

JORNADA SOBRE CONTROL DEL RENDIMIENTO LECHERO EN ESPAÑA

> 20 NOV 2019

# Situación y perspectivas de futuro del control del rendimiento lechero en España

Salón de Actos Ministerio de Agricultura, Pesca, y Alimentación (Paseo Infanta Isabel, 1)

Mauro Fioretti - A.I.A. Italy

"LA ORGANIZACION DEL CONTROL DEL RENDIMIENTO LECHERO EN ITALIA"







### A.I.A. Associazione Italiana Allevatori



- Non profit private organization (not a government structure) established in 1944
- A.I.A.'s work involves technical and economical activities with the aim of promote and implement an efficient development of livestock breeding and related products for its associates
- It is a second level association, i.e. does not associate breeders directly
- To pursue its institutional goals, the Association collaborates with:

ITALIAN MINISTRY OF AGRICULTURE
ITALIAN MINISTRY OF HEALTH (Veterinarian services)
ITALIAN MINISTRY FOR FOREIGN AFFAIRS
ITALIAN REGIONAL GOVERNMENT INSTITUTIONS (Agricolture Assessorates)
EU AGENCIES (AGEA)
PROFESSIONAL ORGANIZATIONS (e.g. COLDIRETTI, COPA-COGECA,...)
INTERNATIONAL ORGANIZATIONS (e.g. EAAP, ICAR, FESASS, ISO,....)
UNIVERSITIES AND RESEARCH CENTERS



### A.I.A. Associazione Italiana Allevatori



#### Main Activities:

- Performance recording activity (milk & meat production)
- National Rural Development Project (LEO Livestock Environment Open Data)
- ➤ Biodiversity management for autochthonous Bovine, Horse, Donkey and Avian species
- Milk reference laboratory (LSL)
- Bovine meat labelling
- International meetings and shows
- Administrative and legal assistance to associates
- > Training for technicians for performance recording
- Participation to EU and international projects (research and development)
- Technical assistance for breeders (Milking device control service)
- ICAR national member





Performance recording activity and subsequent genetic selection are considered of PUBLIC INTEREST because they:

- ➤ Improve PERMANENTLY the genetic value of national livestock population for more productive animals
- Improve the value of livestock and sustainability of farmers
- ➤ Allow public authorities to pursue a national zootechnical politics

Performance recording and selection are requested to have legal basis





Up to 2018: Law 30/1992

- A.I.A. is the only organization in charge for performance recording activity, explicitly mentioned in the text of the law
- Is a direct and mandatory duty directly from Italian Ministry of Agricolture
- Automatic recognition of A.I.A. from Authority
- No possibilities for other structure to perform performance recording



Starting from 2018: EU Regulation 1012/2016 that unifies different regulations for different species in a single and exhaustive set of rules, applied in Italy with Legislative Decree 52/2018

Former Herd Books are now breeding societies and their selective/conservation activity is a breeding program

#### Performance recording goals are:

- Provide data for the genetic program activities
- Feed a unique national zootechnical database
- Provide the information needed for the provision of extension service.

The collection of farm data can be carried out by:

- breeding societies
- on delegation of breeding societies, by third party organizations in order to guarantee the specialization and neutrality of the activity. Third parties must possess specific administrative requirements, such as
- > ICAR certification with the exception of horse and pig species
- > Seated in Italy, non-profit and ensure the capacity to collect data throughout the national territory
- > Have adequate informatic skills and hardware to manage the recorded data.

A National Zootechnical Committee will have the task of regulating, standardizing and directing the activity of data collection on farms.







#### CERTIFICATE OF QUALITY

#### Associazione Italiana Allevatori

for Identification in dairy and beef cattle and other species; Production recording in dairy and beef cattle and other species; Data processing, and Reference milk laboratory

Martin Burke

Rome, November 2018 Certificate number: 2018/11 Valid up-to: November 2023





- A.I.A. in Italy is the only organization that fulfills all the above mentioned law requirement for a data colelction third party organization
- All breeding societies (former Herd Books) delegate A.I.A. for their performance recording activity
- Formal delegation act between the single breeding society and A.I.A.



# **Structure of performance recording system – Past and present**



#### Before 2008-2009:

Performance recording activity executed by A.P.A. s (Provincial Breeders Associations) Each province had its own A.P.A., that meant:

- One director
- · One or more administrative person
- Performance recording technicians (depending on the dimension of the province and on the amount of animals to be recorded)
- There were **95** provincial associations (A.P.A.)
- In Addition: A.R.A.s with the duty of managing milk laboratories and have contacts with regional governments



# **Structure of performance recording system – Past and present**



2008-2009 -> today:

Dramatic decrease of funding

Need to make a RESTRUCTURING action to fit the structure to available funding (cost containing)

National action of CONSOLIDATION of performance recording structures

Grouping of A.P.A.s in aggregated structures (A.R.A.s) with centralised directors and personnel.

Milk laboratories optimized basing on geographical situation and samples amount

TODAY: **22** A.R.A.s working, **14** milk laboratories.



### Structure of performance recording system



Performance recording activity is performed combining the work of different structures, all Associated (AR.A.s) or belonging to A.I.A.

The structure of performance recording activity is formed by:

A.R.A.s

Milk analysis laboratories

A.I.A.'s Associates

Reference Milk Laboratory
CPCM (Center for Milk recording devices calibration and testing)
SCM (Milk devices and milk plants service)
Inspection Service
ICT (Information and Communication Technology Service)

A.I.A



#### Structure of performance recording system -A.R.A.s

A.I.A. is in charge of performance recording activity in all the farms that are associated to the first level organizations (Regional Breeders Associations named A.R.A)

Currently, 22 A.R.A.s (usually identified with the Region territory) are delegated by A.I.A. to carry on performance recording in their associated farms

A.R.A.s have, basically in each province of their region, a central office and local offices with technicians covering all the farms in their territory

A.R.A.s perform their activity on behalf of A.I.A., respecting all its rules for the activity (ICAR approved methods protocols and recording instruments)

Must preventively declare in a calendar all the visits to the farms (when, who, what type of control) and check that interval with last visit is in the official limits

Calendars and general activity can be monitored by A.I.A. and Regional Government technicians

More then 700 performance recording technicians



#### Structure of performance recording system -A.R.A.s



Data to be collected during performance recording for each cow

- Daily milk amount
- Fat and protein %
- Somatic cells
- Additional information (depends on breeding society request)
- Inseminations (date, type, breed an ID of sire)
- ET
- Calving date, calving ease number and sex of born, sire breed and ID
- Movements outside farms: sellings, death, slaughter, stealing (all with date and cause and, if in the case, destination farm ID)
- Movements towards farms: buying, births, (all with date and, if in the case, information of the that sold the animal to the current farm)



### Structure of performance recording system







# **Structure of performance recording system – Milk laboratories**



Milk samples from performance recording are analyzed for their composition by 14 accredited milk laboratories. Vials with barcode.

The laboratories belong to a "Laboratories network" and are officially checked and authorized by A.I.A. to analyze milk samples for performance recording

Laboratories are requested to comply with the UNI EN ISO / IEC 17025: 2005 standard and be accredited through ACCREDIA.

The uniformity in the territory of the analyses carried out in the laboratories is controlled by the Reference Milk Laboratory through inter-laboratory comparative tests (Ring Test). The results of these tests are made available to Ministry of Agriculture and the Regional Governments.

AIA coordinates the network of laboratories for milk analysis held by the Breeders Associations and can withdraw the authorization to work to laboratories in which there have been non-compliances or irregularities.

In order to guarantee sustainability of costs, data quality and the constant modernization of analytical equipment, laboratories can serve multiple regions, basing on their geographical position and optimizing adequate logistics for the respect of the timing of samples delivery.



# **Structure of performance recording system – Milk laboratories**







# **Structure of performance recording system – Reference Milk Laboratory (LSL)**

LSL is an A.I.A. structure located near Fiumicino. Its core activity is to produce reference milk sample (Dairy, Sheep, Buffalo, Goat Milk) and set up inter-laboratory comparative tests (Ring Test) for laboratories

Samples of reference materials produced by LSL: bovine, buffalo, sheep and goat milk for fat, protein, casein, lactose, somatic cells, urea, cryoscopy, inhibents, bacterial charge, Aflatoxin M1 and B1, Zearalenone, ochratoxin A and Fumonisin in feedstuff

The reference samples are produced by LSL each month for each species and sent to all laboratories, that analyze them with their instruments and send their analysis results back to LSL for result check by a Ring-test.

Should local instruments not work correctly, LSL stops the laboratory activity and help it to calibrate correctly the instruments up to a correct working of the analysis instruments



# **Structure of performance recording system – Reference Milk Laboratory (LSL)**

Thanks to the activity of LSL, analytical instruments of laboratories are constantly calibrated and checked accordingly the ISO standard using certified reference materials, assuring a high precision of milk samples analysis results.

The reference material of LSL is used even by around 250 customers outside A.I.A, like Public Veterinary Health offices, cheese factories, Universities and Research Centers, private laboratories in Italy and abroad.



# Structure of performance recording system – Reference Milk Laboratory (LSL)







# Structure of performance recording system – SCM (Servizio Controllo Mungitura)

SCM (milking machines control service) is in charge to check the correct efficiency for both milking plants and recording devices.

Each A.I.A. local office has one or more SCM technician (total 100 for Italy), coordinated by a national responsible in A.I.A. Usually a SCM technician is at the same time a performance recording technician.

SCM technicians in recorded farms perform the following activity:

- 1. Initial check and calibration (following ICAR rules) of fixed farm milk recording devices to be used for performance recording
- 2. Mandatory routine check (yearly) on milking plants components and work (only static; dynamic check is on demand, e.g. if high SCS is found in recorded cows)
- 3. Mandatory routine check of fixed milk recording devices (farm) and technician's devices to ensure correct working (scheduling: yearly for mechanic and electronic meters; every two years for jars) following ICAR rules.
- 4. Meters identification. For this task, sticky labels, consisting in 2 parts, are used
- 5. Check that meters used for performance recording are ICAR APPROVED.



# Structure of performance recording system – CPCM (Centro Prove Conferme Metrologiche)



Center for Milk recording devices calibration and testing), a structure of A.I.A.

#### SCM technicians for their work use:

- Flowmeters to check plant's flow of fluids
- Pulsographs: to check group's pulsation frequence
- Vacuometers: to check the negative pressure at group level
- Thermometers: to check milk temperature in bulk tanks
- Scales

It is important to calibrate routinely these devices to ensure recording accuracy

CPCM, using dedicated instruments, ensures their calibration and their accuracy

Calendar for all recording devices for all A.R.A.s; routine testing and calibration for instruments for all Italy (yearly or each two years, depending on the device)



# **Structure of performance recording system – Inspection service**



A.I.A.'s Inspection Service works to verify the correct performance of activities relating to the performance recording execution.

The activity of the Inspection Service is governed by rules set up by Ministry of Agricolture or technical Committees regarding the performance recording activity

The Inspection Service operates in compliance with the reference standard UNI EN ISO 9001: 2015.

One of the activities of Inpsection Service is to perform "Autocontrol", i.e. to perform at A.R.A. level, both for performance recording and SCM activity:

- 1. "Remote" documentary checks, focusing in the correct scheduling and its compliance in recording in farms and the respect of times in sending collected data to A.I.A.
- 2. Inspections to farms, A.R.A.s and related laboratories to verify in-site activity

Results are used to signal improper activity and errors and to help the inspected organisms to set up corrective actions to optimize their activity



### Structure of performance recording system - ICT



A central database called SIAII is used to store all data from performance recording

Data are inputted by A.R.A.s technicians using a dedicated software called SIAII CF that allows to acquire productive, reproductive and vital data and to acquire processed information from central database (list of animals to be recorded).

Techinicians can have a hand-held device in farm or can input data in SIAII using a PC version of the software. In any case all data are transferred by web service

Milk analyses are loaded by the laboratories in a dedicated FTP area and are processed and loaded in the database

SiAll CF can connect to external national databases (BDN), to other databases and to the native software of several manufacturers' recording devices and guarantees the immediate validation of the data entered by the controller and the alignment with central database.



### Structure of performance recording system - ICT

When the technician inputs the results of performance recording, this information is immediate available for all the other users, with these advantages:

- <u>all users read and write on the same files and the data they insert are subject to the same checks</u>. In this way the information is not misaligned and there is no need to transfer files to update local databases;
- <u>all users are sure to work with the most correct information</u>, because they have the updated information available in the time following the entry, even if carried out by other users;
- it is possible to have greater control over the quality of the information entered in the database since each anomaly is reported allowing corrections directly in the central database by the allowed users of the System;
- it is possible to <u>compare at any time the situation of the herd loaded in the central database with</u> the official herd Register of the BDN (National Zootechnical Anagraphical Database held by Ministry of Health);



#### **Central National Database (SIAII)**







# Some outputs to the breeder from the performance recording



**Summary form for dairy production** This is the summary form for lactating animals controlled in the farm in last performance recording. It is printed each time a performance recording is performed and reports productive data on milked milk during last performance recording. An example for dairy cattle is reported

ASSOCIAZIONE ITALIANA ALLEVATORI Ente Morale - D.P.R. 1051 del 27/10/1950 Ufficio Centrale Controlli Produttività Animale

#### SCHEDA DI RIEPILOGO DEL CONTROLLO BOVINI DA LATTE

	D.M. Ministero delle	e Politich	e Agric	cole e For	estali n" :	21157 del	18/4/2000														POGLIO N.	1	di 5	Page 1
COOD. ACIA	21.0													INDIRING					2	ONA				SIST. MING.
														FOCKLIAN.						ng. stalla	TIATE IT!	CONTROLLO		MN RIAR N
														100000000000000000000000000000000000000					-	M		9-2016		2016/167
DI.		COCNORS - Nome / MACTONS SOCIALS												Cod. CONTR	OLLOW#/1							ONTHOUSE.		2010, 107
														C0009							AT	52UF		
	SOGGETTO			PROD	UZIONE	GIORN	IALIERA		F	RODUZ	IONE E	FFETTI	VA		PRE	V. LATT	AZ.	<b>EQUIVA</b>	LENTE	MATURO	CAPACI	A' PRO	AVITTUC	OPERAZ
Razza	MATRICOLA	N.	N.	LATTE	GRASSO	PROTEINE	CELLULE	GIORNI	LATTE	GRA	880	PROT	ENE	PROD.M.G.	LATTE	GRASSO	PROTEINE	LATTE	QRASSO	PROTEINE	LATTE	GRASSO	PROTEINE	DA
	NOME	AZIENDA	LATT	KG	%	%	SOMATIONE		KG.	%	KO	*	KG	KG	HO	KG	KQ	MG	KG	KG	*	%	%	EFFETTUARE
02	4	12	8 4	26,8	5,04	3,43	65	254	7152	4,59	328	3,50	250	28,16	8075	384	285	8085	384	285	-17,0	1,0	-5,6	
0.2	3 1A	130	5 4	38,2	3,12	2,99	34	22	840	3,10	26	2,98	25	38,18	GLI			GLI						24/10
02	5 B	13	7 2	UL/T.	CONTR	OLLO	03/12	2015							10886	375	333	11346	390	342	16,4	2,6	13,2	25/10
02	6 >p	13	3	ULT.	CONTR	OLLO	03/12	2015							5334	247	181	5613	257	187	-42,3	-32,3	-38,0	16/3
02	4	13	9 4	34,1	3,38	3,45	82	171	6645	3,97	264	3,18	211	38,86	9801	381	327	9847	384	327	1,0	1,0	8,2	,
02	7	14	3					201	4945	4,06	201	3,15	156	24,60	7160	298	231	7716	320	244	-20,8	-15,7	-19,2	13/10 1

Besides farm and animal ID information (Breed, ID; name, internal farm number) the following data are reported:

- √ Lactation number;
- ✓ Daily production during last control for each animal (milk kg, % fat, % protein, Somatic cells);
- ✓ Effective production, that is, total production from calving to last test day (milk kg, kg and % for fat and protein), days in milking;
- ✓ Lactation projection to 305 days, Mature equivalent
- √ Cow productive ability expressed as % respect to Mature Equivalent average;
- √ Operation to perform on each animal



# Some outputs to the breeder from the performance recording



#### Lactation certificate (an example for dairy cattle is reported)

																	En	nesso il	14/	06/2	016	]		news DPA					
				- 3	OGGET	то						P	ADR	E.				7	MADR	E		1			male		-	ZIENDA	k
The state of the s			Nome	e Data Nascita			Razza Matripola			la .		Razza M			Matricola			E.M. Ministers date Politiche Agricule e Porestat. N° 21787 per 16140000					N. AZIENDALE						
03		-		0.00					05-06	2009	0.2							02	-53			1		4	-	- 1		0257	e.c
																						1		V		- 1			
N. ATTA- ZONE	PA	A'AL RTO				LATTAZIONE EFFE		EFFET	ΠΥΑ (*)		PRODUZ MASSIMA		TIPO CONTRO FUNZIONALE				Parto 11 Inserni-	District of the last		15	N° Nati	U	TTAZK	INE CONVENZIONALE (*)					
	ANN	MESI	DATA PARTO		DURATA	LATTE	QRA	550	PROT	TENE	RILEVATA	Ese	Mur. gk	Pario	Min	Care	Sagna Sagna	Sagna	nazione	200	nazione	047.tt		DURATA	LATTE	OFIA	550	PROT	TEINE
					GG	Ка	*	Kg.	*	Kg .	Kp(')	Da Da	Con troi.	8	Adi end	natu ra		lazioni	33	14.	03	onto	M F	93	Ko	- %	Kg	5.	Ko
1	- 2	0	0.0	-06-2011	295	0069	3.64	294	3,19	257	32.5	Α	T	4	2	U	J		66	1	66	P	1 0	2.0	806	3.64	294	3,19	25
	2	11	25	-05-2012	370	13300	4.09	544	3.23	429	49.4	A	Ť	4	2	U	J		151	1	151	D	0 1	100000	1184	3.97	470	3.17	37
1	- 4	1	10	-67-2013	287	11432	3.68	421	3.13	358	49.6	A	Ť	4	2	ü	đ		53	2	77	p	1 1		1143	3.68	421	3.13	35
- 4	5	0	29	-05-2014	302	11051	4.08	451	3.30	165	47.7	A	T	4	2	12	J		111	1	113	p	1 0	10000	1105	and the second	451	3.30	3.6
- 5	- 6	1	-	-06-2015	314		4.24	566	2.99	400	61.1	Α	T	4	2	ü	đ		100	1	100	p	1 0	3.05	1316	4.22	556	2.99	3.9
			9	LATT.	1568	57215	3.98	2275	3,16	1810																			
I-Per	a soecie	Ovisali	latte	done é salcol	eta dal 31º	geme del	parto. Ev	entuali co	etali pe	pedenti a	tale limite r	non ve	naons	0.0000	idera	6				") - Ce	difica del	500	ii Cont	olo Funcio	role.				
-	GUITO		-	NOTURE C		-		RIDDIC	1010	_	NGITURE		-	-		-	MPIQ	NATUR	Le		_	MUN	GITU	RA NON	200	SEGN	MALAZIO	NI.	
A Controllore			A	Tyme	2411		4 00	ni 4 settin	rane	1 1	ha				U	Unic				YR	addoppio	_			W Dur	ata lattación	Inferiore	al limite d	5 9223
BA	levatore		1	Una alternata			6 09	ni 6 setim	nane	2 0	iue:				P	Suit	utte le	mungitur	e .	FO	sefficient	ed c	alcolo		D Lun	ations dubb	ia in segu	ino a visiti	
			C	Una non obbi alternata	galorame	rite				3 1	in .									K Contronto			tank		O Rilevato uso		Ossiticina	Q	
										N P	Robot								Ė	JE	mito da	ulton	ето е	entronico		odo parto-1		megotan on raggiun	

This form is produced when a lactation is closed, and reports the following information: cow id information: breed, ID, name, birth date, sire and dam ID, Farm ID, internal farm animal ID

For each closed lactation: age at calving, calving date, total lactation length and yields (milk, fat and protein percentage and quantity), maximum milk yield, recording method, days between calving and first insemination, insemination number, days between calving and last insemination, calving or abortion, number male and female born, length and yields referred to conventional lactation



# Which type of performance recording can be used



Method ID	Note	Who	Frequency (week)	In farm entries	Recorded milkings	Missing milkings	Sample		
A4		A.I.A. technician	4	11	All	None	Only one sample (AM/PM)		
A5		A.I.A. technician	5	9	All	None	Only one sample (AM/PM)		
AJ		A.I.A. technician	4/5	9/11	One (AM/PM)	From electronic milk meter software	Only one sample (AM/PM)		
АТ		A.I.A. technician	4/5	9/11	One (AM/PM)	Estimated (ICAR)	Only one sample (AM/PM)		
AC	Only sheep	A.I.A. technician	4	11 (depend on seasonality)	One	Estimated from milk tanks contents (ICAR)	Only one sample		
AR	AMS	A.I.A. technician	4/5	9/11	All	None	Only one sample; Rack works 12 hrs		
BD	AMS	Breeder (from AMS software)	4	11	AII	None	Only one sample; Rack works 12 hr		



# Main figures of milk performance recording activity (2018) – Heads and Herds

Species	Recorded heads	Recorded herds	Average heads/herd
Dairy Cattle(*)	1.351.614	15.495	84,8
Buffalo (*)	49.932	215	232,2
Dairy Sheep (**)	164.257	930	176,6
Dairy goats (*)	54.984	682	80,6

Dairy Cattle milk recorded by A.I.A. is about 80% of total produced milk in Italy

(\*): Reference period : Oct 1st, 2017 - Sep 30th, 2018 (\*\*): Reference period : Sep 1st, 2017 - Oct 31st, 2018



# Main figures of milk performance recording activity - **Overview**



Official technicians: more than 700

Working days /year : more than 200.000

Daily milk analyses: around **50.000** 

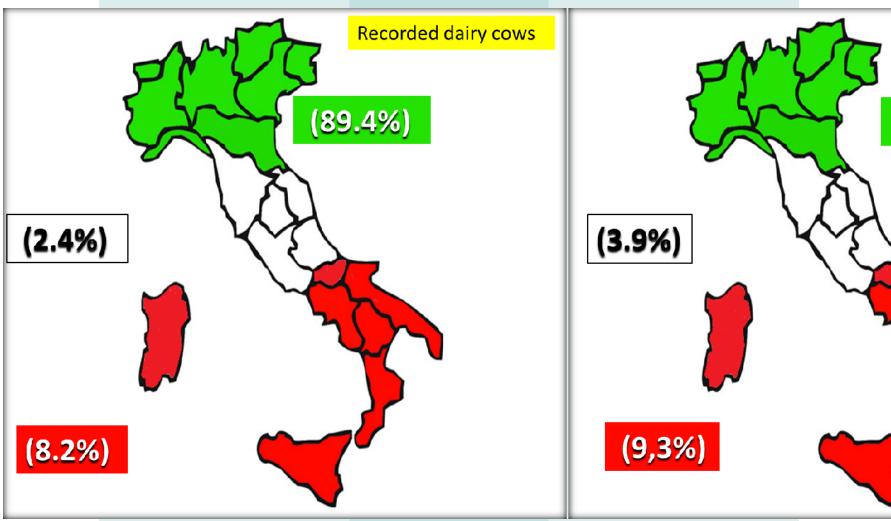
Milk Analyses/year : more than 10 million

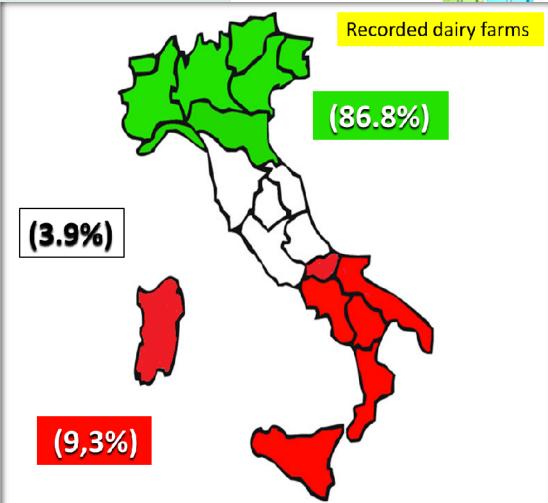
Performance, reproductive, vital records collected per year: more than 300 million



#### Main figures of milk performance recording activity (2018) - Territorial distribution, Dairy Cattle



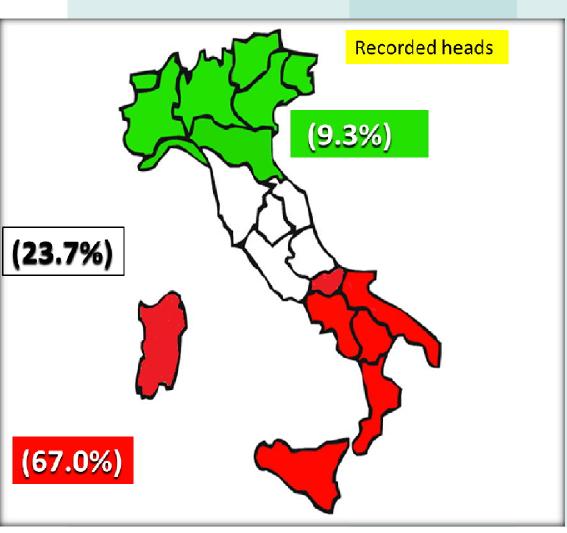


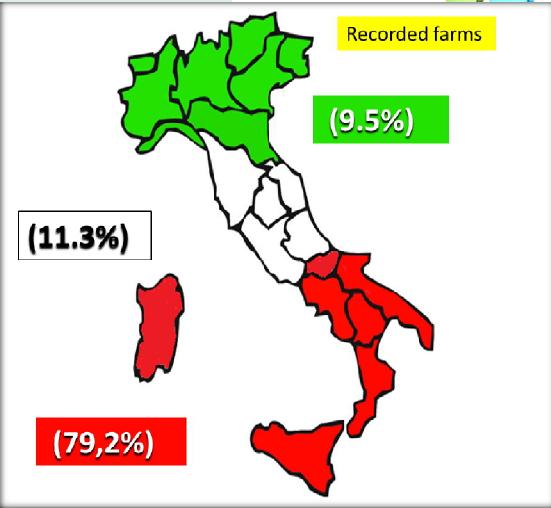




# Main figures of milk performance recording activity (2018) – Territorial distribution, Buffalo



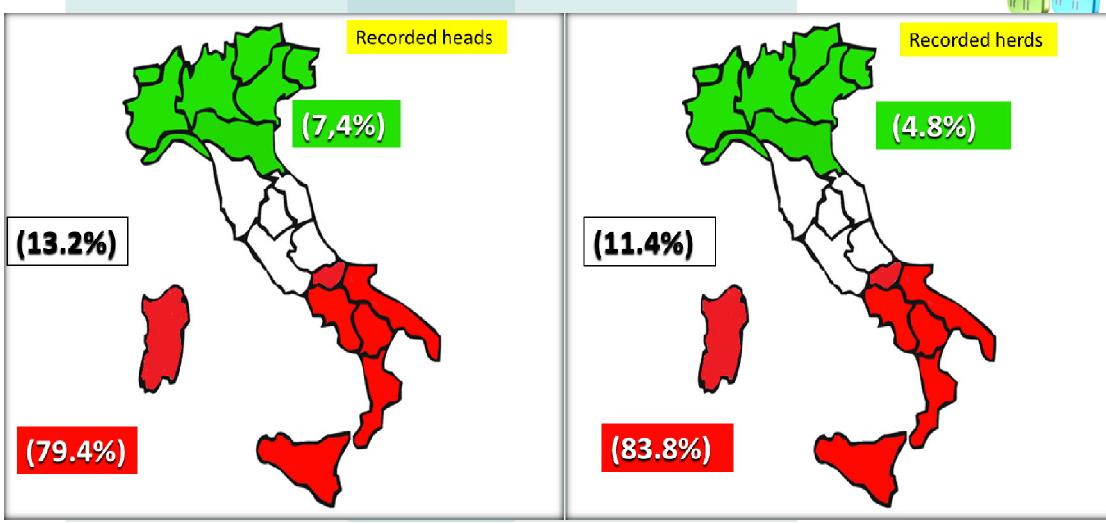






# Main figures of milk performance recording activity (2018) – Territorial distribution, milk sheep

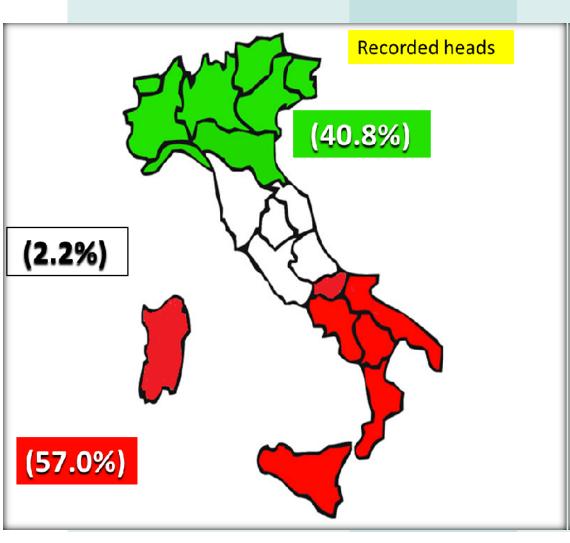


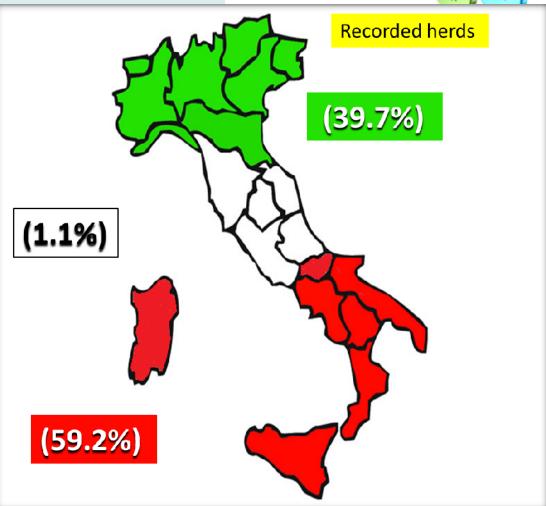




# Main figures of milk performance recording activity (2018) – Territorial distribution, goats







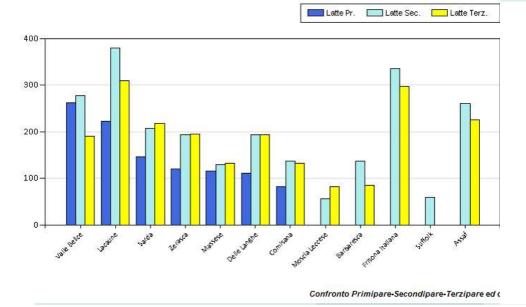


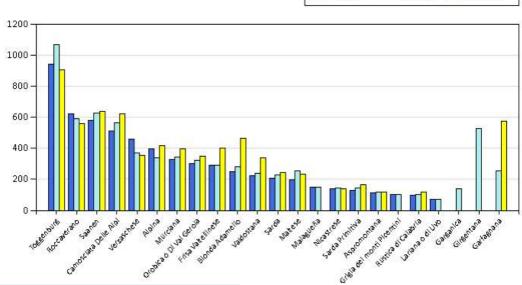
# Main figures of milk performance recording activity (2018) – Average productions



Latte Sec. Latte Terz.

Species	Average milk production per head	Average fat % per head	Average protein % per head
Dairy Cattle	9352	3,34	3,76
Buffalo	2357	4,63	7,99



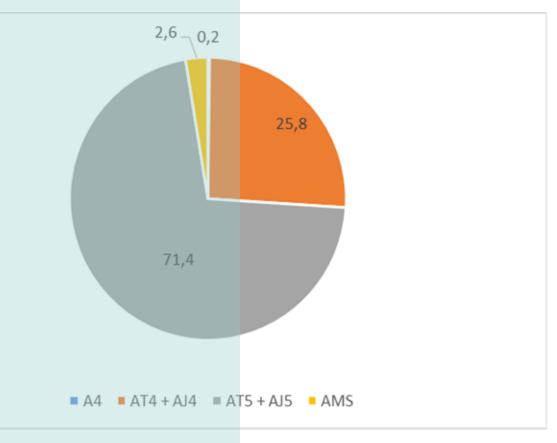




# Main figures of milk performance recording activity (2018) – distribution of recording types, dairy cattle



Recording type	Percent on total
<b>A4</b>	0,20%
AT4 + AJ4	25,80%
AT5 + AJ5	71,40%
AMS	2,60%

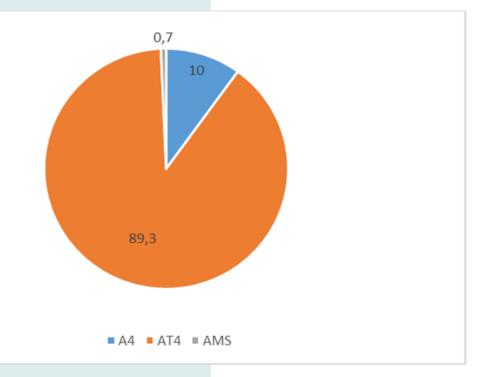




# Main figures of milk performance recording activity (2018) – distribution of recording types, Buffaloes



Recording type	Percent on total recorded
<b>A4</b>	10,0%
AT4	89,30%
AMS	0,70%

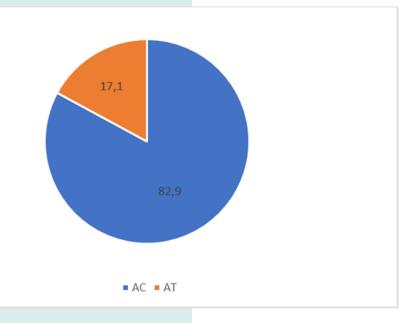




# Main figures of milk performance recording activity (2018) – distribution of recording types, milk sheep



Recording type	Percent on total recorded heads
AC	82,9%
AT	17,1%





# Main figures of milk performance recording activity (2018) – distribution of recording types, goats



Recording type	Percent on total recorded heads
AT	100,0%



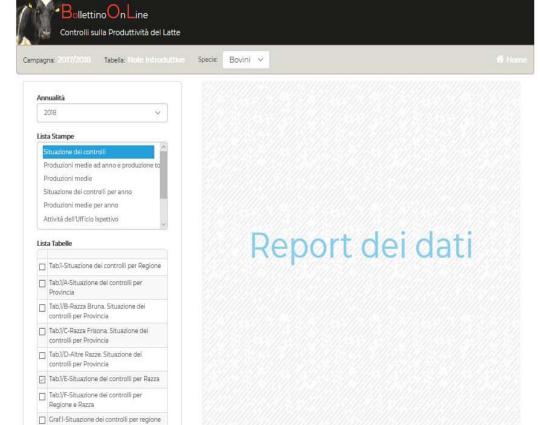
Graf.2-Situazione dei controlli per razza

Visualizza

#### Main figures of milk performance recording activity (2018) - Yearly Official results

http://bollettino.aia.it





#### TAB.1/E-SITUAZIONE DEI CONTROLLI PER RAZZA

	LATTAZI	ONI CHIUSE NE	LL' <mark>ann</mark> o	CAPI	ALLEVAMENTI	CAPI
RAZZA	SUPERIORE AI 240 GIORNI	240 GIORNI	TOTALE	CONTROLLATI	CONTROLLATI	CONTROLLATI PER ALLEVAMENTO
	N.	N.	N.	N.	N.	N.
Bruna	43.235	8.532	51.767	71.333	5.004	14,3
Frisona Italiana	643.244	133.576	776.820	1.081.855	9.896	109,3
Valdostana Pezzata Rossa	10.018	1.929	11.947	14.113	764	18,5
Pezzata Rossa Italiana	38.819	8.659	47.478	61.420	4.566	13,5
Piemontese	156	352	508	591	25	23,6
Modenese	277	121	398	497	34	14,6
Reggiana	1.735	383	2.118	2.696	121	22,3
Modicana	1		1	1	1	1,0
Pezzata Rossa Oropa	972	408	1.380	1.862	99	18,8
Rendena	2.765	466	3.231	4.037	214	18,9
Grigio Alpina	6.551	1.678	8.229	10.040	1.247	8,1
Rossa Danese	98	24	122	131	17	7,7
Pinzgauer	728	190	918	1.178	222	5,3
Jersey	4.071	997	5.068	6.695	725	9,2
Abbondance	40	19	59	82	32	2,6
Valdostana Pezzata Nera	3.359	1.427	4.786	5.402	641	8,4
Burlina	261	108	369	431	19	22,7
Angler	575	118	693	895	65	13,8
Castana (Aosta)	1		1	1	1	1,0
Cabannina	8	17	25	38	13	2,9
Varzese o Ottonese o	10	23	33	44	7	6,3
Pustertaler Sprinzen	211	107	318	438	41	10,7
Cinisara	1		1	1	1	1,0
Ayrshire		1	1	2	2	1,0
Agerolese	2	1	3	4	1	4,0
Rossa Norvegese	2	1	3	3	2	1,5
Rossa Svedese	33	4	37	43	14	3,1
Normande	2	1	3	7	3	2,3
Guernsey	3		3	4	3	1,3



#### Some final comments



- During last years, decrease of the number of recorded herds but more or less number of recorded heads
- Medium or little size herds presence decrease while large size herds increase
- Average heads/farm increase
- > There is no homogeneous geographical distribution for recorded species
  - Dairy cows mainly in northern Italy (Po Valley)
  - Buffalo mainly in Central (Lazio) and Southern Italy (Campania, Puglia)
  - Milk sheep mainly in Southern Italy and Insular Italy (Sardegna, Sicilia)
  - Goats basically equally distributed between Northern Italy and Southern and Insular Italy



#### **Some final comments**



- Not all A.R.A.s have the same work load
- ➤ Different geographical situations (from Alps farms with small size herds to Po Valley big farms with hundred of heads to farms in marginal zone of appennines or major islands)



#### **Past and future**



- Up to 90's: A4 with proportional sampling (gold reference type of control) (2 milking recorded)
- > Then, in order to avoid or contain the icreasing costs of performance recording:
  - 1. A6: added 2 weeks to A4 in order to have less visits/herd/year)
  - 2. Contain performance recording cost increase recording only one of the two/ three milkings (AT, i.e. alternate recording AM/PM) and estimating the other one/ones or ATJ (AT with missing milking recovered by electronic milking device software); AT/AC for milk sheep, AT for goats
  - 3. Alternated single sample from only one of the two milkings in A4/A6
  - 4. AT4 for buffaloes instead of A4; AT5 for dairy cattle (9 visits instead of 11)



#### **Past and future**

- For dairy cattle, extend AT5 to all farms (A4 only on direct request of a herd, with additional costs to be paid)
- Consolidate and expand AT4 for buffalo
- ➤ In general, identify and evaluate new type of performance recording maintaining accuracy of data without dramatical increase of costs
- > Expand SCM activity in remote using electronic milking systems (statistics)
- > Take into account animal welfare (e.g. SCM: avoid high vacuum pressure)
- > ...... «B» methods? (Electronic devices, web services, online analyzers,.....)



### GRACIAS POR SU ATENCIÓN