Food and Agriculture Organization of the United Nations

SUSTAINABLE DEVELOPMENT GOALS

French experience about digitalization in Milk Recording

Thursday, 14 November 2024

ICAR THE GLOBAL STANDARD FOR LIVESTOCK DATA

Xavier BOURRIGAN - David SAUNIER

French Livestock Institute in collaboration with Eliance

ICAR Certificate of Quality

Granted to France in 2024

ICAR

THE GLOBAL STANDARD FOR LIVESTOCK DATA

Arthur van Schendelstraat 650, 3511 MJ Utrecht, Netherlands

CERTIFICATE OF QUALITY

France Génétique Elevage

- Animal identification in cattle and in other species
- Milk recording in cattle and in other species
- Beef recording in cattle
- Meat recording in other species
- Genetic evaluation in dairy cattle, beef cattle and other species
- Data processing
- Milk laboratory analysis
- DNA laboratory analysis

Marie-Agnes Mourot

Marie-Agnes Mourot
ICAR CE

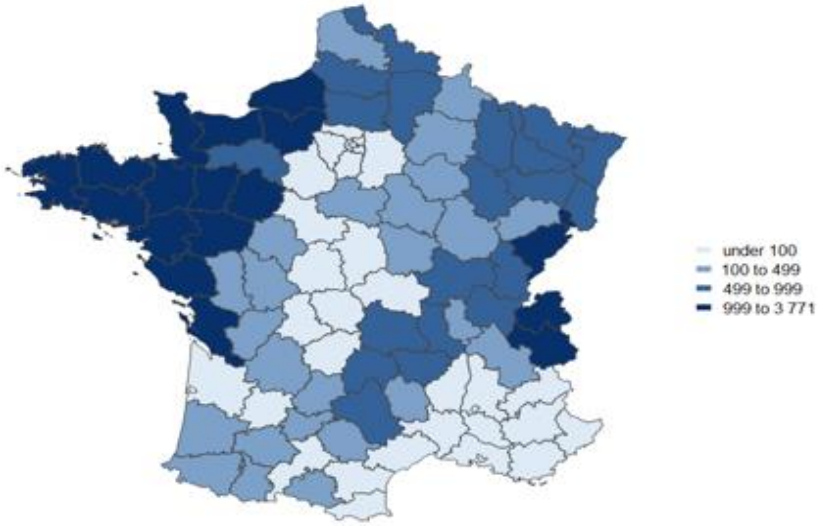
Utrecht, 25 July 2024
Certificate number: 2024/08
Valid up-to: July 2029

French context in dairy cattle

Some key figures in 2023

France within Europe

France - Location of dairy farms in Milk Recording



Dairy cattle Milk Production

23.4 billion liters - Second place in Europe

3.4 million dairy cows - 46.000 farmers

80 cows/farm - Milk price 0.46 €/liter

63% Holstein breed - 19% of AMS farms

Dairy cattle Milk Recording

2.0 million dairy cows - 26.000 farmers

9.000 kg/cow - 4.1% fat - 3.3% protein

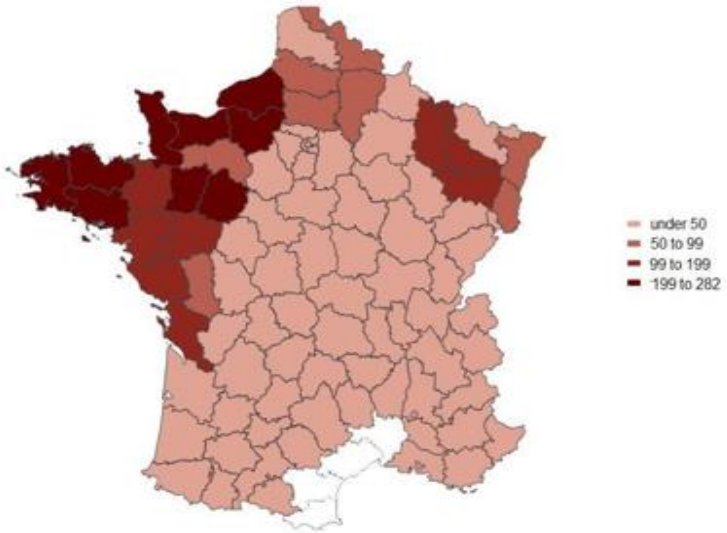
46 MRO's - A total of 18 million data recorded in GIS

14% of AMS farms in Official Milk Recording

Challenge in Official Milk Recording

Evolution of Automatic Milking Systems farms in France

Number of AMS farms in Milk Recording - **2013**

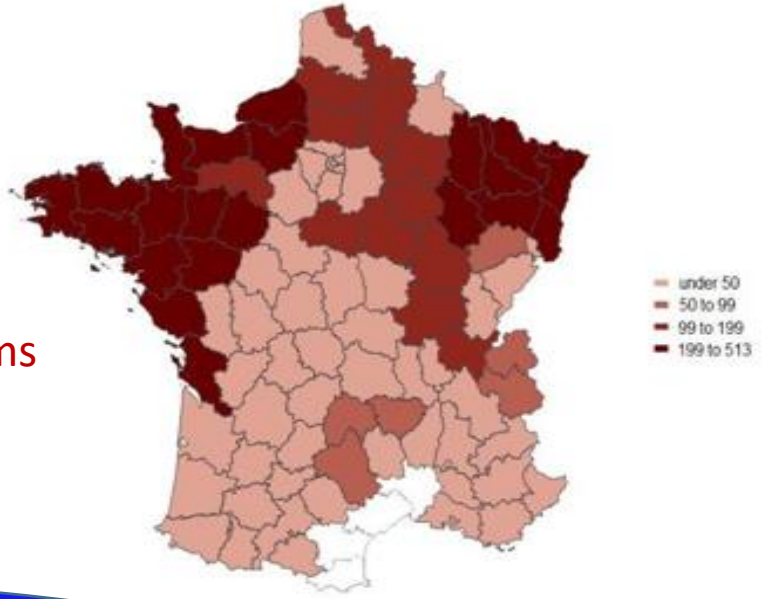


From 2.000 to 3.400 AMS farms

Stable since last 3 years…

Many data, information,…

Number of AMS farms in Milk Recording - **2023**



The main challenge for French MRO's is to keep AMS farmers in genetic evaluation, dairy herd improvement and to propose new services in collaboration with ICAR support, manufacturers

Current process in Milk Recording

Example in AMS farms

➢ A collaboration between MRO's and Manufacturers to define Standard Operating Procedures,…

Robot	Sampling	Data Processing	Process of back Results
Electronic Milk Meter SOP depending model, version,…of AMS	**Automatic Milking Samplers** Mainly Ori-Collector Possibilities: 2 samples and + 1 sample with correction	**Management software** to integrate data files from AMS Robots and milk Labs To calculate official 24h results Milk yields, Fat%, Protein%, SCC Other (urea, lactose, ketosis, spectral data,…)	**Recorded in Genetic Information System Official Results** Farmers Genetic Evaluation Technicians Advisory tools KPI's

Strategy, priorities to define new services

About collecting, using sensors data from connected farms

- Think about the possibility of using data from sensors, dairy farms connected for genetic evaluation, advice **in accordance with ICAR Guidelines and manufacturers**
- Imagine an innovative(s) solution(s) **to improve milk recording process, data exchange (import/export)** and sharing more information with farmers
- Analyse and **standardize data source** for taking into account differences between devices, manufacturers

→ One way: **the digitalization concept** by using new technologies like Web tools, Application Programming Interface, Artificial Intelligence,….

In France, an innovative solution to exchange sensors data

Creation of a web platform: DataHUB, heart of data exchange

Medria SOLUTIONS
LELY
mozaë
GEA DairyNet
SenseHub™
FULLSENSE
DeLaval
SAC
Fullwood Packo
BouMatic
afimilk
CLOUD
AUTOMATE
dataHUB 360°
ECEL
ELIANCE
Des éleveurs. Une ambition.
Network

Connected with 6 AMS manufacturers, 4 Activities Sensors manufacturers

Bidirectional animal data exchange solution
From Cloud
From Farmer's PC
Import data, *frequency every 10 minutes*
Export data, *frequency 1 or 4 times per day*
Possibility to monitor *the dataflow, check new data imported*
And to manage *multi-automates for each farm*

Data and volume exchanged

By using DataHUB platform on dairy farms

Data exchanged

By import, concerns
Herd inventory, events (calving date, IA,…), official milk recording data,…
(Avoid to enter information twice)

By export, concerns (each cow)
Milk weight
Fat%, Protein%, SCC (unofficial status)
Body weight
Milking speed
Milk temperature
Teat coordinates
Health events,… (recorded by farmers)
Cow Activity, rumination data

dataHUB 360°

9.200 Automates connected

Automates	%
AMS Robots	54%
Sensors	34%
Milking Parlours	8%
Feeding Stations	4%

Kind of services offered

9 services and tools connected to DataHUB platform

For

Genetic evaluation

Daily data concept to improve lactation accuracy level,…

Dairy Herd Improvement, Advice

Management tools to forecast milk production,…

Monitoring milk meters,…

Computerized solutions to check the accuracy of electronic milk meters,…

Value of tools offered by DataHUB in accordance with ICAR

Examples in Official Milk Recording

ICAR

Automation of data processing in Milk Recording from AMS files and milk labs results (to improve back results)

- Plausibility checks (link animal ID-milk weight-vial number,…)
- 24h milk yields calculation from last 96 hours
- Peeters&Galesloot method for only one sample
- Automatic reports for farmers and data transfer to National Genetic Informatic System

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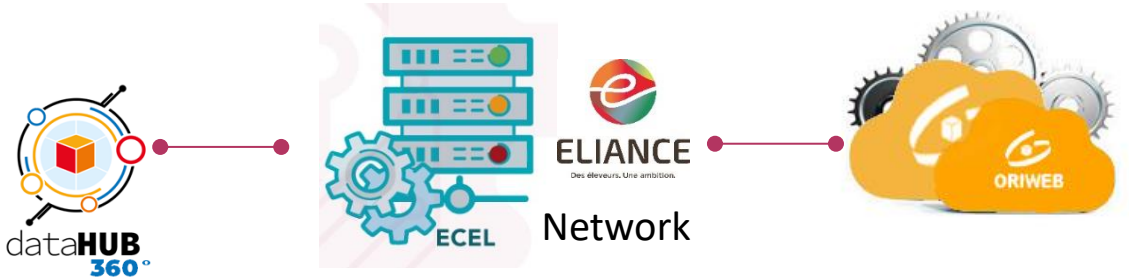

Implementation of Daily data service (to improve lactation results)

- Flagging all initial data (official and unofficial), data traceability
- Integration of 24h milk yields between two test-day, 24h in line analysis (unofficial results used only for management)
- Data transfer to National Genetic Information System

Opportunities in the future

About sensors data, new traits

- The number of dairy farms connected, fitted with robots,…which use new data, sensors data,… will increase each year
- According countries, in European Union for example, there are new regulation **about farmer's consent**, data protection,…
- In this context, **the challenge for Milk Recording and Livestock Organizations** is to collect new data, to propose new services for the farmers in accordance with **Guidelines and ICAR Standard, in collaboration with manufacturers**
- **The valuation of new traits** from health (udder traits,…), conformation (body condition score,…) is underway for management and genetic evaluation in livestock organization in the world
- Use **new technologies, digitalization concept** (Web platform, Artificial Intelligence, e-learning,…) is a way for better data collecting and processing

Conclusion

Using sensors data from robots, milking parlours connected,… represents an opportunity to enhance performance and efficiency on dairy farms!

Thank you

FAO