

# **Joint meeting of the ICAR Working Groups on Performance Recording of Dairy Sheep & Goat Milk Recording**

## **Puerto Varas, Chile, 25<sup>th</sup> October 2016**

---

### **Agenda**

- 1-Opening and welcome
- 2-New organization of Sheep, Goat and Fiber WG : the Sheep, Goat & Small Camelid working group
- 3-Proposition of evolution on the goat guidelines : introduction of Liu method
- 4-Presentation of the results of the on-line enquiry
- 5-Addition to the agenda
- 6-Date of next meeting
- 7-Closure

# Agenda 1

## Opening and welcome

15:50 – 17:10

B. CENTER Room

Initially joint meeting of working group on dairy sheep and goats

Apologies from Zdravko Barać, co-chairman of the meeting, who could not attend

Also first meeting of new Sheep, Goat and Small Camelid WG (see 2<sup>nd</sup> point of the agenda)

## Agenda 2

# New organization of the Sheep, Goats and Fiber fields in ICAR

ICAR has been seeking to expand its role for Sheep and Goats to include meat, reproduction and maternal traits.

Formation of a Working Group that encompasses the interest of **Sheep, Goat and Small Camelid**.

The ICAR Board at its meeting on 19<sup>th</sup> July 2016 approved the Terms of Reference for the **SGC-WG** to replace the three existing groups

# SGC-WG : terms of reference

## Considerations

- ✓ **To date**, the **focus** of ICAR activities for sheep & goats has mainly been **on milk recording** and the existing WG work closely together (joint meetings)
- ✓ **Animal fiber WG** covers small ruminants species (sheep, goats) and a range of small camelids including alpacas, llamas and vicunas.
- ✓ There is a **demand and need** for ICAR's guidelines to be extended to include **meat and wool production** especially from sheep.
- ✓ Production systems | farming environments for sheep, goats, small camelids are diverse but with **similarities** between countries
- ✓ Systems | technologies for identification and performance recording of sheep, goats, small camelids are **similar**

# SGC-WG : terms of reference

## Considerations

- ✓ Sheep, goats and small camelids products : important contribution to world agriculture production especially in **harsh environment**.
- ✓ Significant administrative overhead for each WG. Consolidating WG => **reduce overhead + better outputs**.
- ✓ Philosophy **accuracy** task force : link accuracy of performance recording to the benefit generated by using the resulting information in a range of decisions.

# New organization of the Sheep, Goats and Fiber working group

3 WG

Performance  
Recording of  
Dairy Sheep WG

Goat  
Performance  
Recording WG

Animal Fiber  
WG

1 WG

Sheep, Goat &  
Small Camelid  
WG

3 expert Advisory  
Groups

Sheep & Goat  
Milk Recording  
EAG

Sheep, Goat &  
Small Camelid Fiber  
Recording EAG

Sheep & Goat  
Meat, Reproduction  
and Maternal Traits  
Recording EAG

# SGC-WG : terms of reference

## Objectives of the SGC-WG

- ✓ Provide a **forum for members of ICAR** to collaborate, exchange and learn on **performance recording and genetic evaluation** for sheep, goats & small camelid (SGC).
- ✓ Maintain, update, promote, extend **guidelines** for SGC performance recording for the full range of traits relevant to decisions on : genetic improvement, farm management, quality assurance, animal health and welfare.
- ✓ Conduct and report results of periodic **international surveys** on SGC performance recording and genetic evaluation

# SGC-WG : terms of reference

## Objectives of the SGC-WG

- ✓ **Develop and support services** relevant to SGC that service ICAR will provide to members of ICAR on a user-pays basis.
- ✓ Facilitate and co-ordinate **international collaboration in research and development** on SGC performance recording & genetic evaluation

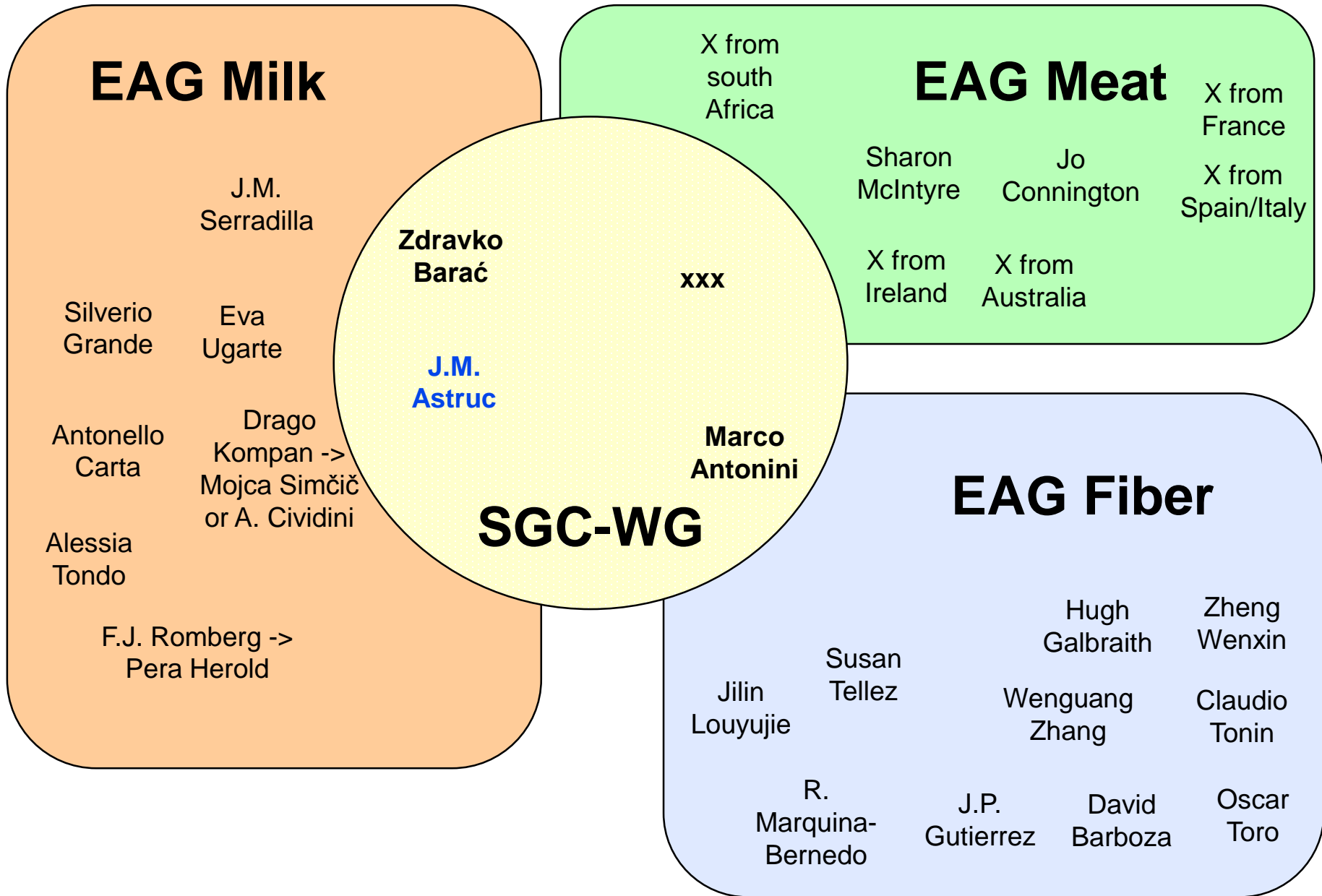


# SGC-WG : terms of reference

## Governance

- SGC-WG will comprise persons covering :
  - ✓ All geographical regions
  - ✓ Technical expertise in : (i) milk, meat, fiber, reproduction & functional trait recording of SGC ; (ii) genetic improvement of SGC ; (iii) farm management, quality assurance, health & welfare in SGC
- Initial composition :
  - ✓ **SGC-WG itself** ⊂ chairperson of the WG & chairperson of each EAG
  - ✓ **EAG Sheep and Goat Milk Recording** ⊂ current membership of current Dairy Sheep WG and Goat WG
  - ✓ **EAG Sheep, Goat & small Camelid Fiber Recording** ⊂ current membership of current Animal Fiber WG
  - ✓ **EAG Sheep & Goat Meat, Reproduction & Maternal Trait Recording** : formed primarily from interest of countries with major sheep meat sectors

# SGC-WG : members



# SGC-WG : terms of reference

## Priorities

- To be established by the Committee taking into account of its ToR and any request from the ICAR Board
  
- Priorities in the next 5 years include :
  - ✓ **Develop** guidelines for the sheep and goat **meat** performance recording
  
  - ✓ **Develop** guidelines for the sheep and goat **reproduction and maternal trait** performance recording
  
  - ✓ **Maintain** and develop the ICAR guidelines for **milk** recording of sheep and goats
  
  - ✓ **Maintain** and develop the ICAR guidelines for **fiber** production from sheep, goats and small camelid
  
  - ✓ **Genomics ?**

## Agenda 3

**Proposition to update guidelines  
in goats (+ dairy sheep)**

# Proposition to update guidelines in goats (+ dairy sheep)

**Krakow, 2015** : presentation by Agnès Piacère of method Liu adopted in France to estimate daily yield and content from a one-milking record

## **Background & objectives :**

- Decreasing the constraints
- New recording schemes more flexible, more simple, less expensive
- Avoid the need of alternating time of record (problem of AT)
- → correction by Liu method OK, better than AT for daily yields/contents, as precise as AT for genetic evaluation
- And after : simplify the rules on recording intervals

# Remind existing protocols in the current guidelines in goats & dairy sheep

Official / non official	First letter	Second letter or number
Official	A   B   C   E	4   5   6   T   C
Non official	D	

## A4 = reference method

A = official tester | B = farmer | C = official tester or farmer

E = flexible official method where rules of not recording suckling ewes may not be respected | rules of recording all animals may not be respected

**D = simplified, based on 2-4 visits/flock. No lactation, no EBVs**

T = alternate monthly

C = corrected monthly

# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### Existing methods :

**T** : when AT method is set up, there is **no obligation to correct** daily yield (except multiplying by 2) and content in order to calculate MY, FY and PY for the whole lactation. Nevertheless, correction is possible. **DIFFERENT FROM CATTLE GUIDELINES THAT OBLIGES CORRECTION FOR T METHOD.**

**C** : recording and sampling occur **at any milking** at each recording visit. This schemes implies to use a correction method among those described to estimate the daily production. **DIFFERENT FROM CATTLE GUIDELINES THAT OBLIGES TO RECORD THE SAME MILKING (C for CONSTANT instead of C for CORRECTED).**

# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### New methods :

**Z : alternate scheme**, with **milk yield from the two daily milking and only one-milking sampling alternately** the morning and the evening on the next recording visit. As the alternate scheme is realized, there is no obligation to correct daily contents in order to calculate fat yield and protein yield for the whole lactation.

**Y : milk yield from the two daily milking and only one-milking sampling** that occur **at any milking** at each recording visit; this scheme implies to use a **correction method** among those described to estimate the daily fat and protein contents.



# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### Correction method :

- Different correction methods may be listed in the guidelines (ex. Liu method).
- It is up to the ICAR member to describe precisely the correction method in its own situation (ex. France explains as it is below).

Separate regressions for combinations of :  $y_{Day}^{[ijk]} = b_0^{[ijk]} + b_1^{[ijk]} y_{Test}^{[ijk]} + e^{[ijk]}$

Trait	Nb of classes	Class definition
Parity	2	1 <sup>st</sup> lactation, 2 <sup>nd</sup> and later lactations
Lactation stage (in months)	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 +
Milking interval (time duration)	5 AM: 5 PM:	≤ 12.5h long; 12.5h to 13h ; 13h-13.5h; 13.5h-14h; ≥14h long ≥ 11.5h long; 11h-11.5h; 10.5h-11h; 10h-10.5h; ≤10h long

# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### Frequency and number of milk recording visits :

- Add the interval of 7 weeks for the reference method
- Add the different intervals as well for method T, C, Z, Y (from 4 to 7)

**CAUTION** : in sheep & goat current guidelines, it is set that for methods with 1 milking tested, the interval must be 4 weeks. **TO DECIDE.**

Philosophy for sheep : short lactation (150-180 days) => when 1 milking tested, the loss of precision must not be increased by increasing interval.

Philosophy for goats : ? Longer lactations ... might be accepted.

# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### Lower and upper bound in intervals between visits :

In section 2.2 (sheep) and 2.3 (goats), the intervals are defined by an average recording interval, without any lower not upper bound. It is OK = it must be possible to tighten the intervals (example : for experimental reasons).

≠ in section 2.1 and especially 2.1.2 (ICAR standards for recording intervals) where there are lower and upper bounds.

# Proposition to update guidelines in goats (+ dairy sheep)

## French proposition :

### Tolerance regarding the interval between lambing/kidding and first test-day and between 2 consecutive test-days

- It is up to each country/breed/breed society to describe the tolerance accepted in its situation about :
  - Interval between lambing/kidding and first test-day
  - Interval between 2 consecutive test-days

### Last test-day involved in the lactation calculation

- It is up to each country/breed/breed society to describe how the lactation is calculated and in particular which is the last test-day taken into account.

## Agenda 4

# **PRESENTATION OF THE RESULTS OF THE ON-LINE ENQUIRY DAIRY SHEEP**

# NEW FORMALIZATION OF THE ON-LINE SURVEY

## DAIRY SHEEP & GOATS

- On-line survey developed in a new software by Cesare Mosconi (ICAR secretariat)
- Opportunities to simplify some tables et avoid multiple rows of header
- Some complicated tables splitted into 2 simpler tables

# NEW FORMALIZATION OF THE ON-LINE SURVEY

## DAIRY SHEEP & GOATS

### Milk recording surveys on cow, sheep and goats

ICAR takes care of the "Yearly enquiry on the situation and the results of cow, sheep and goat milk recording in ICAR member countries". Please consider that:

- the responsibility for the validation of the data is totally delegated to each country, whose e-mail address is reported in each field.
- submission of the data and their edition can be done only by the national contact point
- for submitting data, the Internet browser must accept cookies.
- report malfunctions of the database to Cesare Mosconi ([mosconi@icar.org](mailto:mosconi@icar.org))



International  
Committee for  
Animal Recording

Please use the following mask to browse the interested data:

[France](#) > [Sheep milk recording](#) > [1a. Milk recording and management of the lactation](#)

Show  entries

Search:

Country	Year	Breed or population (Name)	Number of flocks in the population	Number of ewes in the population	Number of flocks in milk recording	Number of ewes <sup>(1)</sup> in milk recording	Recorded flocks <sup>(2)</sup> (1) milking after suckling period	If system (2). Average length of the suckling period (in days)	Percentage of official recorded flocks in machine milking	Number of flocks in D recording	Number of ewes <sup>(1)</sup> in D recording	Notes	E-mail of the responsible
France	2015	Lacaune	2500	890	363	172836	2	25	100	1126	486083		Jean-Michel.Astruc@idele.fr
France	2015	Basco-Béarnaise	400	78	80	24039	2	35	85	26	6625		Jean-Michel.Astruc@idele.fr
France	2015	Manech tête noire	480	80	37	11747	2	35	95	35	9300		Jean-Michel.Astruc@idele.fr
France	2015	Manech tête rousse	1300	274	215	80935	2	35	95	65	20543		Jean-Michel.Astruc@idele.fr
France	2015	Corse	375	83	53	16172	2	35	95	49	13294		Jean-Michel.Astruc@idele.fr

# Yearly enquiry on-line

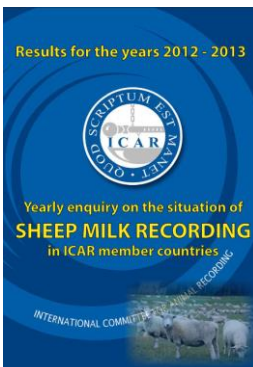


**YELLOW** : ICAR countries having submitted data to the database in 2014-2015



**BLUE** : countries whose last update dates back from 2010-2011

**RED** : countries whose last update dates back from 2012-2013



- Booklet with raw data

**9 submissions in 2014-2015 (decreasing !)**

- Biennial report (tables and figures) for the years 2014-2015 available on the web



# **Recorded population by countries**

# Recorded population - countries

(ICAR Puerto Varas 2016)

Countries	Size of population		Recorded population (official milk recording)		% recorded population
	#flocks	# ewes	#flocks	# ewes	
Italy (2014)		[4,848,000 <sup>1</sup> ]	2,563	<b>379,238</b>	7.8%
Spain (2015) <sup>3</sup>		>1,463,000 [2,950,000 <sup>1</sup> ]	442	<b>305,042</b>	10.3%
France (2015) <sup>2</sup>	5,055	1,405,000	748	<b>305,729</b>	21.7%
Greece (2013)		>681,724 [7,198,000 <sup>1</sup> ]	459	<b>85,345</b>	1.2%
Portugal (2011)	386	>41,129 [406,500 <sup>1</sup> ]	338	<b>20,926</b>	4.8%
Slovak Rep (2015)		[163,200 <sup>1</sup> ]	79	<b>7,597</b>	4.7%

<sup>1</sup> figures 2013 from STATFAO

<sup>2</sup> 535,845 in D recording

<sup>3</sup> several breeds are missing

# Recorded population - countries

(ICAR Puerto Varas 2016)

Countries	Size of population		Recorded population		% recorded population
	#flocks	# ewes	#flocks	# ewes	
Croatia (2015)	691	34,000	82	<b>6,109</b>	18.0%
Slovenia (2015)		[3,035 <sup>1</sup> ]		<b>1,879</b>	61.9%
Czech Rep (2015)		[64,000 <sup>1</sup> ]	40	<b>1,570</b>	2.4%
Canada (2014)	-	-	7	<b>1,158</b>	-
Germany (2015)	137 <sup>2</sup>	2,421 <sup>2</sup>	34	<b>932</b>	38.5 %
Belgium (2013)	14	1,500	-	-	-
<b>TOTAL</b>			<b>4,792</b>	<b>1,115,525</b>	

<sup>1</sup> figures 2013 from STATFAO

# Recorded population - countries

(ICAR Puerto Varas 2016)

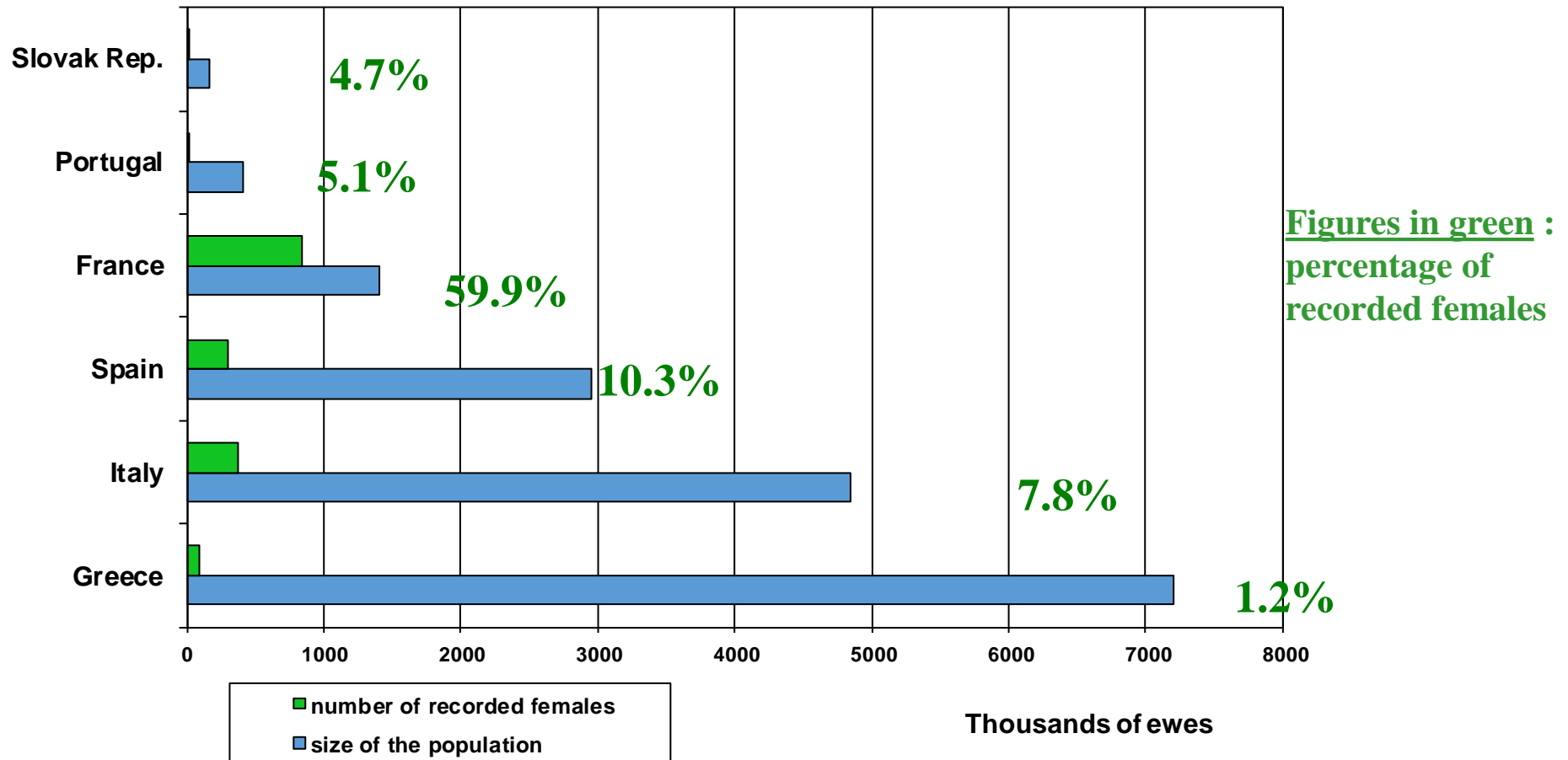
## Particular case of Spain

Countries	Size of population		Recorded population		% recorded population
	#flocks	# ewes	#flocks	# ewes	
Spain (2015)		>1,463,000 [2,950,000 <sup>1</sup> ]	442	<b>305,042</b>	10.3%
Spain local breeds (2015)			410	257,545	
Spain foreign breeds or crossing (2015)			32	47,497	

<sup>1</sup> figures from STATFAO

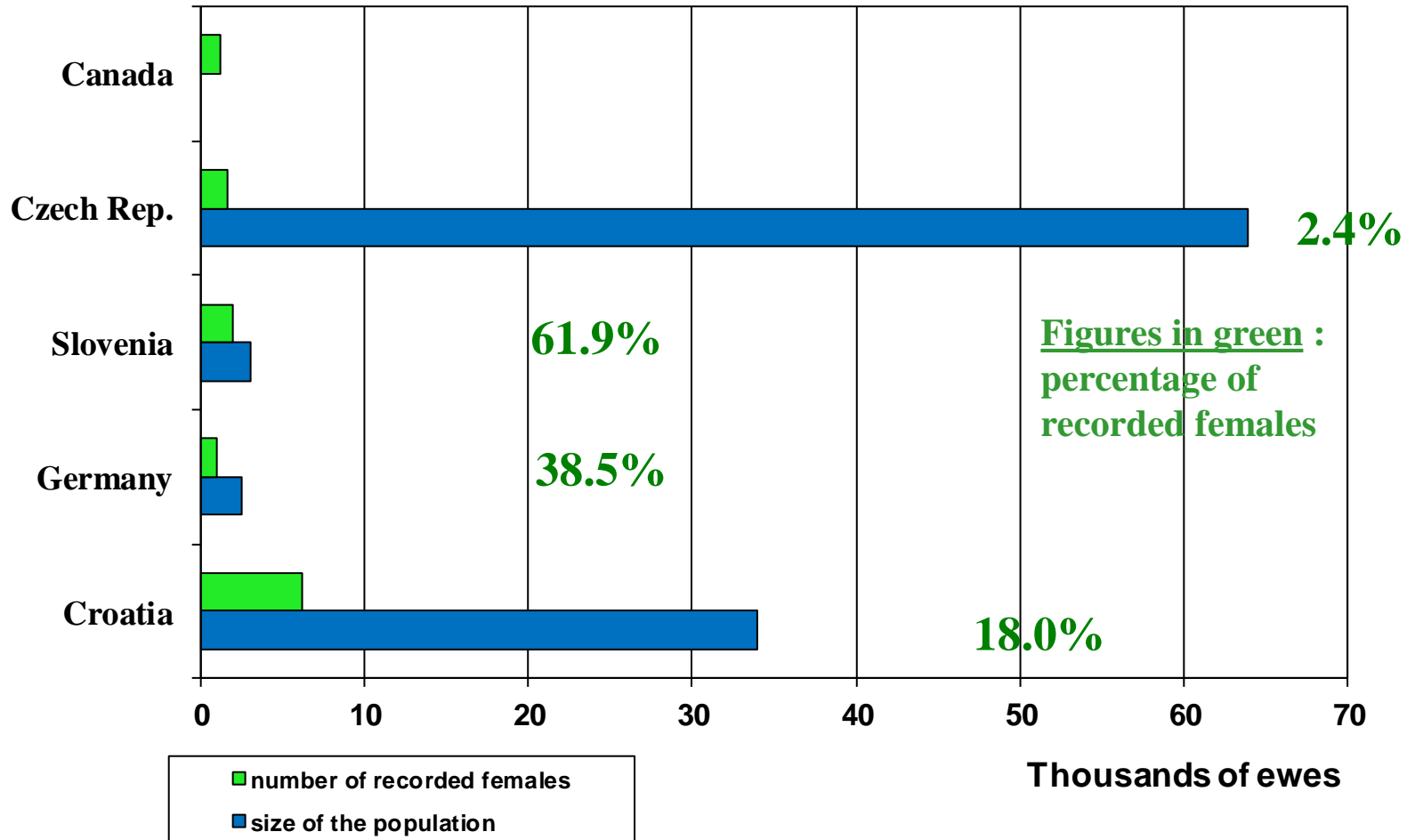
Lacaune only. No data for Assaf

# Sheep milk recording in countries with more than 100,000 ewes (ICAR Puerto Varas 2016)

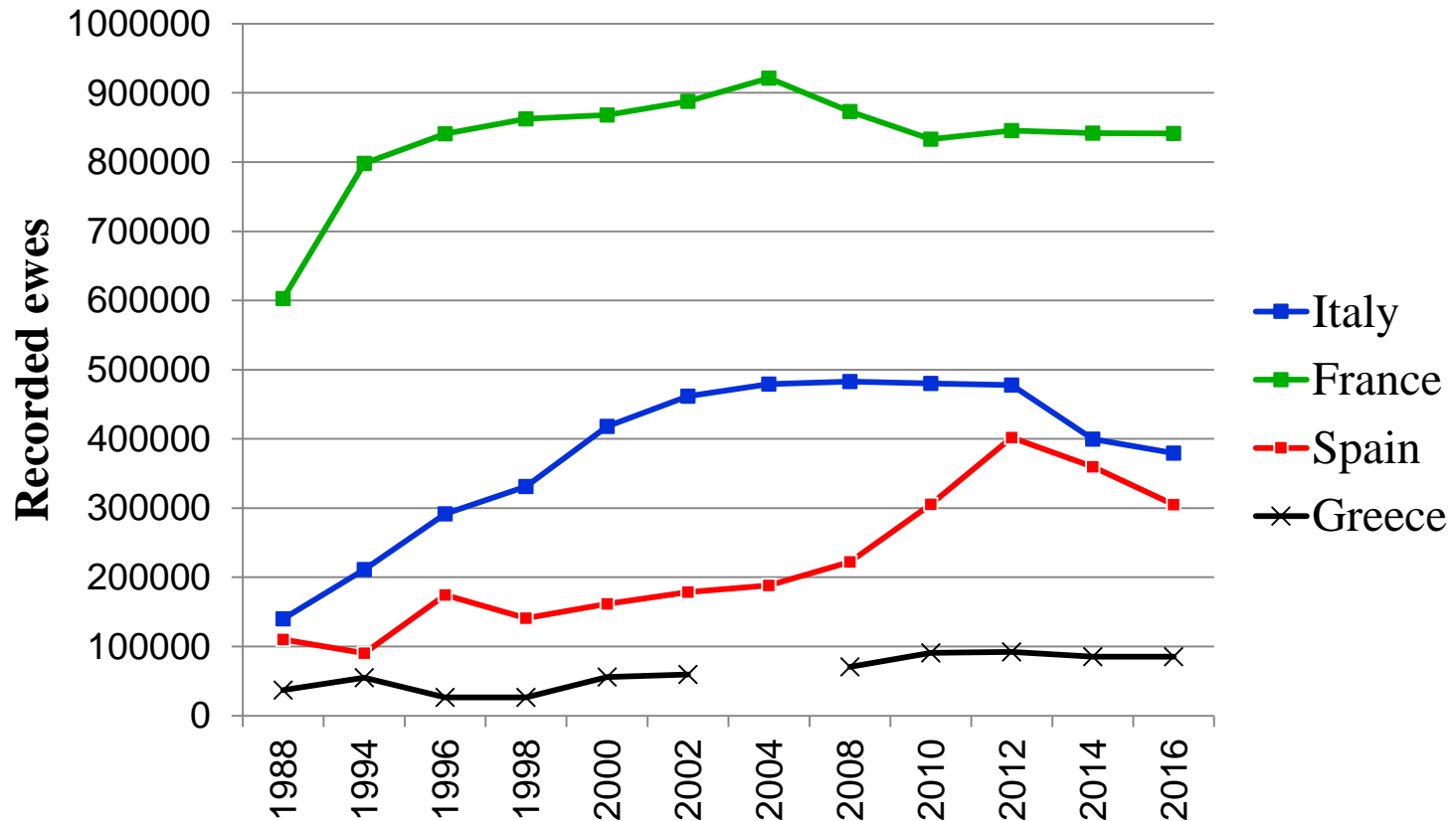


France : official + D recording

# Sheep milk recording in countries with less than 100,000 ewes (ICAR Puerto Varas 2016)

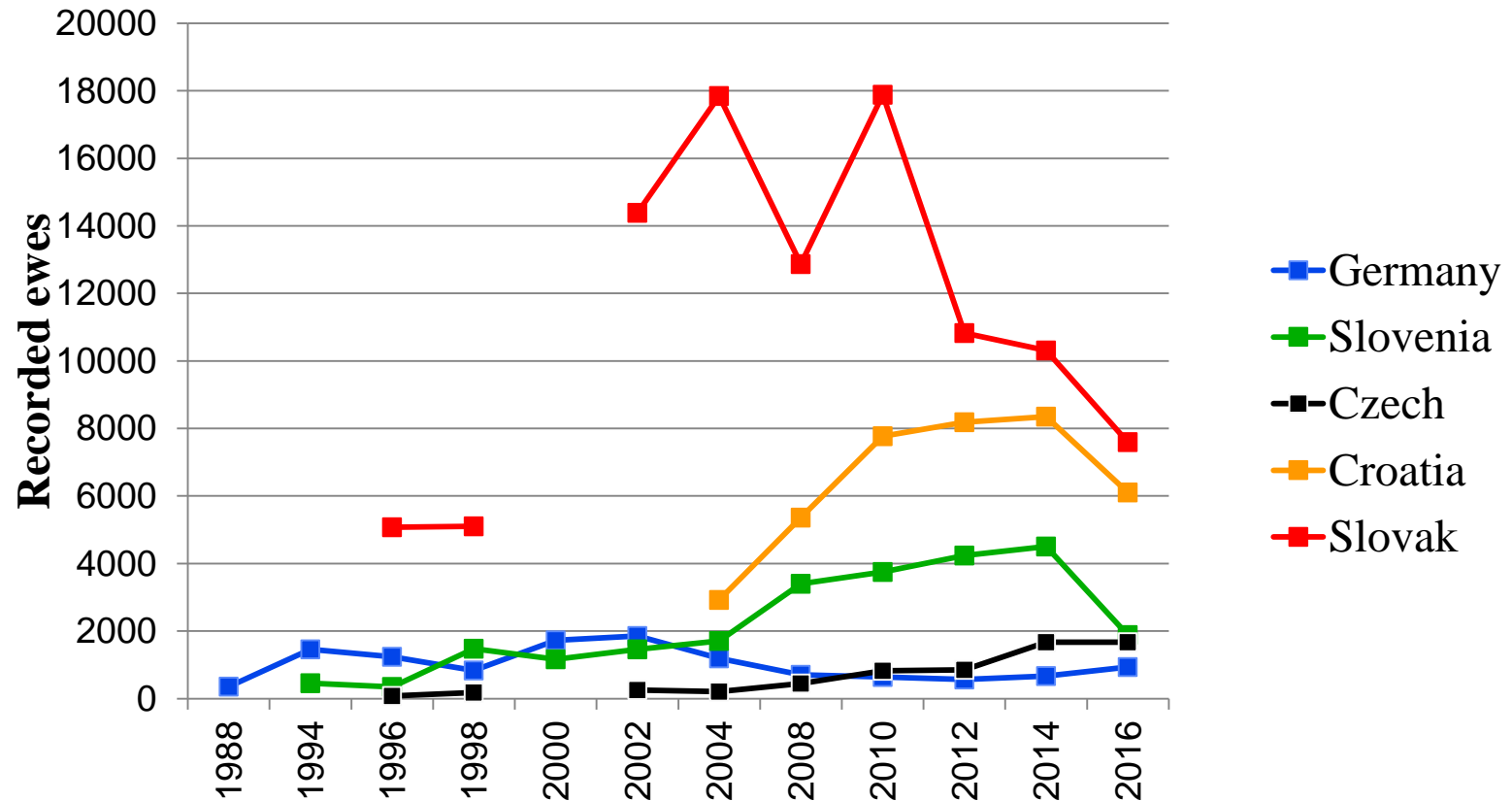


# Evolution of number of recorded ewes in some ICAR countries (ICAR Puerto Varas 2016)



Decrease in Spain and Italy

# Evolution of number of recorded ewes in some ICAR countries (ICAR Puerto Varas 2016)





# **Recorded population by breeds**

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Belgium (2013)	All breeds, including Mouton Laitier Belge	14	1,500	0	0	
Canada (2014)				7	1,158	

Belgium : no updated data since 2013

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Germany (2015)	Ostfriesisches Milchscharf	135 <sup>1</sup>	2,163 <sup>1</sup>	31	715	33.1 %
	Lacaune	2 <sup>1</sup>	258 <sup>1</sup>	3	217	84.1 %
Czech Rep. (2015)	All breeds			40	1,570	

<sup>1</sup> data from 2013

Czech : in 2013 : data separated by breed (Lacaune, East Friesian, Bohemian Forest sheep, Bergshaf, Tsigai, improved Valachian, crossbreed)

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Slovak Rep. (2015)	Improved Valachian			20	2,548	
	Valachian			3	47	
	Tsigai			21	2,439	
	Hybrids			14	1,641	
	Lacaune			17	899	
	East Friesian			4	23	

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Croatia (2015)	Paska	600	30,000	50	4,388	14.6 %
	Istrian	41	2,000	23	1,357	67.9 %
	East Friesian	50	2,000	9	364	18.2 %
Slovenia (2015)	Bovec	75 <sup>1</sup>	3,500 <sup>1</sup>		1,197	34.2 %
	Istrian Pramenka	15 <sup>1</sup>	1,150 <sup>1</sup>		266	23.1 %
	Improved Bovec	25 <sup>1</sup>	1,100 <sup>1</sup>		416	37.8 %

<sup>1</sup> data from 2012

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population (official milk recording)		% recorded population	Ewes in D method
		#flocks	# ewes	#flocks	# ewes		
France (2015)	Lacaune	2,500	890,000	363	172,836	74.0 %	486,083
	Manech Tête Rousse	1,300	274,000	215	80,935	37.0 %	20,543
	Corse	375	83,000	53	16,172	35.5 %	13,293
	Basco-Béarnaise	400	78,000	80	24,039	39.3 %	6,625
	Manech Tête Noire	480	80,000	37	11,747	26.3 %	9,300

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Greece (2013)	Lesvou	1,650	254,000	137	30,282	11,9 %.
	Xios	140	35,800	66	17,209	48.1 %
	Frisarta	645	57,500	74	10,729	18.7 %
	Kalaritiki	24	6,434	24	6,434	100%
	Karagouniki	2,400	160,000	59	5,343	3.3 %
	Glossas Skopelous	18	3,404	18	3,404	100%
	Pilioritiki	26	2,904	26	2,904	100%
	Serron	30	4,500	16	2,381	52.9 %
	Sarakatsaniko	7	2,255	6	1,974	87.5%

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Greece (2013)	Katsika	5	1,578	5	1,578	100%
	Zakynthou	10	997	10	997	100%
	Agriniou	5	894	5	894	100%
	Kimis	10	858	10	858	100%
	Florina-Pelagonias	5	600	3	358	59.7%
	Karistou	450	60,000			
	Sfakion	480	58,000			
	Kefallinias	300	32,000			

No updated data since 2013

681,724 purebred sheep (out of 7,200,000 dairy sheep on the whole)



# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Italy (2014)	Sarda	13,000	3,600, 000	1,032	212,941	6.9 %
	Valle del Belice			833	117,437	
	Comisana			392	24,667	
	Pinzirita			164	13,642	
	Massese			96	8,248	
	Delle Langhe			46	2,303	
	Lacaune	No data in 2015				

# Recorded population - breeds (ICAR Puerto Varas 2016)

- Lacaune, Nera di Arbus, Moscia Leccese, Assaf,  
Barbaresca, Altamura : no data in 2014 vs 2013

# Recorded population - breeds (ICAR Puerto Varas 2016)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Spain (2015)	Manchega	762	529,505	137	136,182	22.1%
	Assaf & crosses		?	?	?	?
	Latxa	8,249	331,770	177	67,060	20.2%
	Lacaune	300	200,000	32	47,497	23.7%
	Churra	800	360,000	64	41,093	10.5%
	Castellana	20	18,000	9	7,000	38.9%
	Karranzana	902	11,658	10	1,574	13.5%

# Recorded population - breeds (ICAR Puerto Varas 2016)

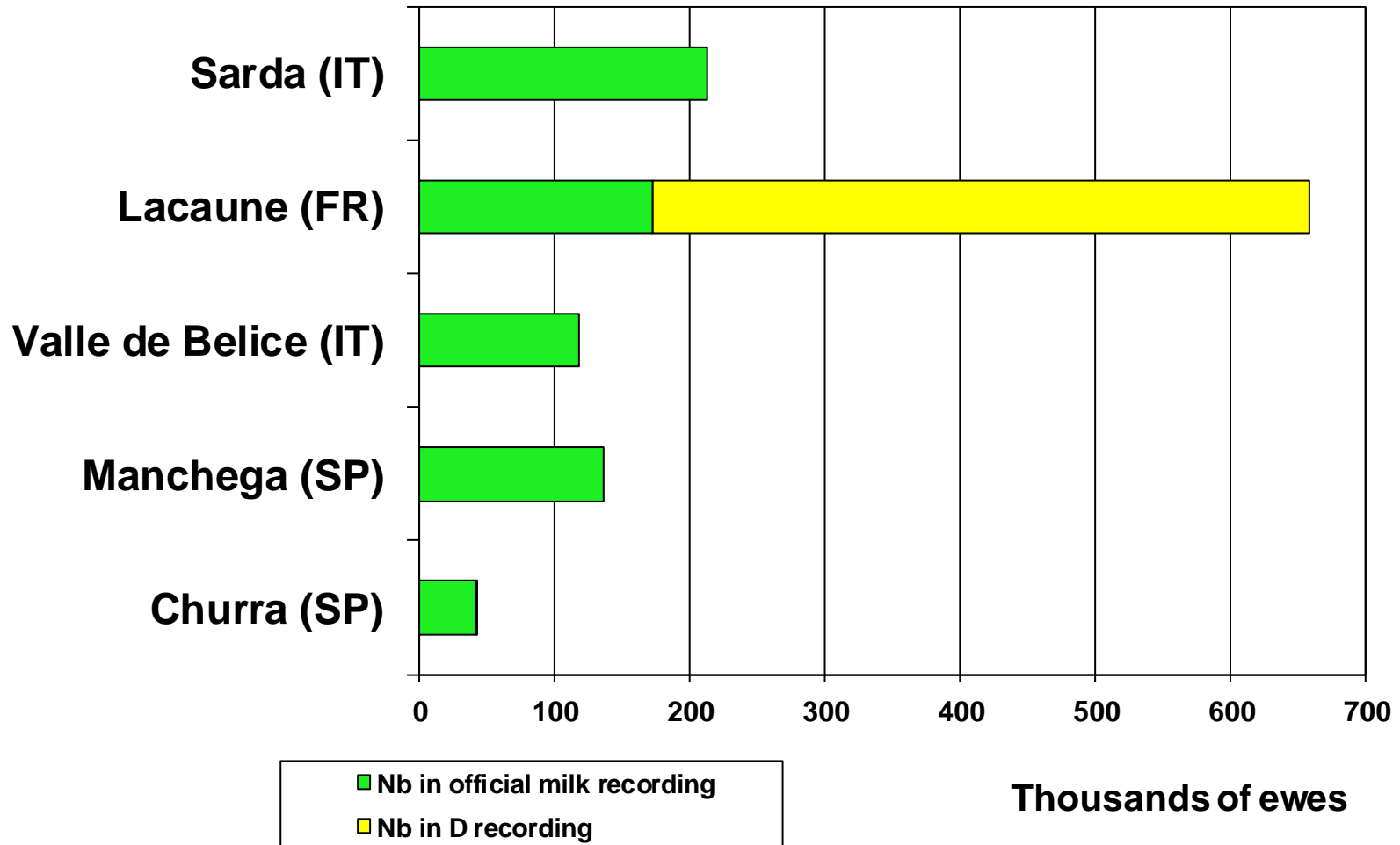
Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Spain (2015)	Rubia de El Molar	9	1,817	1	146	8.0%
	Colmenareña	21	5,748	3	2,755	47.9%
	Merino de Grazalema	36	4,851	9	1,735	35.8%

# Recorded population - breeds (ICAR Puerto Varas 2016)

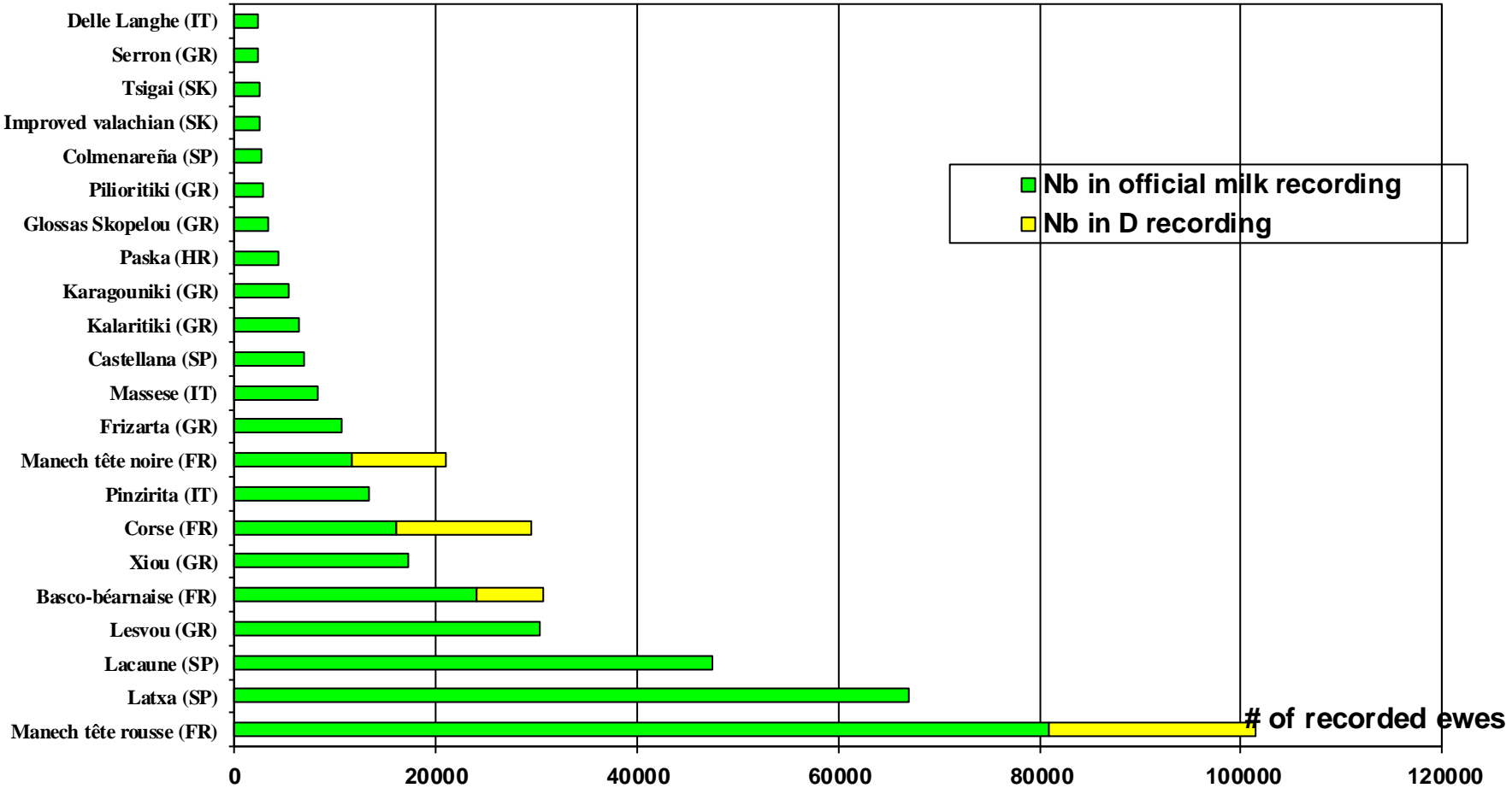
Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Portugal (2011)	Serra de Estrella	217	19,861	217	12,310	62,0%
	Churra Terra Quente	149	17,372	103	7,066	40,7%
	Saloia	20	3,896	18	1,550	39,8%

No updated data since 2011

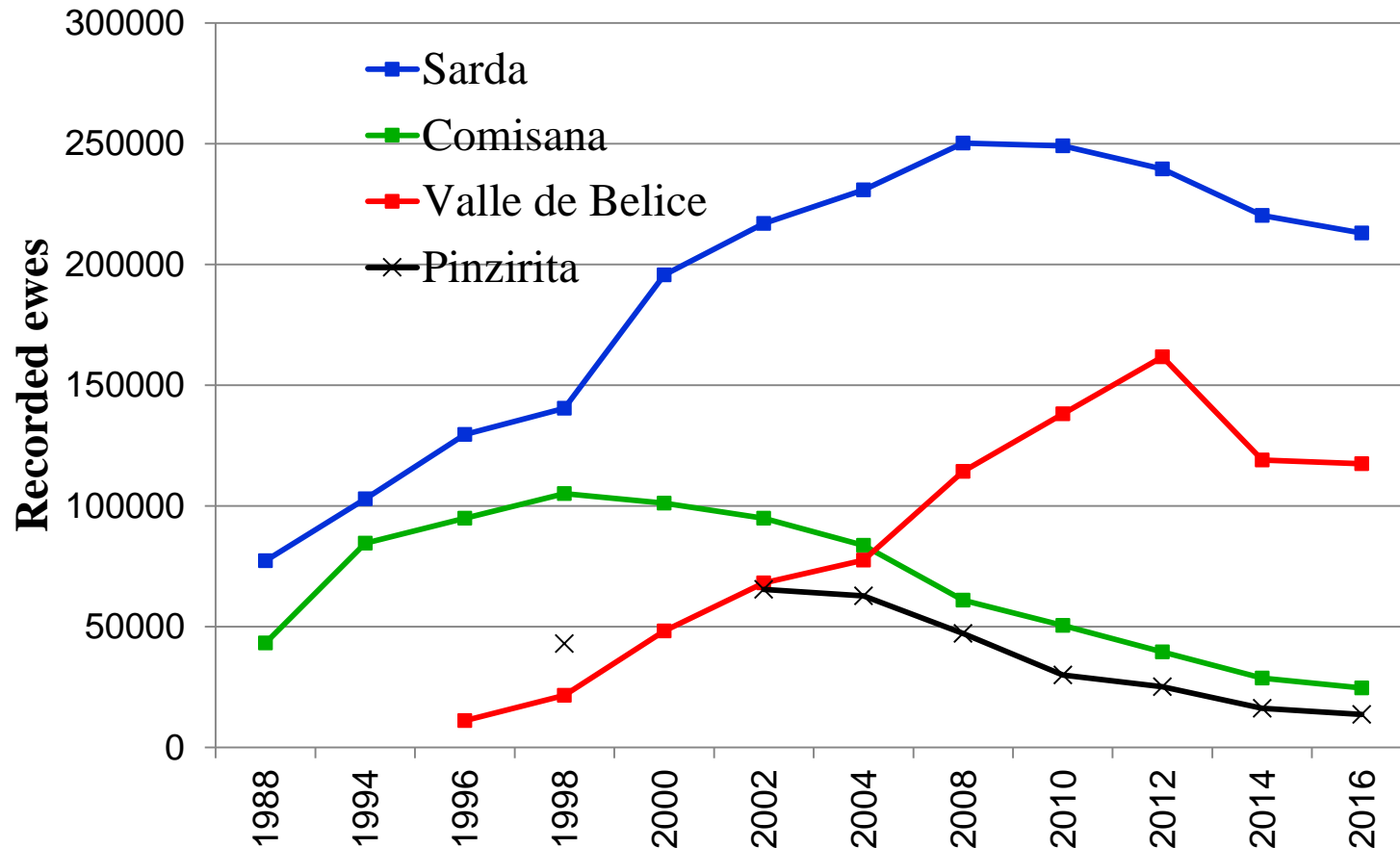
# Sheep milk recording in breeds with more than 400,000 ewes (ICAR Puerto Varas 2016)



# Sheep milk recording in breeds with less than 400,000 ewes and with more than 2,000 recorded ewes (ICAR Puerto Varas 2016)



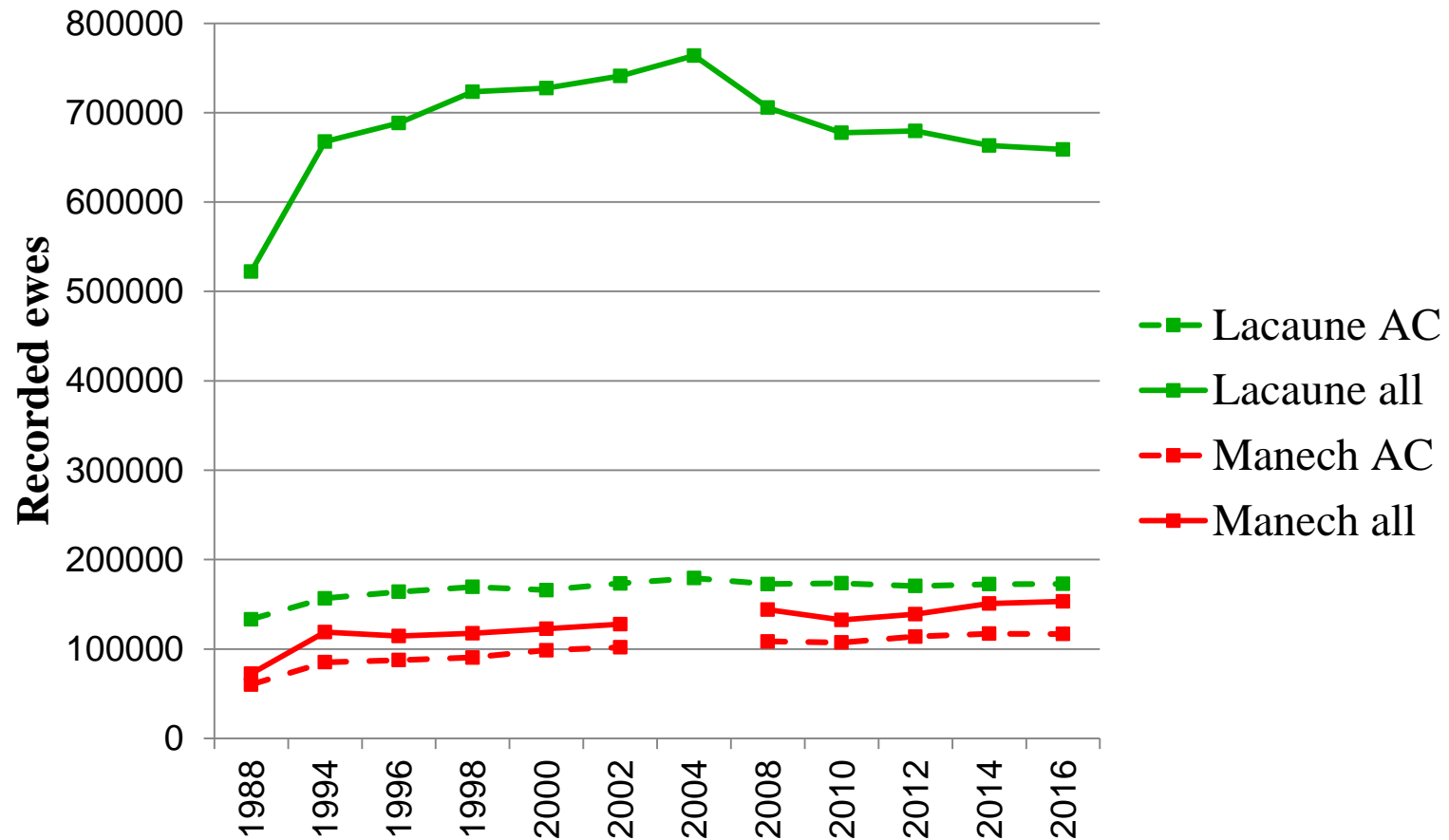
# Evolution of number of recorded ewes in some major Italian breeds (ICAR Puerto Varas 2016)



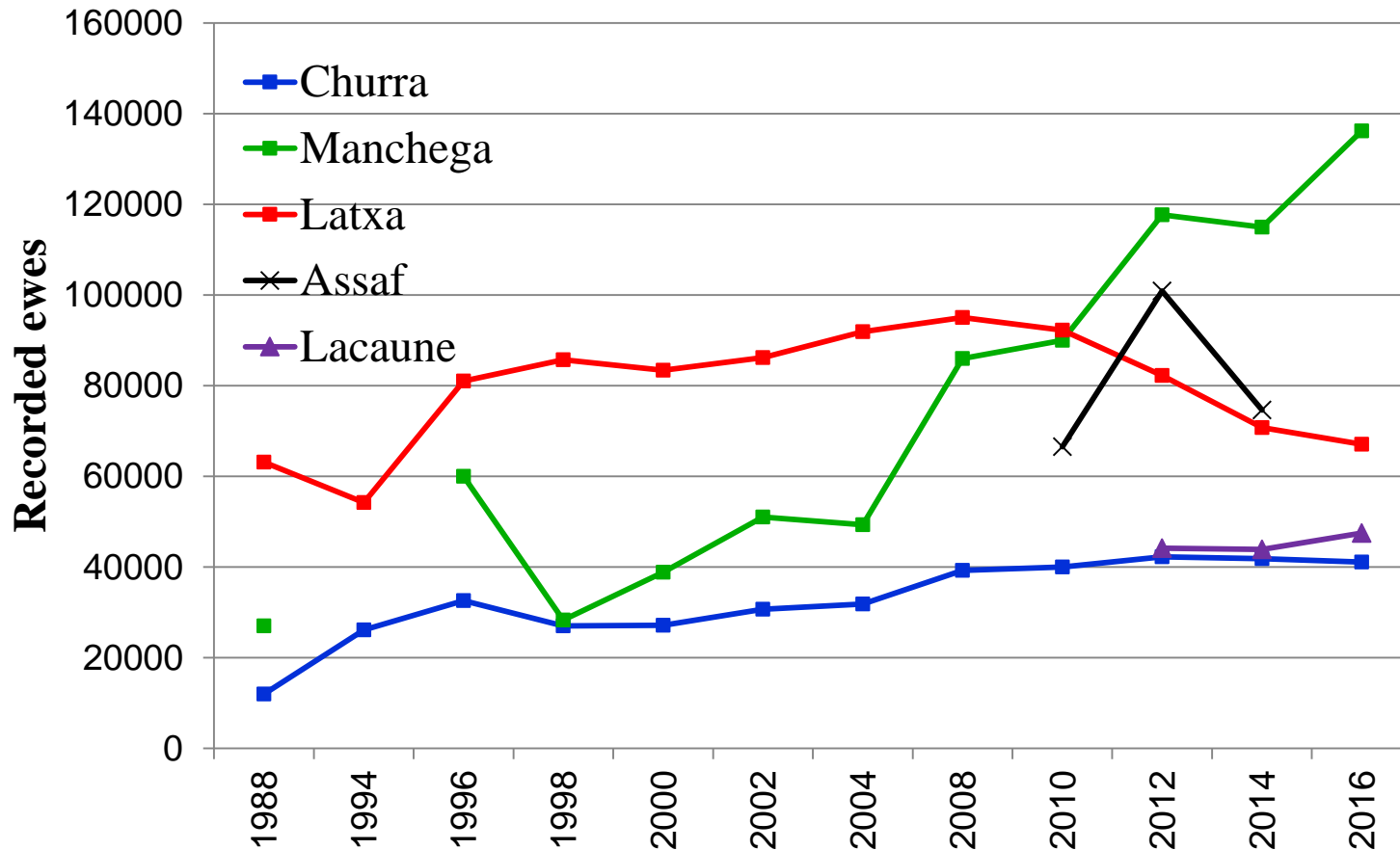
Decrease in all breeds



# Evolution of number of recorded ewes in some major French breeds (ICAR Puerto Varas 2016)



# Evolution of number of recorded ewes in some major Spanish breeds (ICAR Puerto Varas 2016)



# **Methods, recording intervals, sampling**

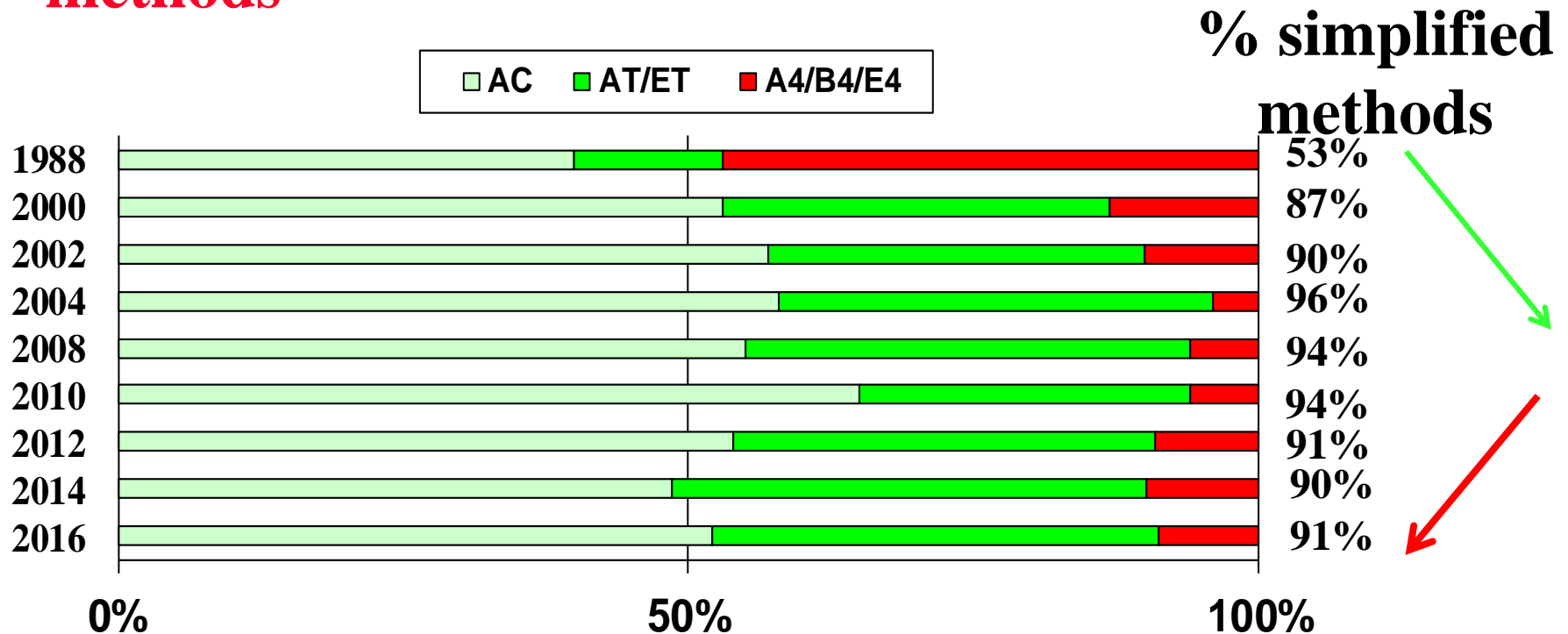
# Methods and recording intervals

(ICAR Puerto Varas 2016)

Countries	A4	E	AT	AC
Greece	100%			
Germany	69% (including B4)	8%	23%	
Czech Rep.		No more E since 2013	100%	
Croatia			100%	
Slovenia			100%	
Italy			Part	Part (Sarda breed)
Spain			100%	
Churra/Manchega/Assaf			Part (70%)	Part (10%)
Lacaune	Part (20%)		Part (43%)	Part (57%)
Latxa & Karranz.				
France				100%
Slovak Rep.				100%

# Simplification of Milk recording

**Milk yield : use in stagnation of simplified (AT or AC) methods**



**Objective has been reached  
... but could be better**

# Methods and recording intervals

(ICAR Puerto Varas 2016)

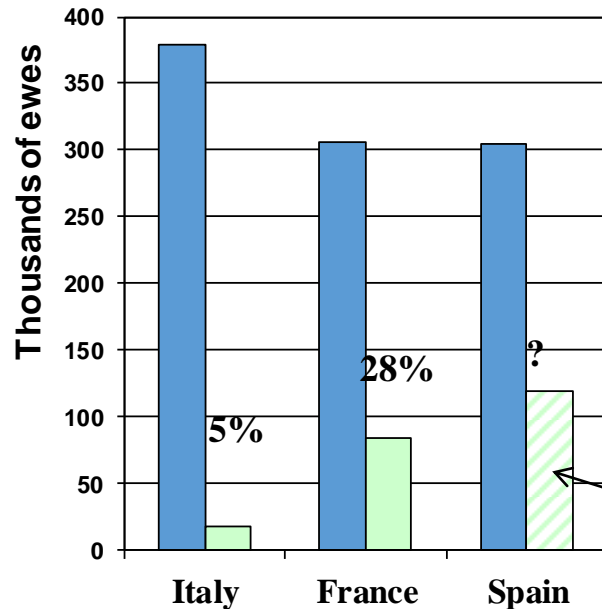
**Simplified methods : between 7 & 8 / 9 countries**

A4	<b>Greece, Germany (69%)</b>
E	<b>Germany (8%)</b>
AT	<b>Slovenia, Croatia, Czech, Germany (23%)</b>
AT & AC	<b>Italy, Spain</b>
AC	<b>France, Slovak</b>

# Simplification of Milk quality recording

(ICAR Puerto Varas 2016)

Italy, France & Spain represent **88.7%** of all the recorded dairy sheep in ICAR member countries



Figures 2009 for Spain

**HIGH COST OF RECORDING IN SHEEP**

...

**... SIMPLIFIED STRATEGIES OF RECORDING**

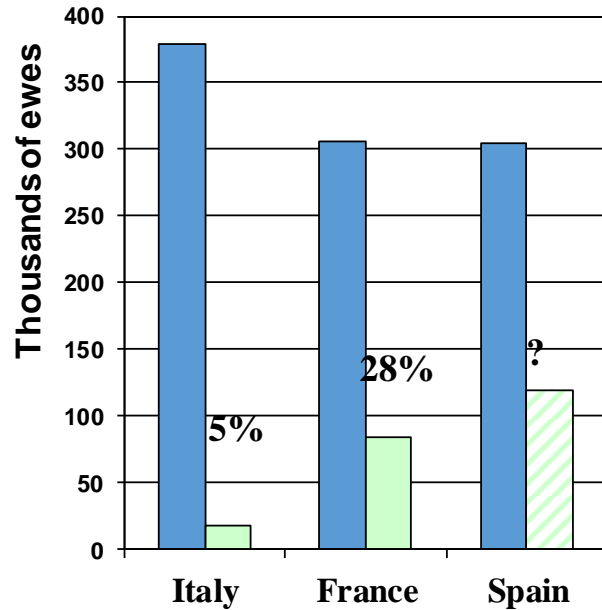
→ About one fifth of the recorded ewes are submitted to qualitative recording

→ In France, only half the test-days are sampled (3/6 per ewe)

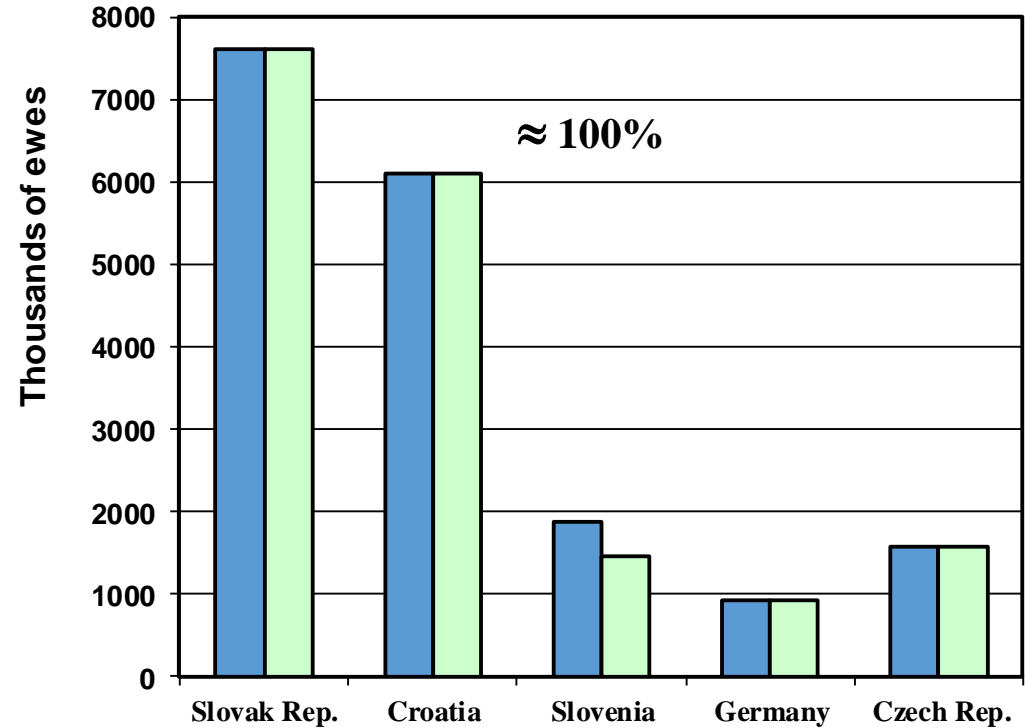
▪ **Relevant for genetic purposes**

▪ **But not compatible with a too low accuracy of measures**

# Part of the ewes in official milk recording submitted to qualitative recording (ICAR Puerto Varas 2016)



■ Ewes in official milk recording  
■ Ewes with samplings/analysis



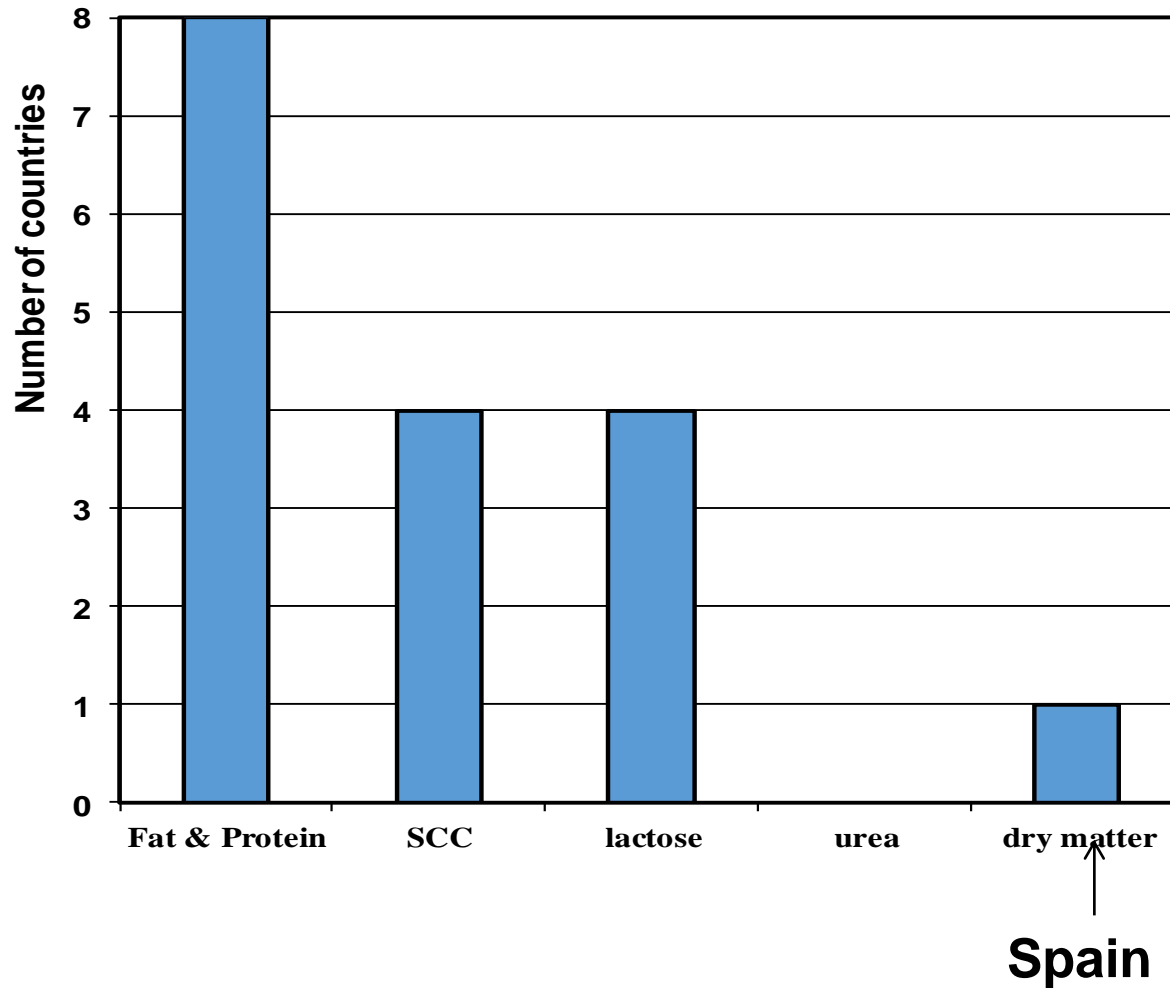
■ Ewes in official milk recording  
■ Ewes with samplings/analysis

Part-lactation sampling : France, Italy, Slovak Rep.



# Type of analysis done by countries

(ICAR Puerto Varas 2016)



# Type of analysis done by countries

(ICAR Puerto Varas 2016)

Countries	F	P	Lactose	SCC	Urea	Dry matter
Slovenia	X	X				
Slovak	X	X	X			
Germany	X	X				
France	X	X		X		
Czech	X	X	X	X		
Croatia	X	X	X	X		
Greece	No analysis					
Italy (Sarda)	X	X				
Spain						
Latxa/Karranzana	X	X	X	X		X
Manchega	X	X		X		X
Lacaune	X	X		X		
Churra/Castellana	X	X	X			

# Method used and number of ewes sampled

(ICAR Puerto Varas 2016)

Countries [2014 or 2015]	Categories of ewes	Number of ewes	Method
Greece	No qualitative recording		
Germany		932	<b>A4,B4,E4, AT,BT</b>
Czech			<b>AT</b>
Croatia		6,109	<b>AT</b>
Slovenia	All ewes	1,463	<b>AT</b>
Spain (Latxa) (Lacaune) (Other)			<b>AC</b> <b>A4</b> <b>AT</b>
Slovak	Parity 1 to 3	7,597	<b>AC</b>
Italy (Sarda)	Parity 1	17,777	<b>AT</b> <b>&amp; Part-lactation sampling</b>
France Pyrenean breeds Lacaune breed	Parity 1 Parity 1 & 2	19,041 65,091	<b>Part-lactation sampling</b>

# **Milk yield, AI & breeding programs**

# Milk yield : type of lactation calculation

(ICAR Puerto Varas 2016)

- If milking since lambing

Lambing

Drying off



- If suckling period

Lambing

Weaning

Drying off



**TSMM = Total Suckled + Milked Milk**  
(not recommended)

# Milk yield : type of lactation calculation

(ICAR Puerto Varas 2016)

Countries	Lactation calculation	Production of reference
Italy	<b>TSMM</b> , <b>TMM</b>	<b>TMM</b>
Germany	<b>TMY</b>	<b>TMY</b> (150)
Slovak Rep.	<b>TMM</b>	<b>TMM</b> (150)
France	<b>TMM</b>	
Greece	<b>TMM</b>	<b>TMM</b>
Slovenia	<b>TSMM</b> , <b>TMM</b> , <b>TMY</b>	
Croatia	<b>TSMM</b> , <b>TMM</b>	

# Milk yield : type of lactation calculation

(ICAR Puerto Varas 2016)

Countries	Lactation calculation	Production of reference
<u>Spain</u>		
Churra	<b>TSMM</b> , <b>TMM</b>	<b>TMM</b> (120)
Manchega, Latxa/Karr.	<b>TSMM</b> , <b>TMM</b>	<b>TSMM</b> (120), <b>TMM</b> (120)
Lacaune	<b>TMY</b>	<b>TMY</b> (120)
Castellana	<b>TSMM</b>	<b>TMM</b> (168)
Merina de Grazalema	<b>TMM</b>	<b>TMM</b> (157)
Colmenarena, Rubia de El Molar	<b>TMM</b>	<b>TMM</b> (120)

# Milk yield : results for some population

(ICAR Puerto Varas 2016)

Countries [2015]	Average MY per recorded ewe in liters (length in days) [a = TMY / b = TMM / c = TSMM / ref = reference length in days]		
	Yearlings	Adults	All ewes
<b>CROATIA</b>	[b]	[b]	[b]
East Friesian	199	185	189
Istrian Pramenka	132	163	156
Paška	76	105	102
<b>CZECH REP.</b>			[?]
East Friesian			277
<b>GERMANY</b>			[a]
East Friesian			249 (ref: 150)
Lacaune			372 (ref: 150)
<b>FRANCE</b>	[b]	[b]	[b]
Lacaune	246 (152)	316 (176)	299 (170)
Manech tête rousse	184 (142)	220 (163)	215 (161)
Basco-Béarnaise	140 (107)	204 (159)	194 (151)
Manech tête noire	138 (126)	163 (151)	161 (149)
Corse	92 (127)	154 (197)	143 (184)



# Milk yield : results for some population

(ICAR Puerto Varas 2016)

Countries [2015]	Average MY per recorded ewe in liters (length in days)		
	[a = TMY / b = TMM / c = TSMM / ref = reference length in days]		
	Yearlings	Adults	All ewes
<b>SLOVAK REP.</b>			[b]
East Friesian			239
Lacaune			227
Hybrids			162
Improved Valachian			111
Tsigai			118
Valachian			119
<b>GREECE (data 2013)</b>			[b]
Frisarta			234
Lesvos			157
Chios			303
(2012) Sfakion			143
Agriniou			181
Karagouniki			143
Katsika			129
Kalaritiki			123

# Milk yield : results for some population

(ICAR Puerto Varas 2016)

Countries [2014]	Average MY per recorded ewe in liters (length in days) [a = TMY / b = TMM / c = TSMM / ref = reference length in days]		
	Yearlings	Adults	All ewes
ITALIA	[b]	[b]	[b]
Sarda	141	208	201 [ref]
Valle de Belice	120	188	186 [ref]
Comisana	103	187	183 [ref]
Langhe	104	158	148 [ref]
Massese	110	129	127 [ref]

Since 2009 : TMM / ref

# Milk yield : results for some population

(ICAR Puerto Varas 2016)

Countries [2015]	Average MY per recorded ewe in liters (length in days) [a = TMY / b = TMM / c = TSMM / ref = reference length in days]		
	Yearlings	Adults	All ewes
<b>SLOVENIA</b> Improved Bovec Bovec Istrian Pramenka			[b] 244 (230) 139 (203) 99 (196)

# Milk yield : results for some population

(ICAR Puerto Varas 2016)

Countries [2015] (2014 or 2013 for some breeds)	Average MY per recorded ewe in liters (length in days)		
	[a = TMY / b = TMM / c = TSMM / ref = reference length in days]		
	Yearlings	Adults	All ewes
<b>SPAIN</b>			
Churra	131 [c] (ref : 120)	133 [c] (ref : 120)	133 [c] (ref : 120)
Latxa (2014)	148 [c] (ref : 120)	195 [c] (ref : 120)	173 [c] (ref : 120)
Latxa blond-faced (2013)	179 [c] (ref : 120)	231 [c] (ref : 120)	
Latxa black-faced (2013)	138 [c] (ref : 120)	206 [c] (ref : 120)	
Karranzana (2014)	153 [c] (ref : 120)	160 [c] (ref : 120)	
Manchega	200 [c]	225 [c]	215 [c]
Lacaune (2014)	306 [a] (ref : 120)	363 [a] (ref : 120)	333 [a] (ref : 120)
Merina de Grazalema	102 [b] (ref : 168)	125 [b] (ref : 168)	122 [b] (ref : 168)
Colmenarena	79 [b] (ref : 120)	99 [b] (ref : 120)	95 [b] (ref : 120)
Rubia del Molar	54 [b] (ref : 120)	65 [b] (ref : 120)	64 [b] (ref : 120)
Castellana (2014)	50 [c]	67 [c]	62 [c]

# Breeding schemes and selection criteria

(ICAR Puerto Varas 2016)

## FRANCE - 2015

	Number of AI progeny-tested rams (2015)	AI (2015) Fresh	Year of starting	Selection criteria
Lacaune	290 (after genomic selection pressure)	407,787	1968	(FY+PY+1/16F%+1/8P%) + 0.5 SCC + 0.5 Udder
Manech tête rousse	172	61,458	1977	FY+PY+F%+P%
Manech tête noire	29	11,063	1977	FY+PY+F%+P%
Basco-Béarnaise	44	14,802	1977	FY+PY+F%+P%
Corse	20	6,633	1992	MY

+ PrP : selection on scrapie resistance

# Breeding schemes and selection criteria

(ICAR Puerto Varas 2016)

## SPAIN – 2014 & 2015

	Number of AI progeny-tested rams	AI Fresh (frozen)	Selection criteria
Latxa	83	21,236	MY, F%, P%, udder
Karranzana	3	185	
Manchega	405	32,235	MY, udder morphology
Castellana	1	290	MY
Churra	28	6,341 (frozen : 440)	MY, P%, udder morphology
Lacaune	21	8,000 (frozen : 230)	MY

+ PrP : selection on scrapie resistance

# Breeding schemes and selection criteria

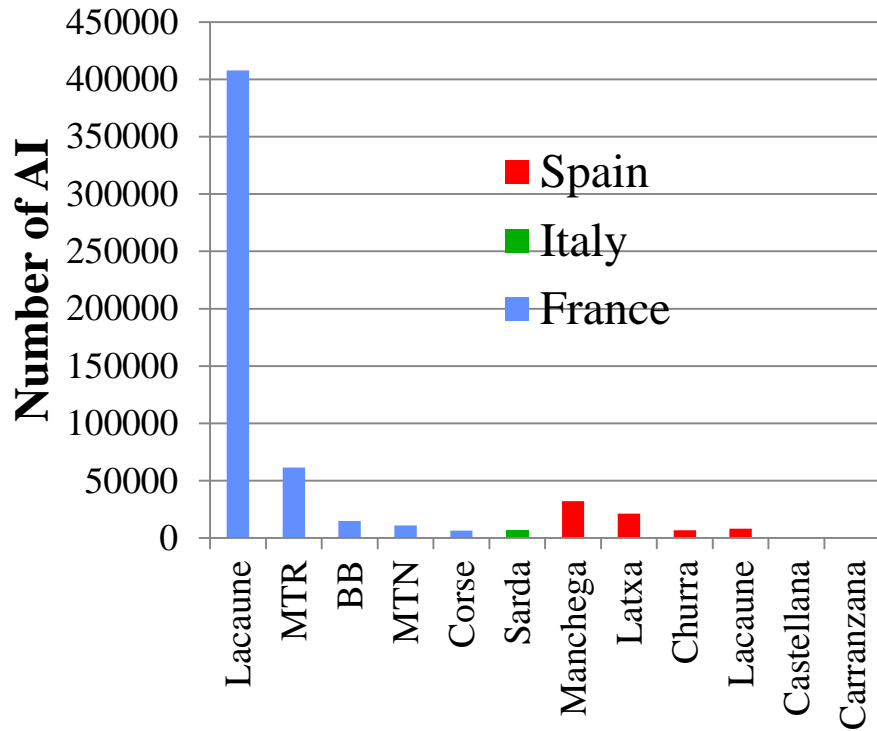
(ICAR Puerto Varas 2016)

## ITALY - 2014

	Number of AI progeny-tested rams	AI (2014) Fresh	Year of starting	Selection criteria
Sarda (IT)	15 (AI) + ? (Natural Mating)	6,500	1986	MY, udder

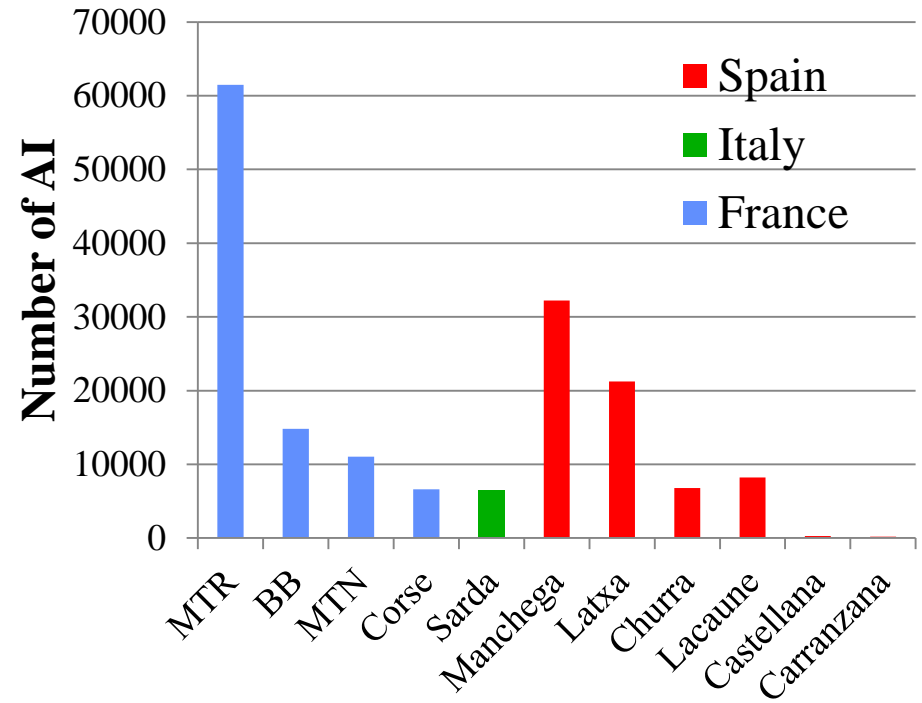
+ PrP : selection on scrapie resistance

# Number of AI (ICAR Puerto Varas 2016)



With French Lacaune

**577,200 AI on the whole**



Without French Lacaune

**Figures 2015**



# **Other items**

**milk recording equipment**

**molecular information**

**recording of other traits**

# Milk recording equipment

## (ICAR Puerto Varas 2016)

Countries [2015]	JARS	MILK METERS
CROATIA	Cartel Germany (Vol, Sampler)	
CZECH REP.	Tru-Test (Tru-Test Mini)	
FRANCE	Gély (ex. Dintilhac (Vol, Sampler)	
GERMANY (2011)		Tru-Test (Weight)
GREECE (2013)		Hector, Flaco, Valko, Nicolini, Fullwood, Franco, OMC, Albino, Strango, Westfalia, Milkplan, Interplus, DeLaval, Manovak (Vol, Sampler)
SLOVAK REP.	Fisher Slovakia (vol)	Berango (Vol., no sampler) Milkovis (Vol., no sampler)
SLOVENIA (2012)		Tru-Test, Girotech (Weight, Sampler)

# Milk recording equipment

## (ICAR Puerto Varas 2016)

Countries [2015]	JARS	MILK METERS
ITALY	Mibo-Girotech Royal (vol, sampler)	Tru-Test mod. H.I. (weight, sampler) Waikato MK5 (vol, sampler) <b>Afifree</b> (weight, sampler) <b>DeLaval MM25-27</b> (weight, sampler)
SPAIN		Alfa Laval Schneder Berango (vol, sampler) Tru-Test (weight, sampler) GEA (weight, sampler) <b>DeLaval</b> (weight, sampler) <b>Afikim</b> (weight, sampler) Flaco (vol, sampler) Westfalia (vol, sampler) MIBO (vol, sampler)

*Churra* : Berango / *Latxa* : MIBO / *Manchega* : DeLaval, Westfalia, Flaco

# Molecular information (ICAR Puerto Varas 2016)

Countries [2015]	FILIATION TEST	PRP GENOTYPING	OTHER
FRANCE	Rams genotyped in 54k de facto on filiation tests	13,351 analysis (use in selection)	SNP genotyping (about 2,379 54k) for genomic selection
ITALY (2013)		9,713 analysis (use in selection)	SNP genotyping for experimental genomic selection
SLOVAK REP.		2,427 analysis (use in selection)	
SLOVENIA		Yes (use in selection)	
CROATIA	Samples collected but no analysis		
CZECH REP.		Yes (use in selection)	
SPAIN	46,966 animals (11-21 MRK)	7,947 (use in selection)	

# Recording of other traits (ICAR Puerto Varas 2016)

Countries [2015]	TRAITS REPORTED TO BE AT LEAST ON-FARM RECORDED
CROATIA	Reproductive traits   Birth weight
CZECH REP.	Reproductive traits   Weights
FRANCE	Reproductive traits, <b>Udder score (Lacaune and Pyrenean breeds)</b> , Causes of culling
ITALY	Morphological evaluation, <b>Udder score</b> (Sarda)
SLOVAK REP.	Reproductive traits   Weights
SLOVENIA	Offspring birth weight   Offspring weaning weight   Litter size
SPAIN	<b>Udder score</b> (most breeds)   Reproductive traits   Weights & growths (some breeds)   Longevity (some breeds)

# Communication

All these slides will be available on the web site at the following address :

<http://www.icar.org/index.php/technical-bodies/working-groups/performance-recording-of-dairy-sheep/>

# Agenda 5

## Addition to the agenda

- ...

# Agenda 6

## Date of next meetings

Edinburgh (UK) : 12-16 June 2017

41st ICAR Biennial Session : Auckland (NZ)  
on 7-11 February 2018

Czech Republic : 2019

+ possible WebConf meeting of the SGC-WG  
(not scheduled so far)



# Agenda 7

## Closure