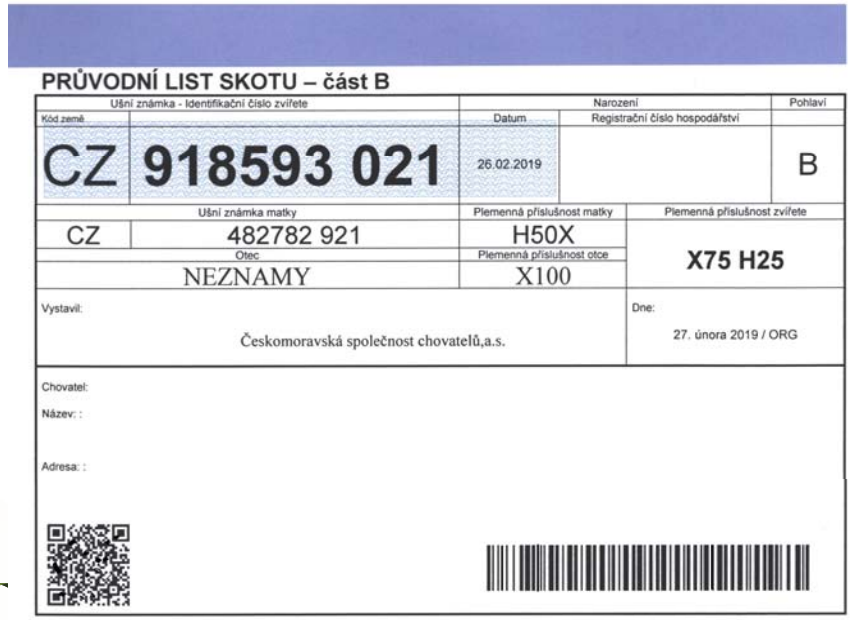
- **Pedigree recorded in the identification and registration database**

➢ Pedigree calculated
➢ System generates accompanying documents on the animal
➢ Documents printed

PLS – accompanying document

- **Official document**
- **Includes protection against falsification**

PLS of bull



PRŮVODNÍ LIST SKOTU – část B

Ušní známka - Identifikační číslo zvířete		Narození		Pohlaví
Kód země		Datum	Registrační číslo hospodářství	
CZ	918593 021	26.02.2019		B

Ušní známka matky		Plemenná příslušnost matky	Plemenná příslušnost zvířete
CZ	482782 921	H50X	X75 H25
Otec		Plemenná příslušnost otce	
NEZNAMY		X100	

Vystavil: Českomoravská společnost chovatelů,a.s.

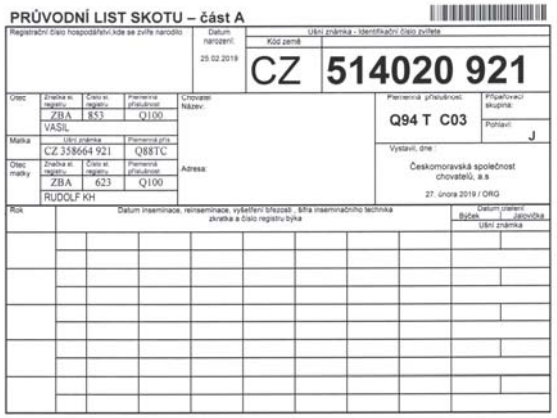
Dne: 27. února 2019 / ORG

Chovatel:

Název: :

Adresa: :

PLS of heifer and cow



PRŮVODNÍ LIST SKOTU – část A

Kód země: CZ 514020 921

Datum narození: 25.02.2019

Otec: ZBA 853 Q100 VASIL

Matka: CZ 358664 921 Q88TC

Otec matky: ZBA 623 Q100 RUDOLF KH

Plemenná příslušnost: Q94 T C03

Pohlaví: J

Vystavil, dne: Českomoravská společnost chovatelů, a.s. 27. února 2019 / ORG

Rok | Datum inseminace, reinseminace, vyšetření březosti, šifra inseminačního technika zkratka a číslo registru býka | Datum narození Býček / Jalovička | Ušní známka

PRŮVODNÍ LIST SKOTU – část B

Kód země: CZ 514020 921

Datum narození: 25.02.2019

Registrační číslo hospodářství:

Pohlaví: J

Ušní známka matky: CZ 358664 921

Plemenná příslušnost matky: Q88TC

Plemenná příslušnost zvířete: Q94 T C03

Otec: ZBA-853

Plemenná příslušnost otce: Q100

Vystavil: Českomoravská společnost chovatelů,a.s.

Dne: 27. února 2019 / ORG

Chovatel:

Název:

Adresa:

PLS – reverse side of document

Přemísťování		
Datum	Registrační číslo hospodářství, obchodníka, provozovny jatek, provozovny asanačního ústavu	Podpis
	číslo / název	

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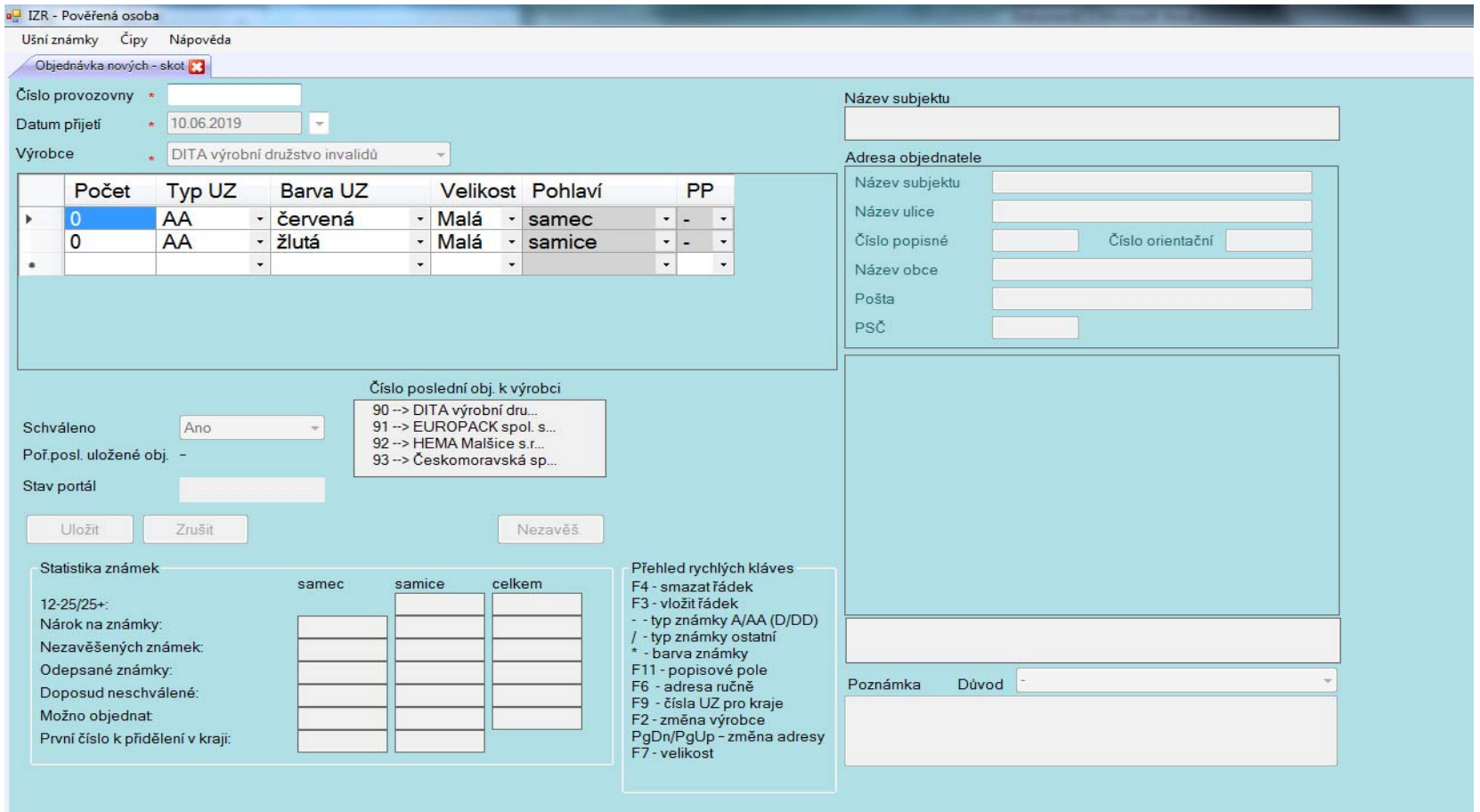
Protective elements

- Printing below eartag number
- QR includes eartag number, date of birth, breed, breed composition, eartag of mother, line-register of father
- Bar code includes eartag number
- On the reverse side – water mark with ICAR logo

Eartag ordering

- **<u>Eartags (incl. duplicates) can be ordered on the IZR system</u>**
- Breeders can only request eartags for animals registered in the ordering system
- Breeders can only order duplicates for animals in a holding

Examples of eartag/duplicate ordering screens



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Czech Cattle ID Structure

CZ999999999KKK is the ID number unique to each cow

- CZ – country code
- 999999999 – eartag order number
- KKK – sex and the region ID of the animal's birth
- Example

  CZ000141013**962** – female

  CZ000645137**062** – male

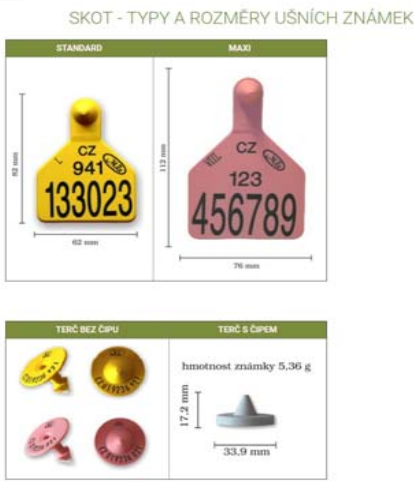
  62 – South Moravian region

Cattle eartag manufacturers certified in the Czech Republic

- Czech Moravian Breeders' Corporation, Inc. prints and provides Datamars eartags
- HEMA MALSICE provides Allflex eartags
- DITA – a disabled community production cooperative
- EUROPACK, Ltd.

Method used for animal identification

- ***Plastic eartags***
- ***RFID***
- ***The farm ID incorporates an additional tool linked to the official ID***



What checks are carried out to ensure correct animal identification and avoid duplication?

- Routine checks
- Eartag issue procedure
- The Czech Moravian Breeders' Corporation, Inc. (CMBC) oversees a system of supervision and quality control, with all inspectors serving as employees of the CMBC
- State supervision
- **SNP technology used, replaced by STR during the transition period**
- **DNA analysis and parentage verification are used for:**
  - Breeders
  - Czech Breeding Inspection – checks and supervision
  - Performance recording, herdbooks
  - Bulls, mothers of bulls, fathers of mothers
  - Heifer pedigree – harem mating
- Pedigree verification applies to all animals born and recorded within the system
- Plausibility checks are implemented for reproduction and fertility

Sample identification

- **Bar codes for identifying samples (100%)**
- **Electronic data capture (PDA)**

Conclusion

- This presentation summarises the key aspects of identification in the Czech Republic
- The challenge for ICAR going forward will be to improve automation in all areas, but particularly with regard to identification of big herds (1,000 – 2,000 cows)
- ICAR working groups must continue to collaborate on existing multidisciplinary approaches to automation
- ICAR is responsible for overseeing RFID testing and ensuring the quality of identification processes and tools








Thank you for you attention!

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