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Milk recording in sheep and goat: state of the art using the data from the ICAR on-line yearly survey

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Technical Session “New developments in Sheep, Goat and Camelids within ICAR”

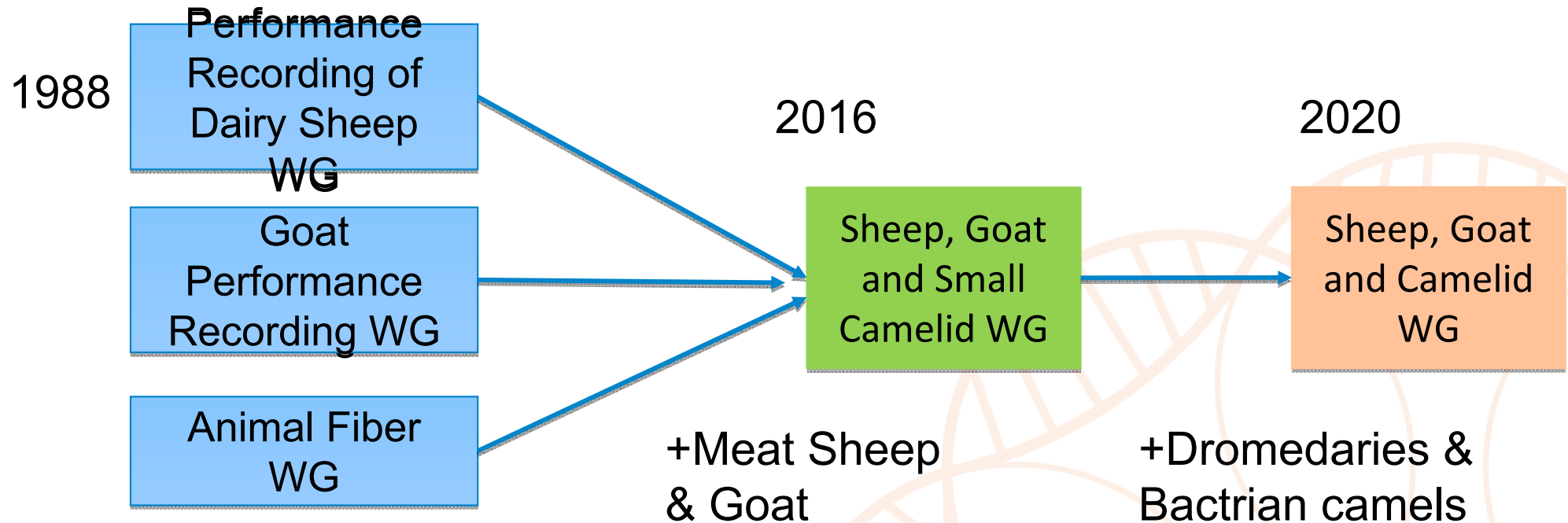
Montréal, Canada - Thursday, June 2, 2022 - 9:00-10:00



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ICAR Working Group on sheep goat and camelid: brief elements of history



Terms of reference of the SGC-WG: one of the objectives is to conduct and report the results of **periodic international surveys** on sheep, goat and camelid performance recording and genetic evaluation.

Surveys on dairy sheep and goat

1988 : 1st survey presented in Oslo
(dairy sheep)

1988 to 2004: 7 “manual” surveys
(dairy sheep)

199x to 2006: several “manual” surveys
(goats)

From 2006 (dairy sheep) and 2008 (goat):
on-line database that can be updated on a
yearly basis.

Since 2021: new platform for collecting data,
allowing easy extractions and statistics

State of the art in dairy
sheep and goat
recording

Overview on how
countries follow the
recommendations of the
guidelines



Topics included in the surveys on dairy sheep and goats

1a - Milk recording and management of the lactation

1b - Methods of milk recording

2a - Type of lactation calculation for milk yield

2b - Milk yield result

3 - Optional tests for milk composition

4 - Recording of non-milking traits

5 - Milk recording equipment used in case of machine milking

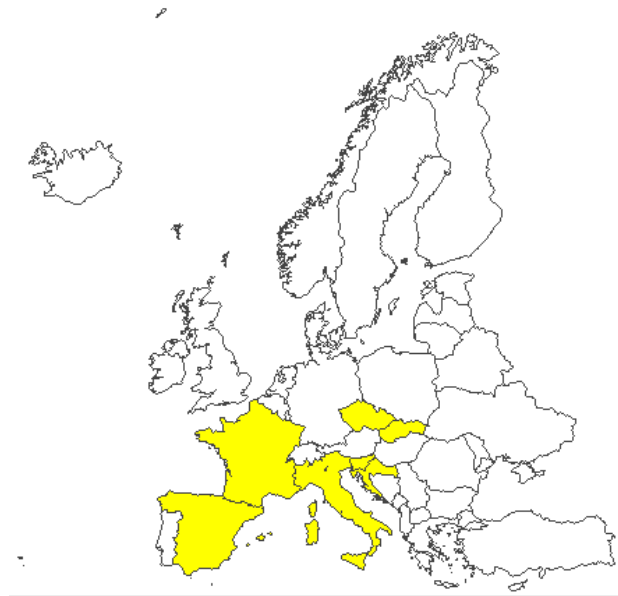
6 - Breeding program using artificial insemination

7 - Molecular information

This presentation focus on a part of these topics.

Sheep and goat survey: which countries submit data?

Dairy
sheep



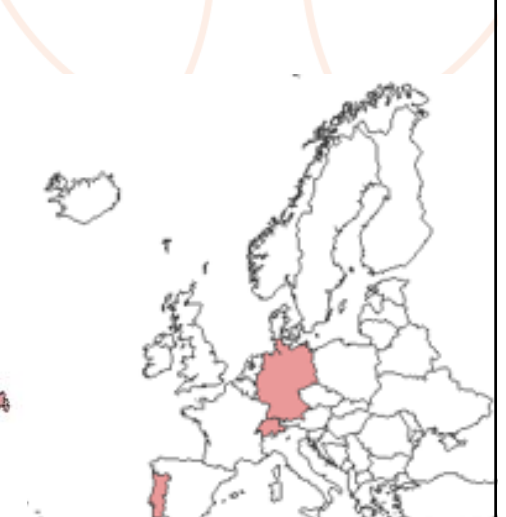
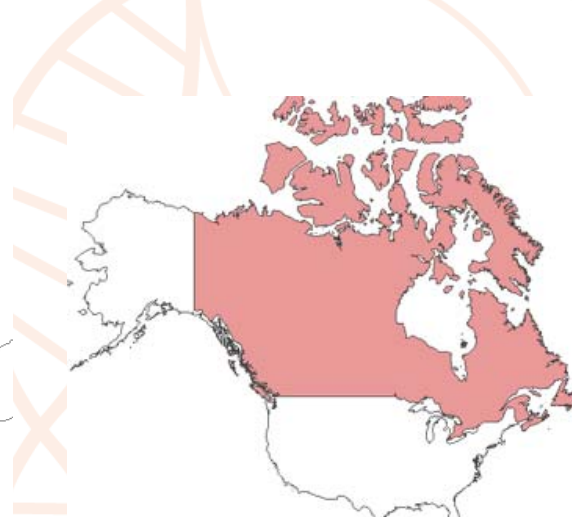
Recent submissions (2020-21)



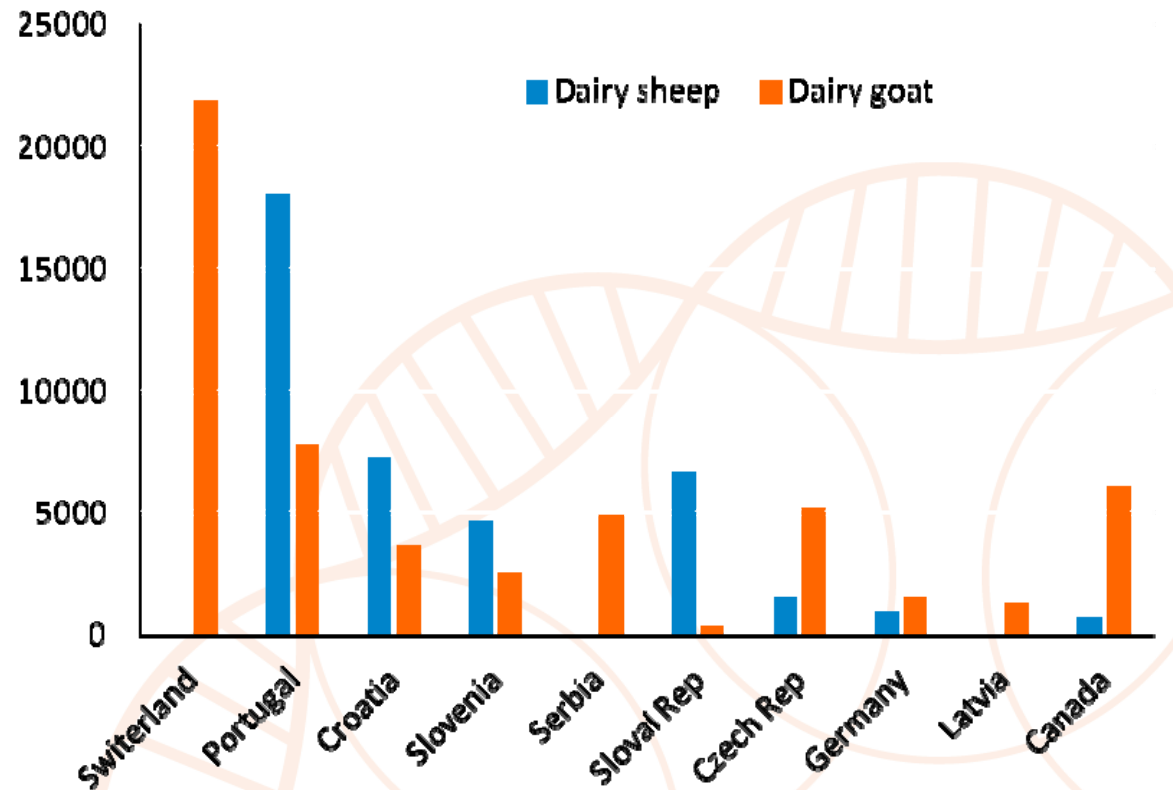
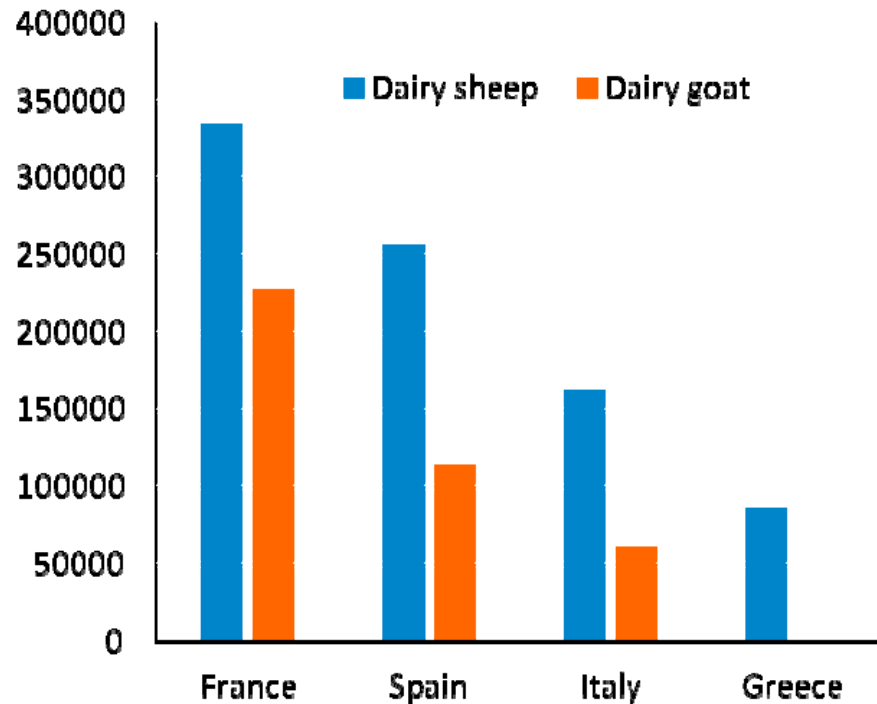
Other submissions (<2020)



Dairy
goats



Sheep and goat in ICAR countries: number of animal in official milk recording

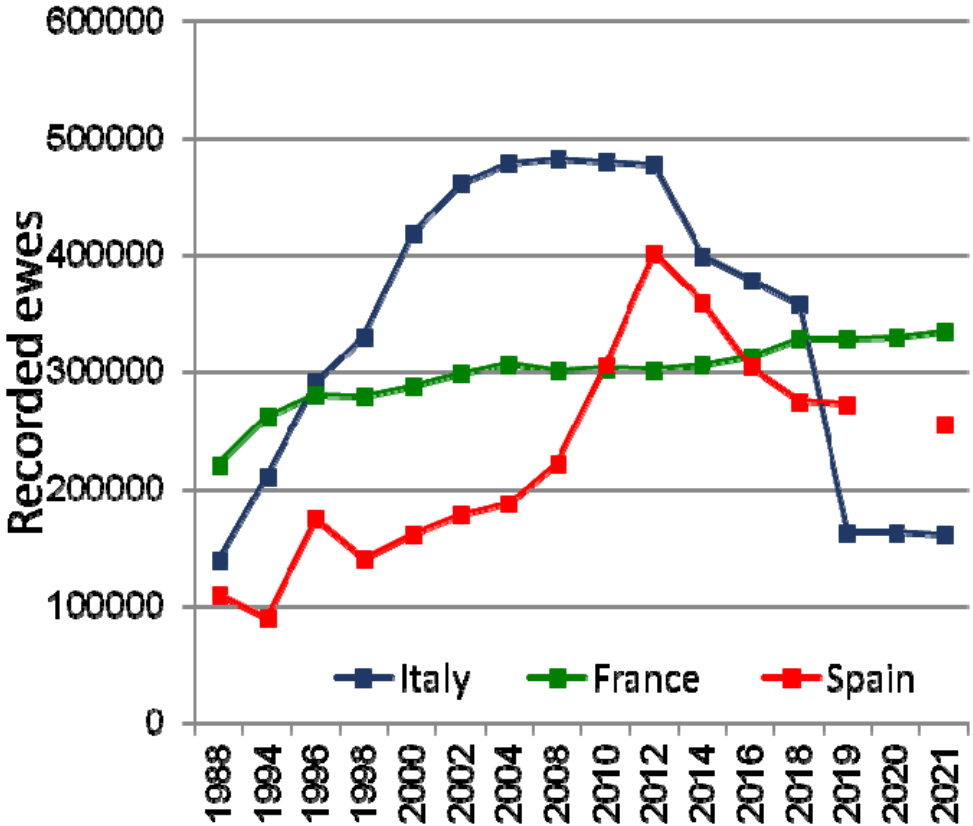


- 877,896 sheep & 457,324 goats of which 86% and 88% (respectively in sheep and goats) in 3 countries (France, Spain and Italy).
- 8.5% of sheep and 9.6% of goats are recorded

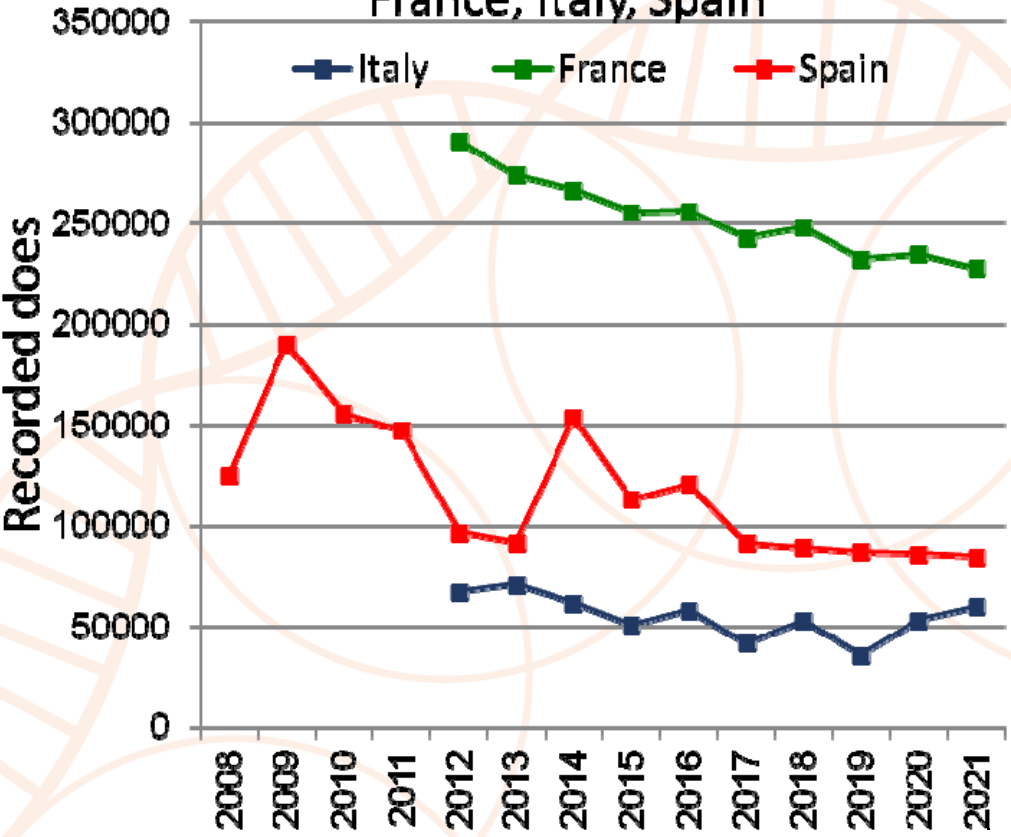
- In addition to official milk recording, France has 553,836 dairy sheep in D method

Sheep and goat milk recording in ICAR countries: evolution by countries (France / Italy / Spain)

Evolution of recorded dairy sheep in France, Italy, Spain



Evolution of recorded dairy goat in France, Italy, Spain



Main breeds

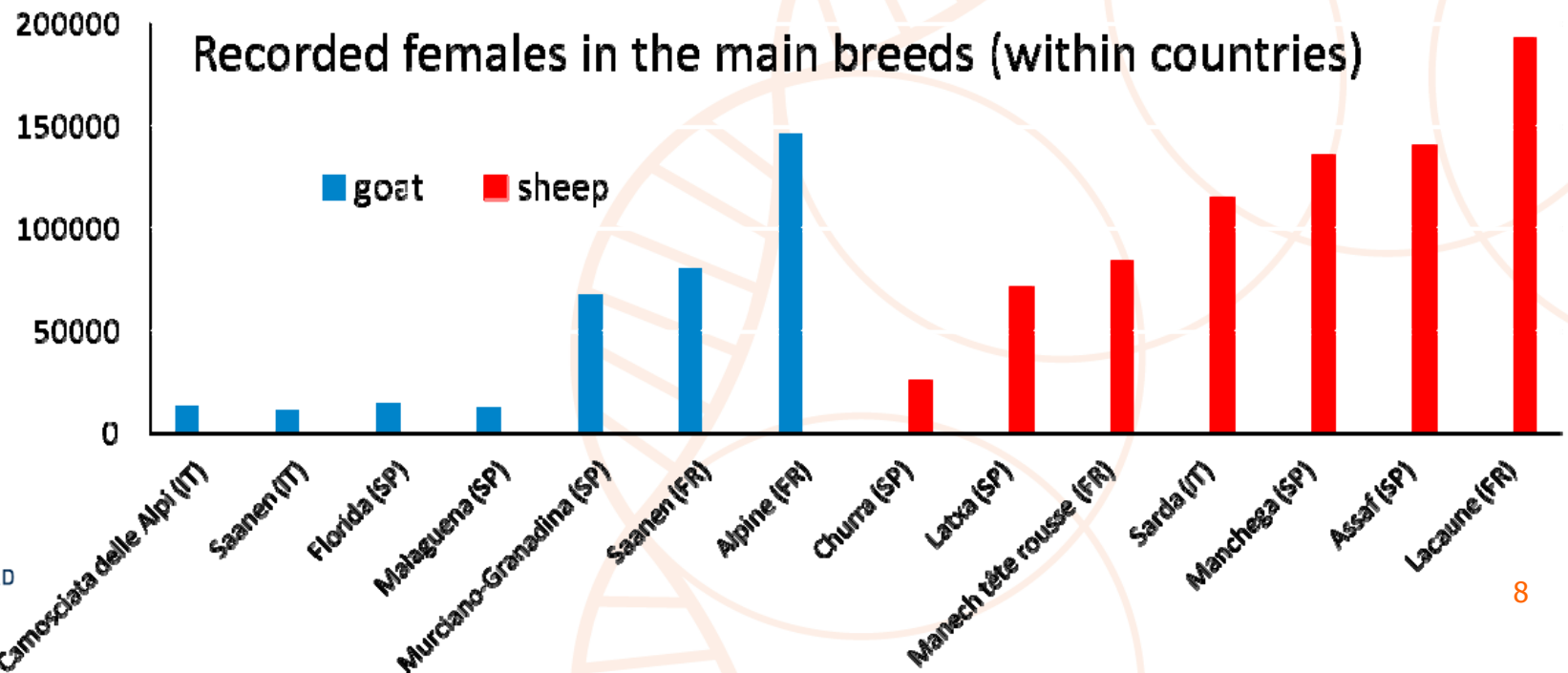
A lot of **local breeds** recorded in each country

40 goat breeds / 35 dairy sheep breeds reported in only one country

Some “**international**” breeds

countries in which the breed is recorded:

- Goat: Alpine (6) – Saanen (5) – Murciano-Gr. & Malagueña (2)
- Sheep: Lacaune (6), Assaf & East Friesian (3)



Recording methods: diversity across countries and breeds

	Goat	Sheep
Italy	AT	AT - AC (Sarda)
France	A4,AY,AZ,CY,CZ – AT - AC	AC - B
Spain	A4 - AT - AC	AT – AC (Latxapart)
Portugal	A4(most) - AT	A4(most) - AT
Slovenia	AT	AT
Croatia	AT(most) - A4	AT(most) - B4
Serbia	AT	
Czech Rep.	AC - E	AT
Slovak Rep.	AC	AC
Latvia	A4	

Simplified methods (one recorded milking per day) highly recommended

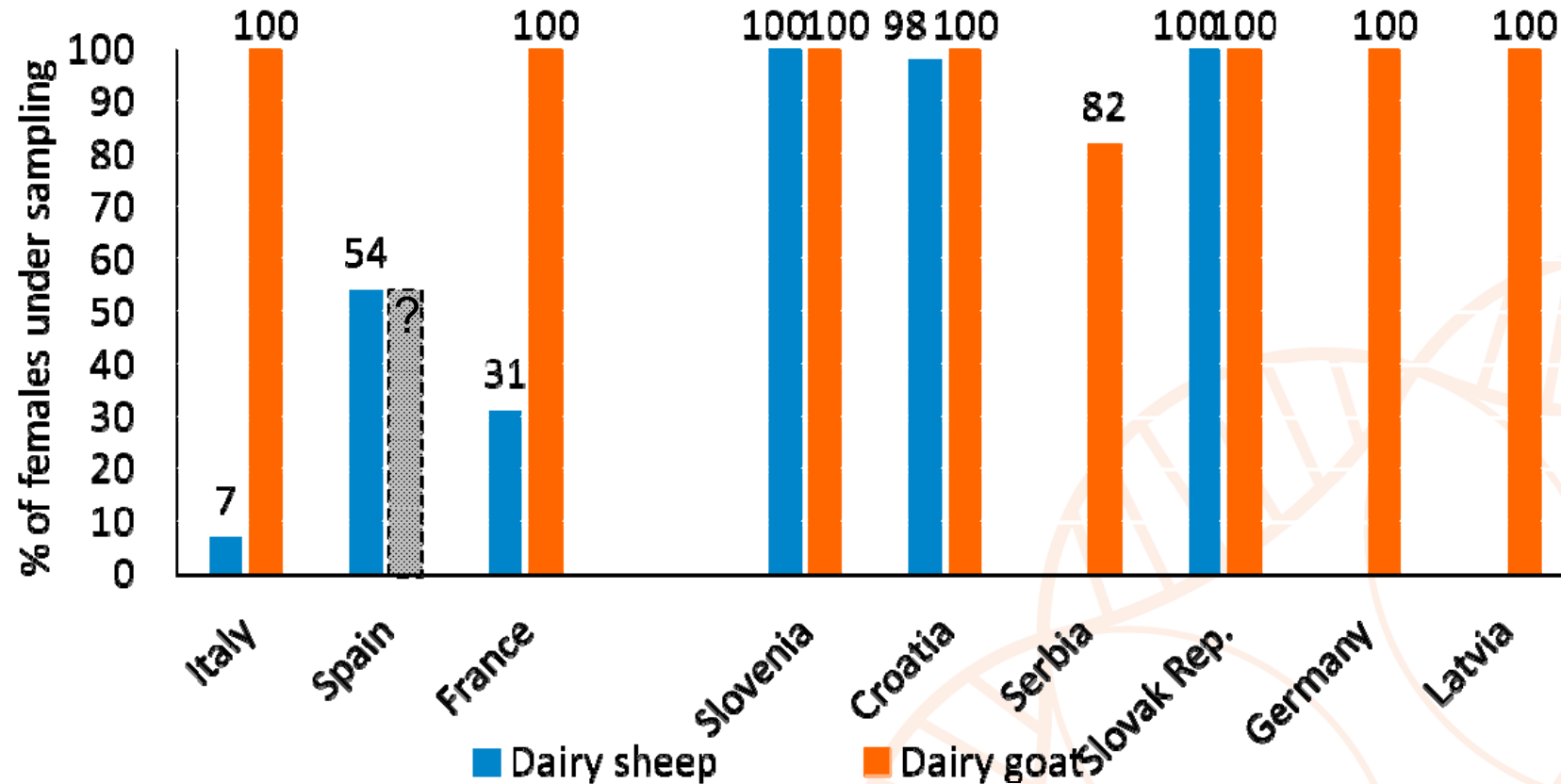
Estimation:

98.6% sheep in (AT,AC)

57.8% goats in (AT,AC)

B method used in France in commercial flocks (sheep)

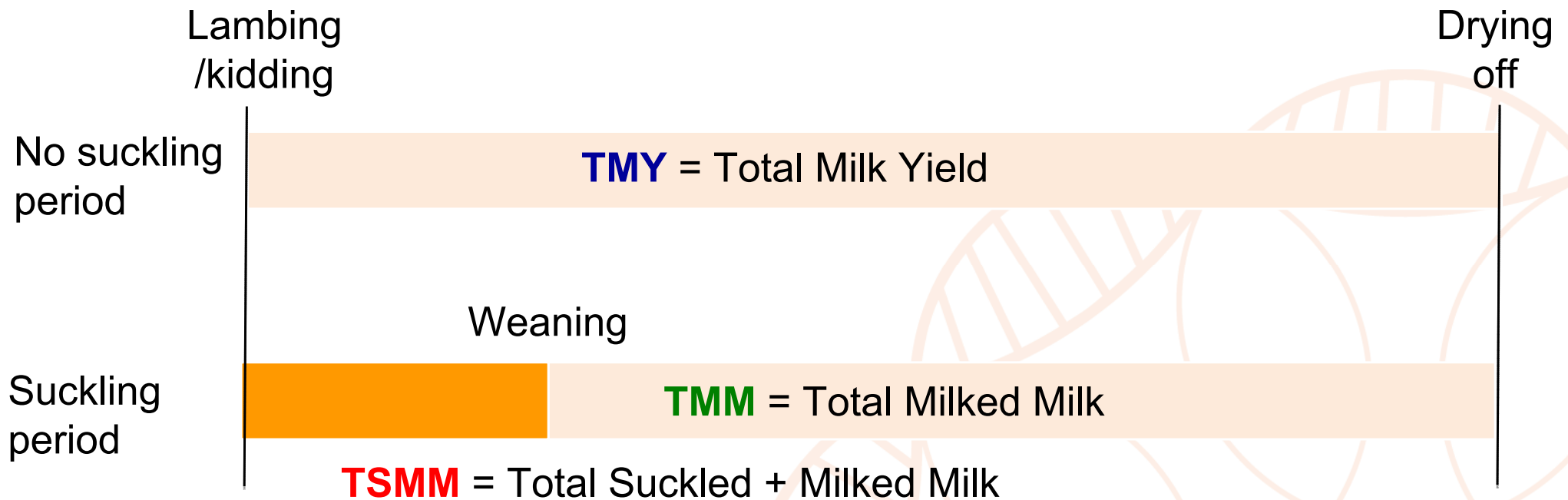
Use of qualitative recording (optional recording)



- Qualitative recording is globally generalised in goats
- Qualitative recording is partial in French, Spanish and Italian dairy sheep (cost of sampling and analysis)
- In addition, in those countries, the sampling is partial: ~half of the test-day with sampling (AT or AC method)

Lactation calculation

Different ways for exploiting the lactation of the females (suckling period more or less long vs no suckling period)



Different computations + confusion between breed and environment

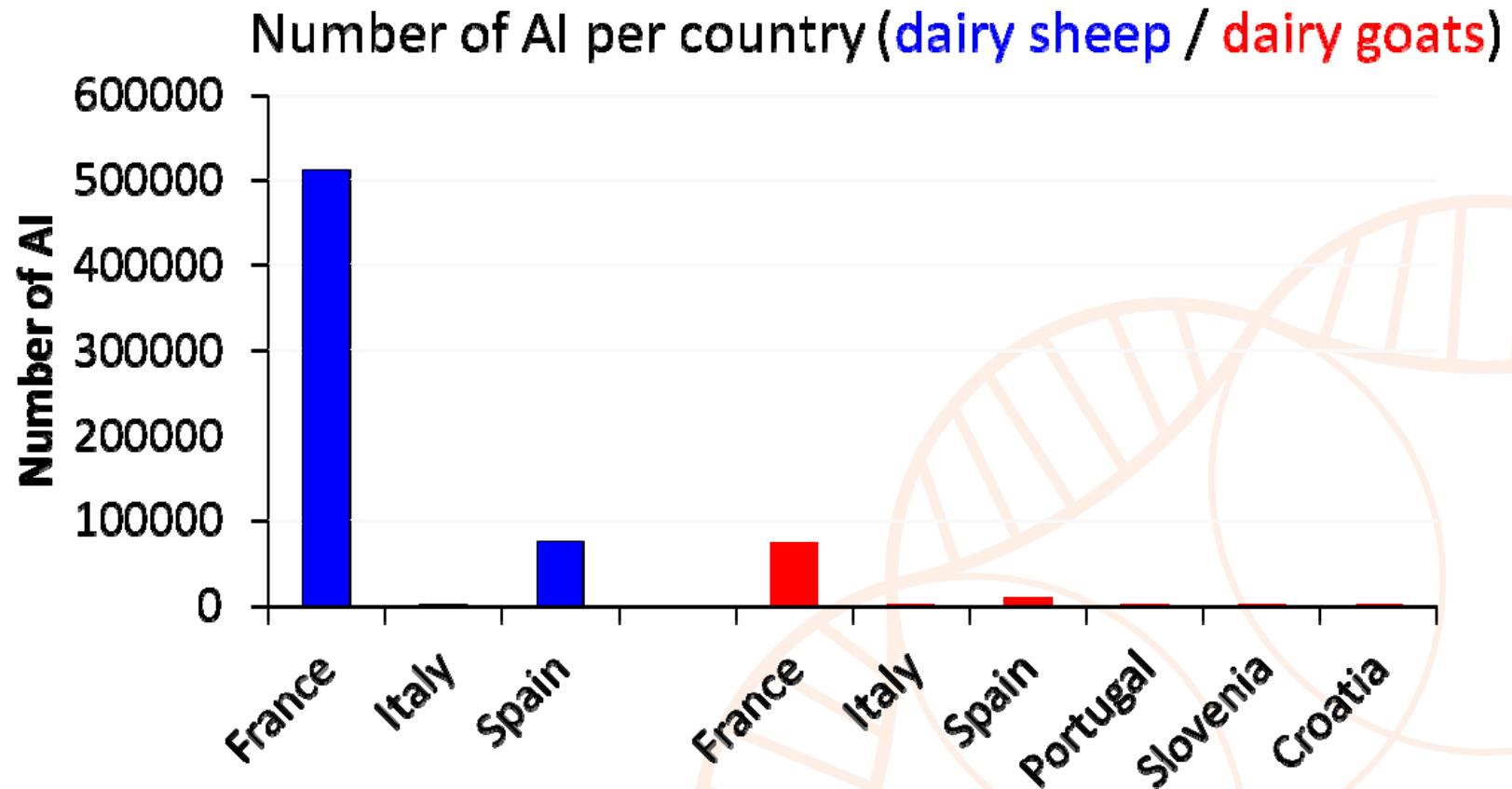
→ Comparisons of yield from different countries / breeds very difficult

Lactation calculation (example of 3 case-studies)

Species	Countries	Lactation calculation	Production of reference
Dairy sheep	Slovak Rep.	TMM	TMM (150)
	France	TMM	
	Spain	TSMM , TMM , TMY	TSMM (116), TSMM (120), TMY (163), TMM (120)
Dairy goat	Slovak Rep.	TMM	TMM (240)
	France	TMY	
	Spain	TMM , TMY , TSMM	TMM (150), TMM (254), TMY (210), TMY (274), TSMM (210)

- Homogeneity of computation in France and Slovak (but same computation over species in Slovak while variation in France).
- Great variety of computation in Spain according to the breed.

Breeding programs: situation of insemination



- AI is more spread in sheep than in goat. Mostly in France and Spain.
- Breeding programs with progeny-test in France, Spain and Italy.
- Genomic selection in France and Spain.

Conclusion and perspectives

- On-line survey is a relevant tool to follow the state of the art in dairy sheep and goat milk recording and related topics.
- Important countries are missing (Greece, Balkan countries). Should be stimulated.
- Milk recording in sheep and goat represents a small proportion of the populations: 8.5% in sheep and 9.6% in goat. Simplified methods (recording, sampling) are key to increase milk recording.
- Such survey should be proposed in meat sheep/goat and in wool recording. Might be an objective of the SGC WG.

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Thank you for your attention!

Special thanks to the members who submit yearly data on the platform and to ICAR secretariat for monitoring the database



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