Meeting of the ICAR Working Group on Milk Recording of Sheep
Niagara Falls, USA, 17 June 2008

Draft agenda

- Changes in the constitution of the group
- Main activities of the WG over the last 2 years
- Presentation of the results of the on-line enquiry
- Co-operation with other ICAR bodies
  - -Recording devices
  - -Analysis devices
- Perspectives concerning the WG
- Miscellaneous

Members of the Working Group

Jean-Michel Astruc	France
Francis Barillet	France
Antonello Carta	Italy
Mauro Fioretti	Italy
Elisha Gootwine	Israel
Drago Kompan	Slovenia
Franz Josef Romberg	Germany
Eva Ugarte	Spain

Main activities of the WG over the last 2 years (1/2)

No emendations of the guidelines

- Last emendations in 2005

Report of the activities, communication

- Report at the joint meeting of the Board & Chairpersons in Verona (2007)
- Synthesis of the situation of the WG

On-line enquiry

- Construction of the on-line enquiry : 2006
- Submissions possible from May 2006
- Urging ICAR members on filling in the enquiry

Main activities of the WG over the last 2 years (2/2)

Co-operation with other bodies of ICAR

- Recording devices Sub-Committee
- WG on Milk Recording of Goats
- Working party on On-farm Milk Analysis

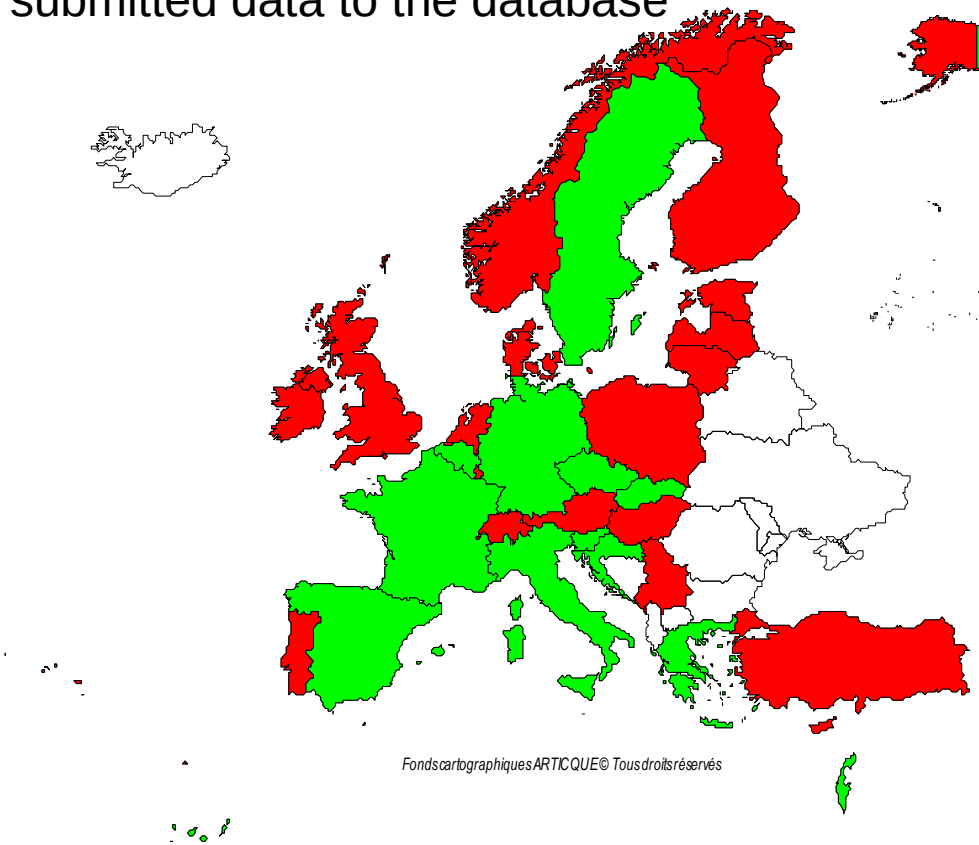
PRESENTATION

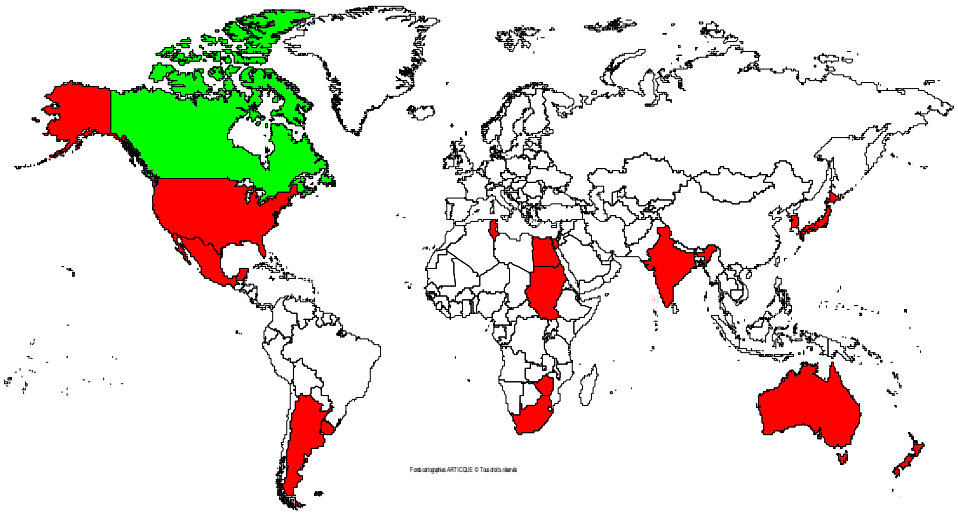
OF THE RESULTS

OF THE ON-LINE ENQUIRY

Yearly enquiry on-line

Green : ICAR countries having submitted data to the database





<u>ONLY</u> 13 submissions over 40 ICAR member countries

Remind regularly the countries

Survey on milk recording of sheep

- 39 countries with authorization to input data
- 12 + 1 answers

Belgium
Canada
Croatia
Czech Rep.
France
Germany
Greece
Israel
Italy
Slovak Rep.
Slovenia
Spain
Sweden

Portugal, Cyprus ?

Recorded population - countries (ICAR 2007)

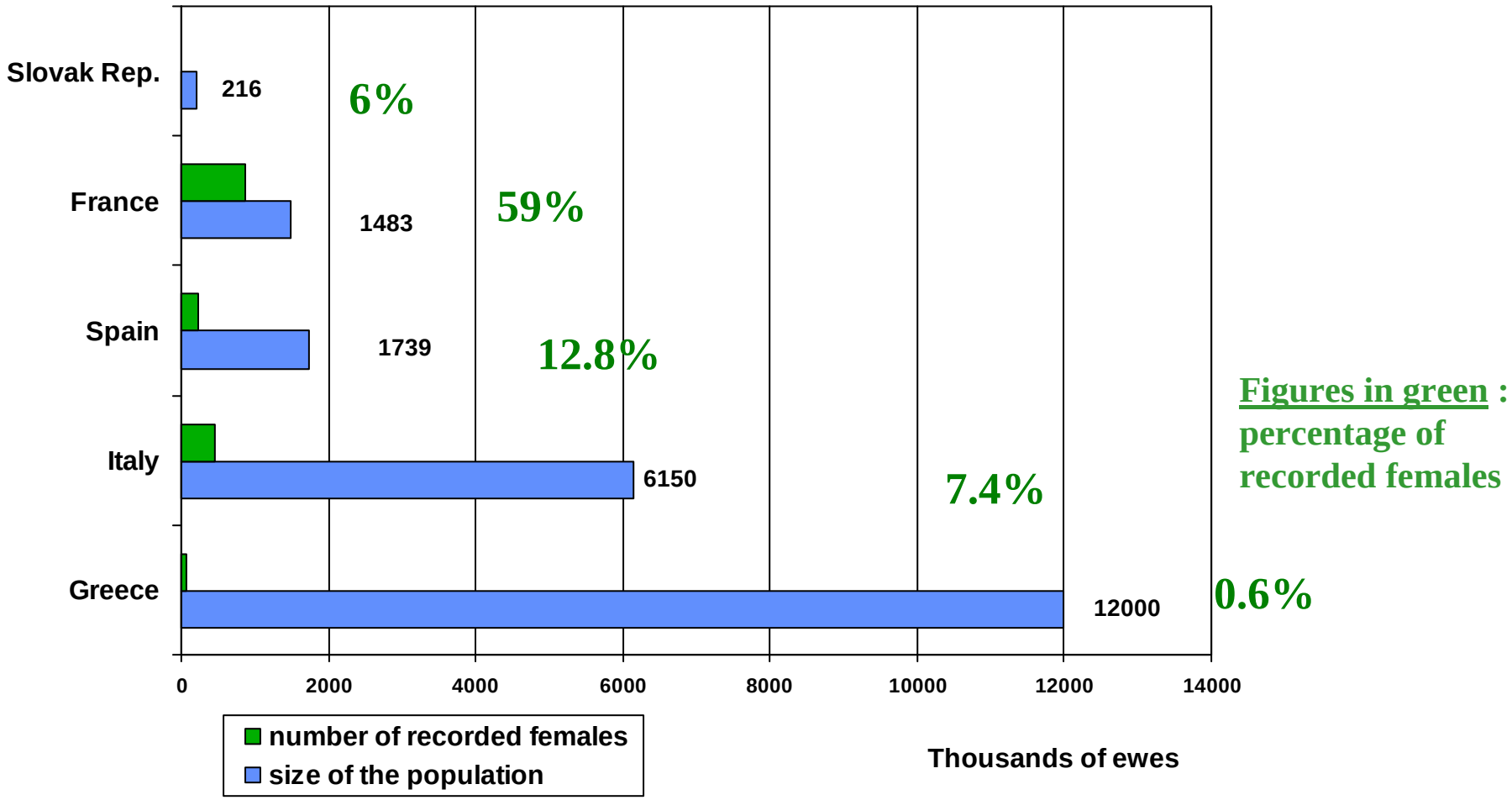
Countries	Size of population		Recorded population		% recorded population
	#flocks	# ewes	#flocks	# ewes	
Italy (2007)		6,150,000 [1]	3,049	482,698	7.8%
France (2007) [2]	5,170	1,483,000	806	302,199	20.4%
Spain (2006) [3]	10,719	1,739,000	422	222,358	12.8%
Greece (2006)	150,000	12,000,000	84	70,658	0.6%
Israel (2007)	64	35,000	22	18,600	53.1%
Slovak Rep (2005)		216,000 [2]	104	12,869	6.0%
Croatia (2006)	683	34,270	93	5,361	15.6%
Slovenia (2007)	120	4,900	44	3,396	69.3%

[1] figures dating from 2003 [2] 570,755 in D recording [3] local breeds only

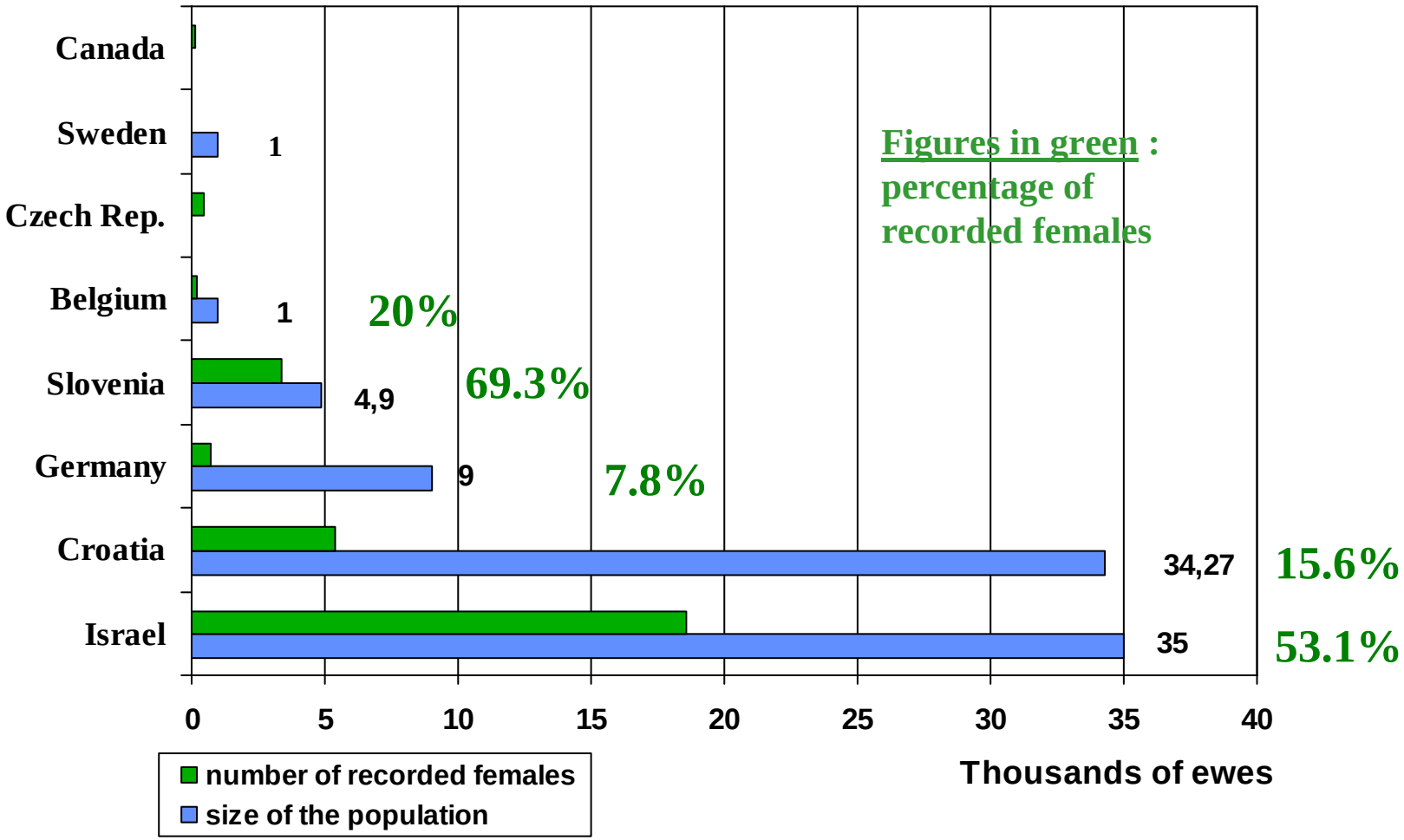
Recorded population - countries (ICAR 2007)

Countries	Size of population		Recorded population		% recorded population
	#flocks	# ewes	#flocks	# ewes	
Germany (2007)	620	9,000	77	705	7.8%
Czech Rep (2007)			18	443	
Belgium (2006)	13	1,000	1	200	20%
Canada (2005)			1	160	
Sweden (2006)	10-15				
TOTAL			4,721	1,119,647	

Sheep milk recording in countries with more than 100,000 ewes (ICAR 2007)



Sheep milk recording in countries with less than 50,000 ewes (ICAR 2007)



Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Czech Rep. (2007)	Friesian			16	334	
	Lacaune			2	109	
Slovenia (2007)	Bovec	80	2,700	29	2,079	77.0 %
	Istrian Pramenka	15	1,100	4	865	78.6 %
	Improved Bovec	25	1,100	11	452	41.1 %
Germany (2007)	Ost Friesisches Milchschaf	620	9,000	77	705	7.8 %

Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population	Ewes in D method
		#flocks	# ewes	#flocks	# ewes		
France (2007)	Lacaune	2,650	906,000	389	172,697	77.9 %	533,086
	Manech Tête Rousse	1,170	282,000	213	72,861	35.6 %	27,563
	Corse	420	95,000	73	21,095	24.0 %	1,725
	Basco-Béarnaise	420	80,000	76	20,157	32.7 %	5,986
	Manech Tête Noire	510	120,000	55	15,389	14.5 %	2,055

Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Belgium (2006)	Mouton laitier	13	1,000	1	200	20%
Israel (2007)	Assaf			21	17,100	
	Improved Awassi			1	1,500	
Sweden (2006)	Swedish Finewool Sheep	10-15				
Croatia (2006)	Istrian	33	2,270	33	2,261	100 %
	Paska	600	30,000	28	1,944	6.5 %
	East Friesian	50	2,000	32	1,156	57.8 %

Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Greece (2006)	Lesvou	1,650	254,000	139	21,300	8,4 %.
	Xios	112	24,500	56	10,713	43.7 %
	Karagouniki	2,885	191,200	81	9,400	4.9 %
	Sfakion	480	58,000	71	8,744	15.1 %
	Frisarata	530	44,400	66	7,187	16.2 %
	Serron	70	8,200	54	6,698	81.7 %
	Kefallinias	20	3,000	14	2,500	8.3 %
	Karistou	450	6,000	17	2,100	35 %

Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Greece (2006)	Zakynthou	10	840	10	840	100 %
	Agriniou	3	653	3	653	100 %
	Kimis	10	523	10	523	100 %
	Kalaritiki	19	4,361			0
	Pilioritiki	32	2,637			0
	Glossas Skopelous	20	2,090			0
	Florina-Pelagonias	1	517			0

Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Italy (2007)	Sarda	13,000	3,600, 000	1,110	250,272	7.0 %
	Valle del Belice		?	845	114,340	
	Comisana		666,000	604	60,936	9.1 %
	Pinzirita		?	304	47,226	
	Massese			60	4,225	
	Delle Langhe			97	3,417	
	Barbaresca			17	1,346	

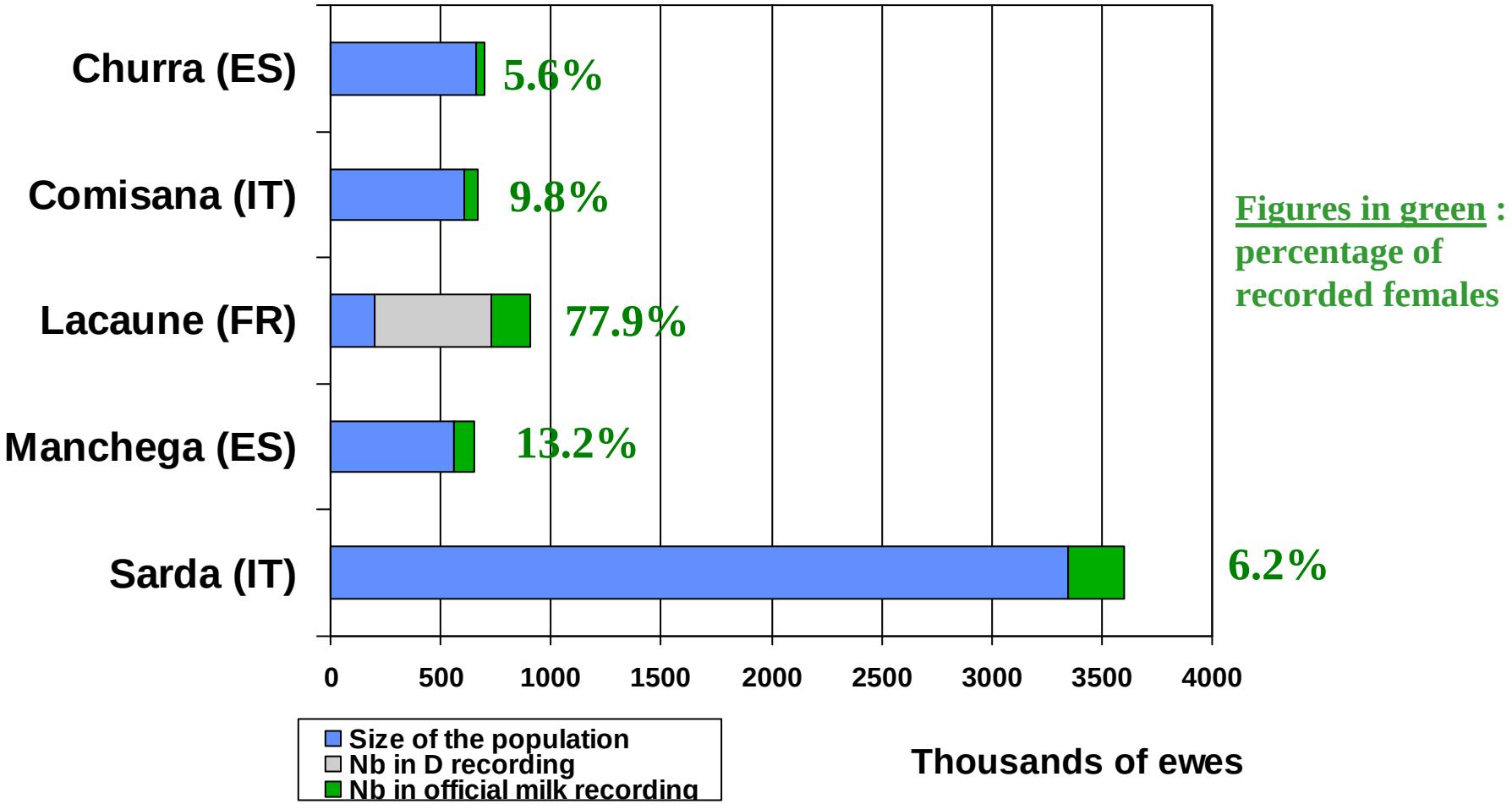
Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Italy (2007)	Moscia Leccese			10	815	
	Altamrana			1	117	
	Corniglio			1	4	
Spain (2006)	Manchega	1,000	650,000	131	86,000	13.2%
	Latxa CN	4,488	207,595	132	62,215	30.0%
	Churra	1,237	700,000	82	39,283	5.6%
	Latxa CR	3,393	170,502	69	32,784	19.2%
	Karranzana	601	10,720	8	2,076	19.4%
	Assaf Navarra	30	10,000	5	4,500	

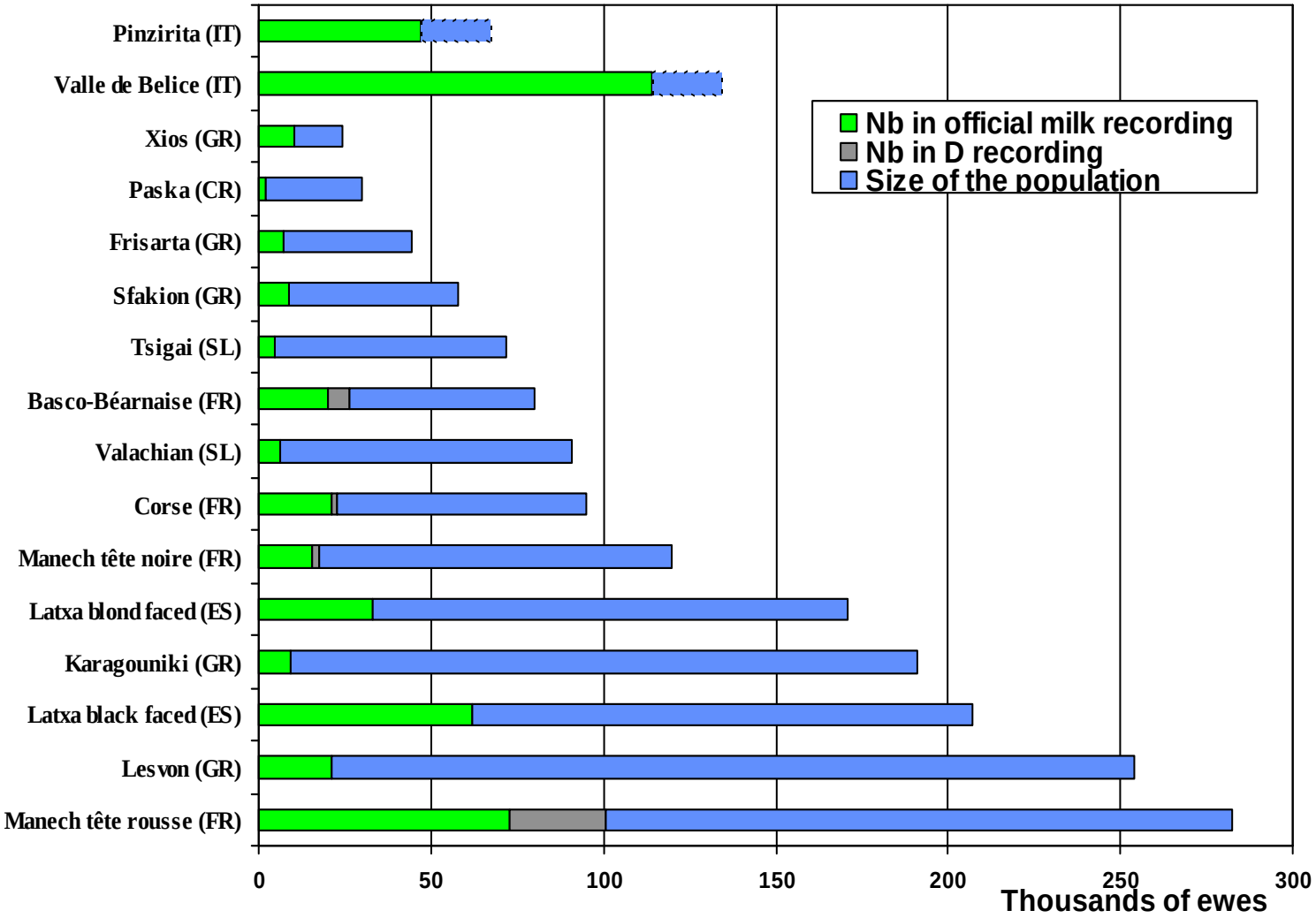
Recorded population - breeds (ICAR 2007)

Countries	Breeds	Size of population		Recorded population		% recorded population
		#flocks	# ewes	#flocks	# ewes	
Slovak Rep. (2005)	Improved Valachian		91,000 (*)	44	6,179	6.8 %
	Tsigai		72,000 (*)	31	5,168	7.2 %
	East Friesian			8	103	
	Lacaune			7	220	
	hybrids			14	1,199	

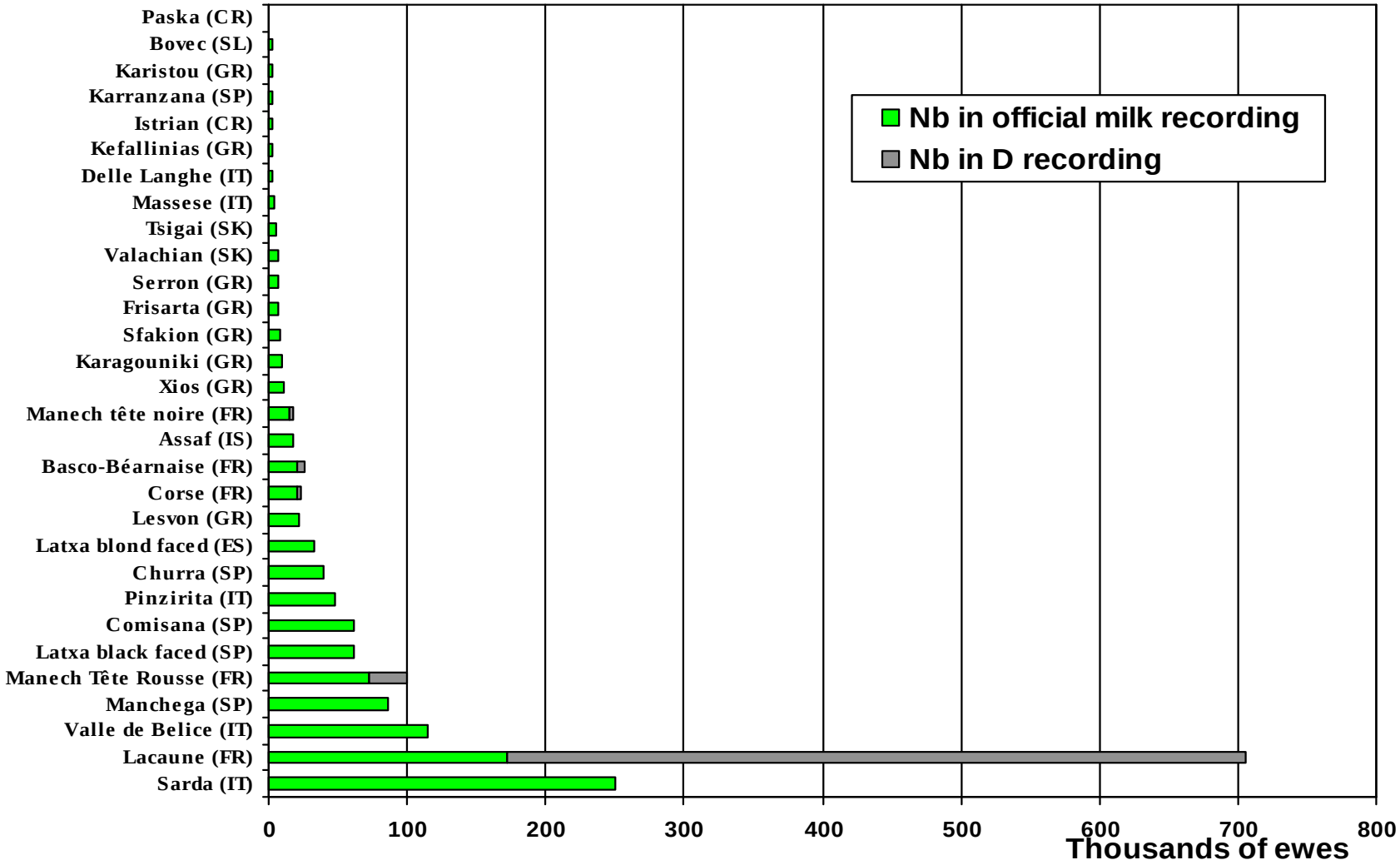
Sheep milk recording in breeds with more than 500,000 ewes (ICAR 2007)



Sheep milk recording in breeds with more than 20,000 ewes (ICAR 2007)



Sheep milk recording in breeds with more than 2,000 recorded ewes (ICAR 2007)

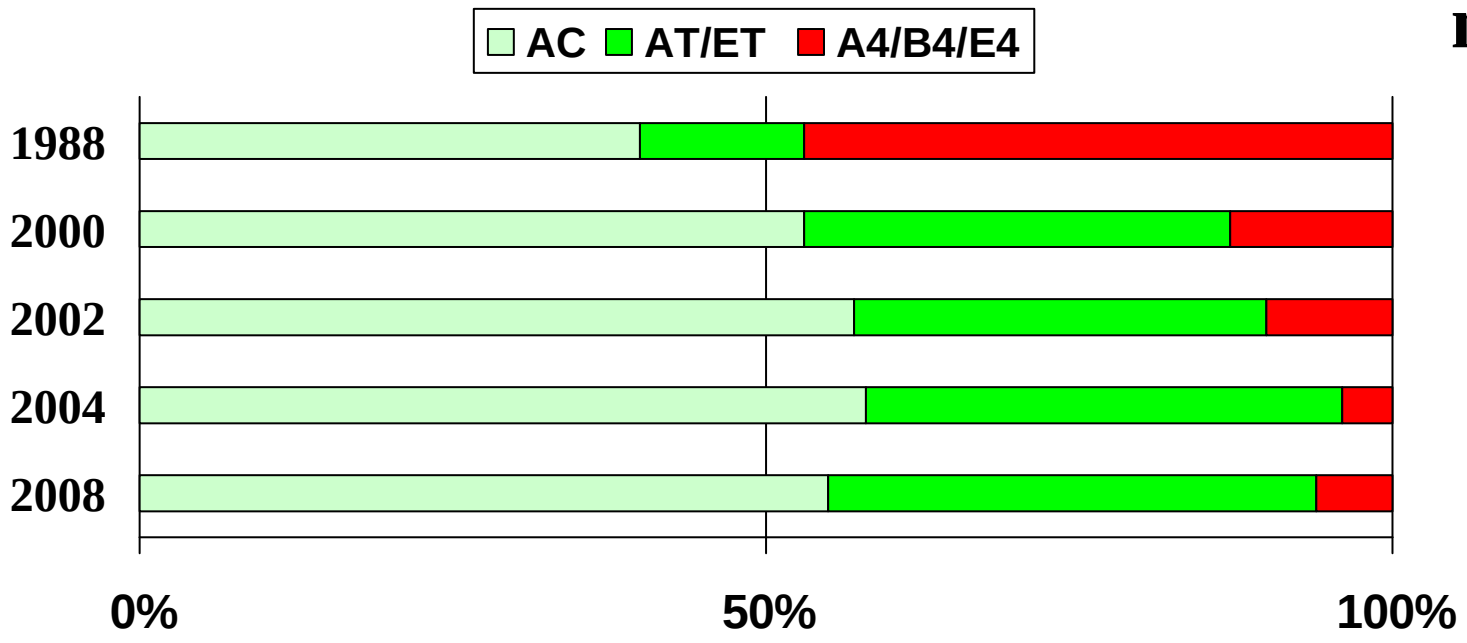


Methods and recording intervals

Countries	A4	AT	AC	E
Belgium		100		
Canada		100		
Slovenia		100		
Germany	64	8		28
France			100	
Czech Rep.		Part		Part (ET)
Spain				
Churra & Manchega		100		
Latxa & Karranz.		Part	Part	
Greece	100			
Croatia		100		
Slovak Rep.			100	
Italy		Part	Part	

Simplification of Milk recording

<u>Milk yield</u> : increasing use of simplified (AT or AC) methods



% simplified methods

53%
87%
90%
96%
94%

Objective has been reached

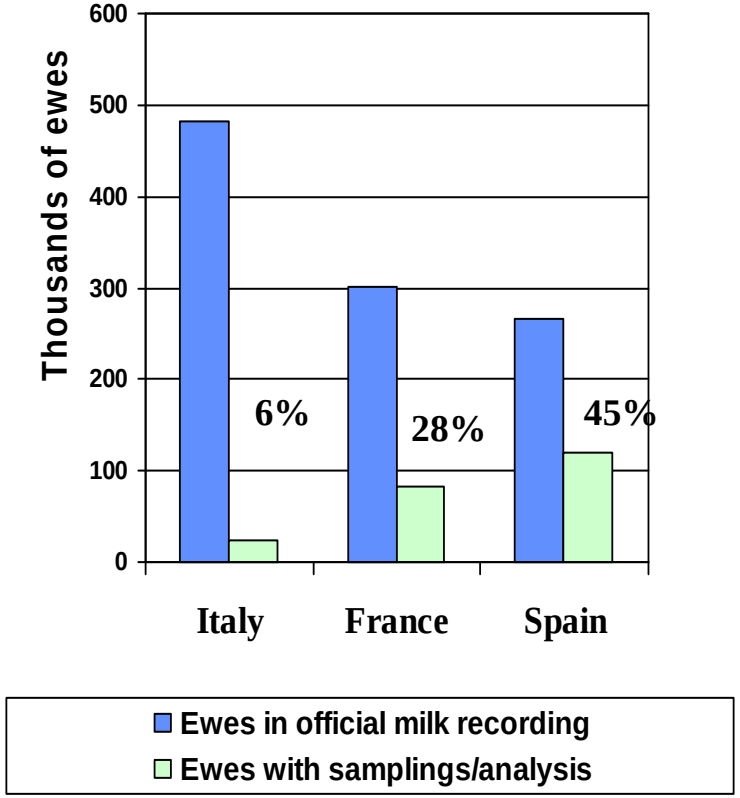
Methods and recording intervals

Simplified methods : 8/11 countries

AT	**Belgium, Slovenia, Croatia, Canada**
AC	**France, Slovak**
AT & AC	**Italy, Spain**
A4	**Greece, Germany (2/3), Czech (part)**
E	**Germany, Czech (part)**

Simplification of Milk quality recording

Italy, France & Spain represent **90% of all the recorded dairy sheep** in ICAR member countries



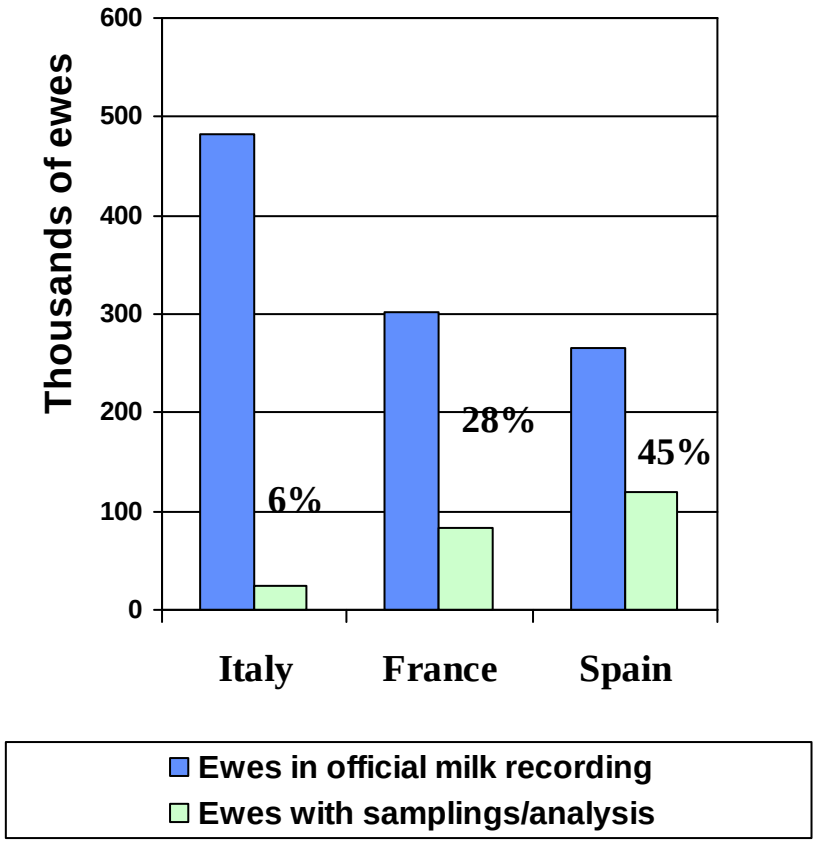
HIGH COST OF RECORDING IN SHEEP …

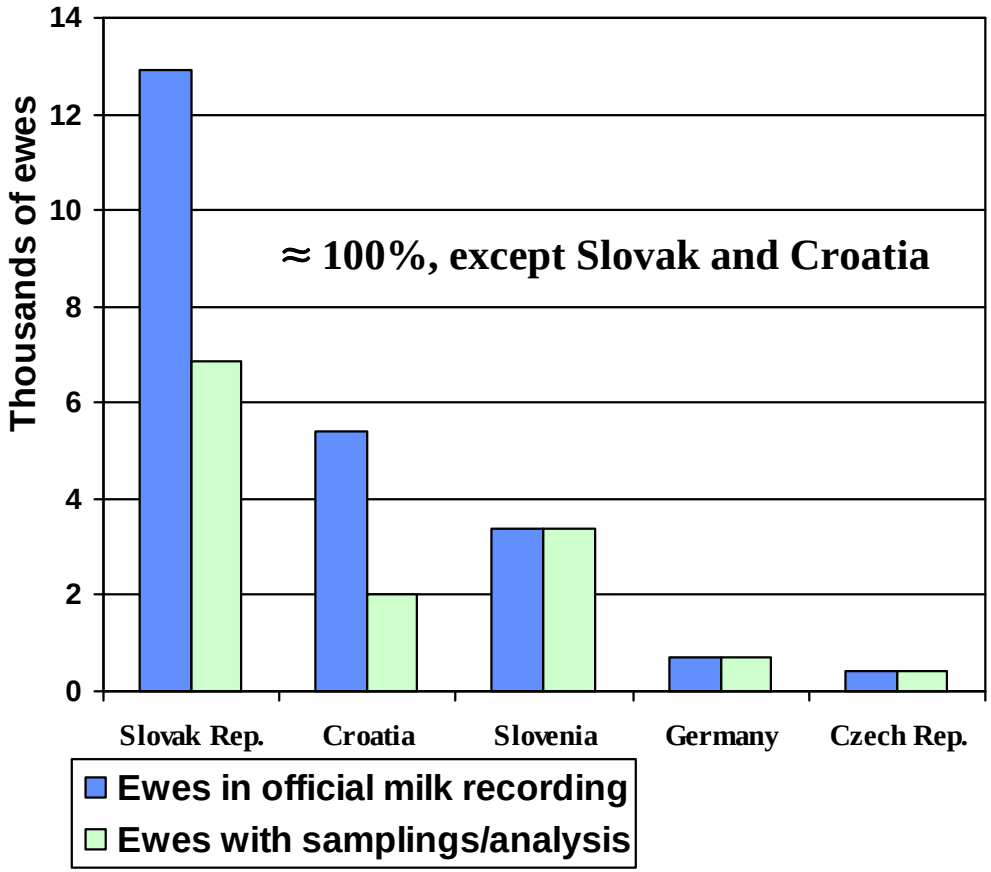
… SIMPLIFIED STRATEGIES OF RECORDING

- Only 21% 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**

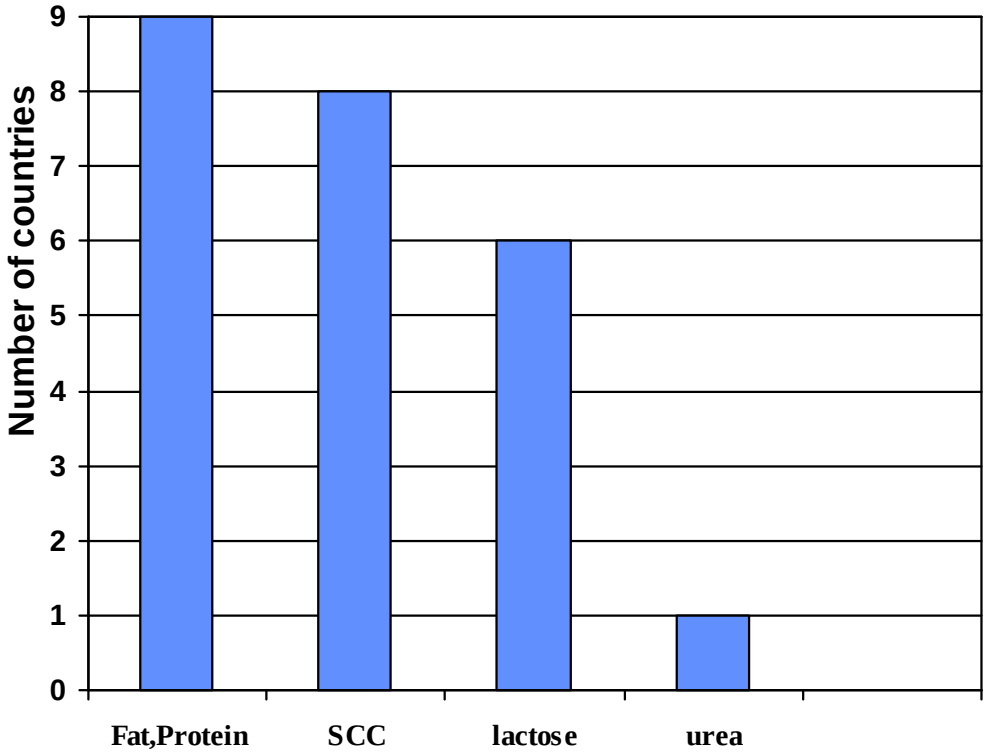
Part of the ewes in official milk recording submitted to qualitative recording





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

Type of analysis done by countries



SCC : all except Italy

Lactose : Croatia, Czech, Germany, Slovak, Slovenia, Spain

Urea : Germany

Breeding schemes and selection criteria

FRANCE

	Number of AI progeny-tested rams (2007)	AI (2007) fresh	Year of starting	Selection criteria
Lacaune	479	387,000	1968	(FY+PY+1/16F%+1/8P%) + 0.5 SCC + 0.5 Udder
Manech tête rousse	135	57,400	1977	FY+PY
Manech tête noire	37	9,300	1977	FY+PY
Basco-Béarnaise	43	13,800	1977	FY+PY
Corse	29	6,700	1992	MY

+ PrP : selection on scrapie resistance

Breeding schemes and selection criteria

SPAIN

	Number of AI progeny-tested rams	AI (2006) Fresh (frozen)	Year of starting	Selection criteria
Latxa blond-faced	38	13,270	1984	MY
Latxa black-faced	60	16,760	1985	MY
Karranzana	8	234	1985	MY
Manchega	130	34,000	1988	MY
Churra	46	7,450 (frozen : 7,800)	1986	MY + P%

+ PrP : selection on scrapie resistance

Breeding schemes and selection criteria

ITALY

	Number of AI progeny-tested rams	AI (2006) Fresh	Year of starting	Selection criteria
Sarda (IT)	60	13,500	1986	MY, udder morphology

+ PrP : selection on scrapie resistance

Milk yield : type of lactation calculation (ICAR 2007)

countries	Lactation calculation	Production of reference
Belgium	TMM	
Italy	TSMM,TMM	TMM
Slovak Rep.	TMM	TMM (150-160)
Canada	TMY	
Czech Rep.	TSMM,TMM	TSMM,TMM
France	TMM	
Croatia	TSMM,TMM	

Milk yield : type of lactation calculation (ICAR 2007)

countries	Lactation calculation	Production of reference
Germany	TMM,TMY	TMM (150), TMY (150)
Slovenia	TSMM,TMM	
Greece	TMM	TMM
Spain Churra Manchega Latxa/Karr.	 TSMM,TMM TSMM,TMM TSMM,TMM	 TMM (120) TSMM (120), TMM (120) TSMM (120)

Milk yield : results for some population (ICAR 2007)

	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
CROATIA	[b]	[b]	[b]
East Friesian	164 (151)	205 (160)	194 (156)
Paška	92 (137)	124 (141)	122 (141)
Istrian Pramenka	90 (112)	104 (118)	102 (117)
CZECH REP.			[?]
East Friesian			256
GERMANY			[a]
East Friesian			348 (ref :150)
FRANCE			[b]
Lacaune			290 (165)
Basco-Béarnaise			153 (141)
Manech tête noire			134 (138)
Manech tête rousse			177 (149)
Corse			139 (178)

Milk yield : results for some population (ICAR 2007)

	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
SLOVAK REP.		[b]	[b]
East Friesian		251	251
Lacaune		170	170
Hybrids		149	149
Tsigai		105	105
Valachian		103	103
GREECE			[b]
Karagouniki			185
Lesvos			167
Chios			305
Frisarta			268
Serron			150
Sfakion			117
Kefallinias			158

Milk yield : results for some population (ICAR 2007)

	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]
Valle de Belice	129	222	215
Sarda	136	211	203
Comisana	110	191	185
Barbaresca	101	178	170
Langhe	95	160	155
Massese	121	153	151
Pinzirita	96	147	145
Moscia Leccese	91	134	132
Altamurana	59	58	59

Milk yield : results for some population (ICAR 2007)

	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
SLOVENIA			[b]
Bovec			154
Improved Bovec			218
Istrian Pramenka			102
SPAIN			
Churra	84 [b] (ref : 120)	92 [b] (ref : 120)	89 [b] (ref : 120)
Latxa blond-faced	123 [b]	143 [b]	139 [b]
Latxa black-faced	118 [b]	152 [b]	147 [b]
Karranzana	181 [b]	190 [b]	188 [b]
Manchega	180 [c] (ref : 120)	190 [c] (ref : 120)	185 [c] (ref : 120)
Assaf			570 [a] (240 days)

Milk recording equipment

	JARS	MILK METERS
CROATIA	Cartel Germany (Vol, No sampler)	
FRANCE	Gély (ex. Dintilhac (Vol, Sampler, 3,000 in use)	
GERMANY		Tru-Test (Weight)
GREECE		Strago, Westfalia, Hector, Flaco, Akma, Sylco, Westfalia, Full Ward, Milk Line, KTA, OMC, Westfalia, DeLaval, Sillaios, Georgopoulos, Manovak (Vol, Sampler)
SLOVAK REP.		Berango (Vol., Sampler) Milkovis (Vol., Sampler)

Milk recording equipment

	JARS	MILK METERS
ITALY (?)	Alfa Laval Mibo Royal Westfalia Separator Misurator e Italiana (all Vol, NS)	Tru-Test mod. H.I. (Weight, S, 11 in use)
SLOVENIA		Tru-Test (Vol, Sampler, 11 in use) MIBO (Vol., Sampler, 9 in use)
SPAIN		Verango (Vol, Sampler, 144 in use) Electronic (Vol, 4 in use DeLaval, Flaco, Westfalia (Vol, Sampler, 1710 in use) Westfalia (MIBO) (Vol, Sampler, 210 in use)

Molecular information

	FILIATION TEST	PRP GENOTYPING	OTHER
FRANCE	2,500 analysis (1,338 animals progeny-tested + some ewes)	15,948 analysis	Microsatelites (QTL detection program)
GERMANY		711 analysis (61 flocks)	
CZECH REP.		yes	
ITALY	35,000 analysis (140 flocks)	20,000 analysis	Microsatelites (QTL detection program)
SLOVAK REP.		2244 analysis	
SLOVENIA	120 analysis (1 flock)	600 analysis (150 flocks)	
SPAIN	208 animals	63,646 analysis (353 flocks)	Microsatelites (QTL detection program)

Recording of other traits

	TRAITS REPORTED TO BE AT LEAST ON-FARM RECORDED
BELGIUM	none
CROATIA	Reproductive traits, Birth weight
CZECH REP.	Reproductive traits, Weights
FRANCE	Prolificacy, Fertility, Udder score, Longevity, Cause of culling
GERMANY	Reproductive traits, Udder score, Wool quality, Appearance, Longevity, Weights and growths
GREECE (2003)	Prolificacy
ISRAEL (2003)	Prolificacy, Age at first lambing, Open days
ITALY	Morphological evaluation, Udder score (Sarda)

Recording of other traits

	TRAITS REPORTED TO BE AT LEAST ON-FARM RECORDED
SLOVAK REP.	?
SLOVENIA	Litter size and other data on reproductive cycle, Daily gain to weaning (on-farm), daily gain to puberty (on-station)
SPAIN	Udder score
SWITZERLAND (2003)	Prolificacy
TUNISIA (2003)	Prolificacy, Fertility, Longevity, Weights and growths

Co-operation within ICAR

⇨ SC on Recording Devices

Before 2006	2006	2007 - 2008
No device tested/agreed for sheep	First meters tested in sheep (on-farm electronic milk meters) **Are the guidelines relevant for sheep ?**	1 meter passed ICAR tests and portable milk meters ?

- **<u>Requirements</u> are <u>relevant for sheep</u> and do not have to be relaxed.**
- **<u>Separate approval for goats & sheep</u>**

Co-operation within ICAR

Provisionally Approved milk meters for sheep and goats

	Meter	Manufacturer	Species
On-farm fixed meters	Afifree	SAE Afikim	Sheep & goats
	Free Flow Meter SG Additional name: MM25 SG	SCR Engineers Ltd. Sold by DeLaval	Goats
Portable meters	Lactocorder	WMB AG	Goats

Co-operation within ICAR

Afifree

MM25 SG

Lactocorder

Working Party on On-farm Milk Analysis

Object : Milk analysis on the farm for milk recording purposes

WP OMA created in summer 2007

First meeting held on 27 November 2007 in Roma

Program of work : elaboration of guidelines

Chairperson : Olivier Leray

Members : representatives from different working parties of ICAR

Working Party on On-farm Milk Analysis

Milk testing laboratories

Automated indirect methods for rapid testing, reference methods for calibration

AQA frame designed by ICAR for labs

Portable analytical devices / analytical modules

Direct in-line / on-flow analysis

As for recording devices, if the first aim is the benefit of the farmer, use for genetic purposes must be envisaged

ICAR should complement the existing AQA system to assure quality and precision in every system (RECOMMENDATIONS & REQUIREMENTS)

Working Party on On-farm Milk Analysis

Terms & definitions

At-line milk analyser : beside a production line. Sampling error and analysis error.

In-line milk analyser : in the production line (one instrument per milking place). No sample error

Real time milk analyser : during milking through sensors in contact with milk flow. Different from differed time.

Working Party on On-farm Milk Analysis

Outlines of the guidelines

Lower analytical performance → More analysis to be performed

Limits of statistical parameters (repeatability, accuracy, calibration) : multiplying parameter for labs by an equivalent factor : x 2 (at-line) or x 2.5 (in-line).

Minimum record number for uncertainty equivalence : 1,5 (compared to 1 with lab analysis).

For 1 test-day : 2 records instead of 1

Throughout lactation : x 1.5

What is the position of the MRS WG ?

Working Party on On-farm Milk Analysis

Position of the WG ?

In laboratories analysis : limits account for higher concentration in fat and protein in sheep : usual factor 2 suitable.

On-farm analyser : no larger tolerance than the usual factor 2 to maintain accuracy with no more numerous records

Ex. of accuracy	Laboratory	On-farm at-line	On-farm in-line
Cattle	0.10 g/100g	0.20 g/100g	0.25 g/100g
Sheep	0.20 g/100g	0.20 g/100g	0.25 g/100g

PERSPECTIVES CONCERNING THE WORKING GROUP

Ideas ?

Glossary

Udder morphology in the guidelines

Lactation calculation when suckling period

Transfer of data from meters

MISCELLANEOUS