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04- Veterinary Control Programmes

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REPORT OF THE
“SHEEP & GOATS BRUCELLOSIS”
TASK FORCE SUBGROUP
Meeting held in Rome, Italy, on 23-24 April 2008

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1 AGENDA

See Annex 1

2 PARTICIPANTS

See Annex 2

3 INTRODUCTION

The meeting was held in Rome, in the Italian Ministry of Health.

The presentations and discussions were either in English or Italian and a simultaneous translation service was provided. Copies of all the presentations were given to the experts.

The Director General, Dr Gaetana FERRI, of the National Veterinary Services of the Italian Ministry of Health gave first a welcome introduction to the participants. Then, V. Piazza, from the DG SANCO, reminded the role of the Task Force sub-group to the Italian colleagues (assistance to the Commission and to the EU Member States for the design and implementation of control and eradication programmes). Finally, the chairman, B. Garin-Bastuji, opened the meeting after a short presentation of the members of the sub-group.

4 FIRST DAY

Structure & Organisation of the Veterinary Services In Italy.

Dr. Morgan AVETTA, Ministry of Health, Central Veterinary Services.

The competent authority for ovine and caprine brucellosis control and eradication programs in Italy is the Veterinary Services that are under the authority of the Ministry of Health. At central level, the brucellosis control and eradication programs are coordinated by the Department for Veterinary public health, nutrition and food safety, which is divided into the Animal Health and Veterinary medical products General Directorate, the Food Safety and Nutrition General Directorate and the National secretariat for risk assessment. At regional level, there are Regional Health Services (in total 21), which are located in 19 Regions and 2 Provinces. At local level, in each region or province, there exist Local Health Units (in total 195). The Local Health Units, as far as the Veterinary Services are concerned, are comprised by three areas: (i) Animal Health, (ii) Inspection and Control of Food of Animal Origin and (iii) Hygiene of Animal Husbandry and of Farming Production.

The Veterinary Services in Italy are assisted in their function by a network of 10 “Istituto Zooprofilattico Sperimentale” (IZS: Vet. Research Institutes) (Figure 1). The National Reference Laboratory for Brucellosis is the IZS dell'Abruzzo e del Molise (Teramo), which is also one of the OIE Reference Laboratories for Brucellosis.



Fig. 1: Distribution of Veterinary Research Institutes (IZS) in Italy.

Italian legislation related to the control of sheep and goat brucellosis.

Dr. Morgan AVETTA, Ministry of Health, Central Veterinary Services.

The legal basis of ovine and caprine brucellosis control and eradication program in Italy is as follows:

- Decree of 2 July 1992, 1994, n° 453 and
- DPR of 30 December 1992, n° 556 (in accordance to Dir. 91/68/EEC).

According to the current legislation in Italy:

- all sheep and goats over 6 months must be tested once a year in all the officially free flocks,
- all the positive sheep and goats have to be slaughtered within 30 days,
- in order for a flock to be repopulated, the remaining animals must undergo one negative test at a time interval of 42 days after the slaughter of the positive animals and in order for the officially free status to be re-gained, another negative test must be performed at a distance of 6 months after the previous one (screening is performed by RBT, CFT is used as an individual confirmatory test).

The results of the ovine and caprine brucellosis control and eradication programs have been satisfactory in the northern-central Regions of Italy and Sardinia, where 9 Regions and 7 Provinces have already been declared officially free (BmOF) and very low prevalence is met in the rest non officially free Regions and Provinces.

On the contrary, the control and eradication programs in the southern Regions were not as successful (high prevalence in some Regions, lower than expected number of flocks checked in other Regions), due to difficulties experienced by the veterinary services at local level.

The annual prevalence rate of infected flocks was 4.23 % in the year 2006 (Table 1)

In order to face the above problems and to accelerate the brucellosis eradication program, a new Order was issued on 14/11/2006, with specific provisions for those Regions that are Calabria, Campania, Puglia and Sicily.

The main provisions of the Order are the following:

- 1) Obligation to slaughter all brucellosis infected animals within 15 days from the notification to the owner; slaughtering ordered by the veterinary services instead of the Major;
- 2) Identification of infected animals with electronic bolus or special ear tag in order to guarantee traceability;
- 3) Obligation to carry out a proper epidemiological enquiry in the infected holding and in the slaughterhouse on the basis of the annexes to the Order;
- 4) Obligation to sample infected and suspected animals in the slaughterhouse;
- 5) Transhumance allowed for officially free holdings only, with pre-movement testing;
- 6) In case of non-cooperative farmers cut of community funding;
- 7) In case of eventual further failure from the Region, substitution of the regional powers with special representative of the Central Competent Authority (*Commissario ad acta*);
- 8) Fine for anyone non respecting the rules of the Order.

Table 1: Sheep and goats brucellosis in Italy in 2006

REGION	Total number of herds under the programme	Number of herds checked	% herd coverage *	Number of positive herds	% positive herds (prevalence)
Abruzzo	5 249	3 751	71,46%	4	0,11%
Basilicata	6 458	6 221	96,33%	22	0,35%
Bolzano (O.F.)	0	0	0,00%	0	0,00%
Calabria	8 492	6 555	77,19%	312	4,76%
Campania	8 547	6 592	77,13%	147	2,23%
Emilia Romagna	2 833	2 656	93,75%	1	0,04%
Friuli V. Giulia (O.F.)	0	0	0,00%	0	0,00%
Lazio	4 467	3 415	76,45%	4	0,12%
Liguria	1 650	1 444	87,52%	0	0,00%
Lombardia (O.F.)	0	0	0,00%	0	0,00%
Marche (O.F.)	0	0	0,00%	0	0,00%
Molise	1 915	1 729	90,29%	1	0,06%
Piemonte (O.F.)	0	0	0,00%	0	0,00%
Puglia	4 205	3 845	91,44%	142	3,69%
Sardegna (O.F.)	0	0	0,00%	0	0,00%
Sicilia	9 172	9 169	99,97%	1 392	15,18%
Toscana (O.F.)	0	0	0,00%	0	0,00%
Trento (O.F.)	0	0	0,00%	0	0,00%
Umbria (O.F.)	0	0	0,00%	0	0,00%
Valle d'Aosta	774	618	79,84%	0	0,00%
Veneto	1 888	1 888	100,00%	0	0,00%
TOTAL	55 650	47 883	86,04%	2 025	4,23%

Compensation system for slaughtered animals

Dr. Morgan AVETTA, Ministry of Health, Central Veterinary Services.

The compensation foreseen for animals to be slaughtered during the implementation of ovine and caprine brucellosis eradication program in Italy is regulated by the Ministerial Decree of 6 October 2004 (Fixing of compensation for culling of bovine animals and buffaloes infected with tuberculosis and brucellosis, goats and sheep infected with brucellosis, and bovine animals and buffaloes infected with enzootic bovine leucosis, for the year 2004).

The average compensation paid in Italy for sheep and goats confiscated as part of brucellosis eradication program is 77.21 and 92.03 Euros, respectively. The amount of compensation can be increased up to 50 %, in case of animals registered in herd books.

Farmers are compensated for their confiscated animals if they fill in and sign a special form within 30 days from animal's slaughter.

The compensation is not paid in case of:

- 1) Death or urgent culling of the animal for any reason.
- 2) Animal brought into the farm without the certificates foreseen by the law.
- 3) Animals slaughtered after the deadline of 30 days foreseen by the law.
- 4) The rules concerning the preventive measures for brucellosis are not respected.
- 5) No slaughtering of all the infected animals within the time limit set by the law.

Structure and distribution of ovine and caprine livestock in Italy.

Dr. Mattia PAGLIALLUNGA, Ministry of Health.

The sheep and goat population in Italy is 8,452,405 animals (7,363,372 sheep and 1,089,033 goats). The vast majority of sheep and goats in Italy belong to local breeds. From the whole population, 14 % are registered in the herd books. Usually sheep and goats are bred extensively and transhumance is a common practice in many Regions. Sheep are kept mainly for milk and cheese production and secondly for meat and wool production. The main breed for milk production is Sarda (60 % of milking animals), followed by Comisana and Valle del Belice (30 % of milking animals). Goats are kept mainly for milk production and also for meat production. The majority of goats belong to the Sarda and the Saanen breeds (almost 50 %).

About 50 % of sheep and goat population in Italy is concentrated in Sardinia and Sicily (>3,000,000 and >1,000,000 animals, respectively). Also, relatively high small ruminant populations are met in the southern Regions, where the population ranges from 300,000 to 600,000 animals in each Region. On the contrary, small ruminant populations are relatively lower in the northern Regions.

According to the data presented, 55.6 % of the flocks consist of 1 to 99 animals, 31.2 % of 100 to 299, 12.3 % of 300 to 999 and only 0,9 % have more than 1,000 animals.

Epidemiological situation of Sheep and Goat Brucellosis in Italy

Dr. Manuela TITTARELLI, NRL Brucellosis, IZS Teramo.

As mentioned before, the majority of the northern and central Regions are recognized as BmOF by EU, according to Decision 2006/169/EC (Figure 2). The numbers of BmOF sheep and goat flocks in each Region are presented in Figure 3. In these Regions periodical controls are performed, for the maintenance of officially free status (Fig. 4).

In the non-officially free Regions, there is a wide variation of ovine and caprine brucellosis prevalence, ranging from the very low percentage of 0.04 % in Emilia-Romagna to the quite high percentage of 14.15 % in Sicily (Fig. 5).

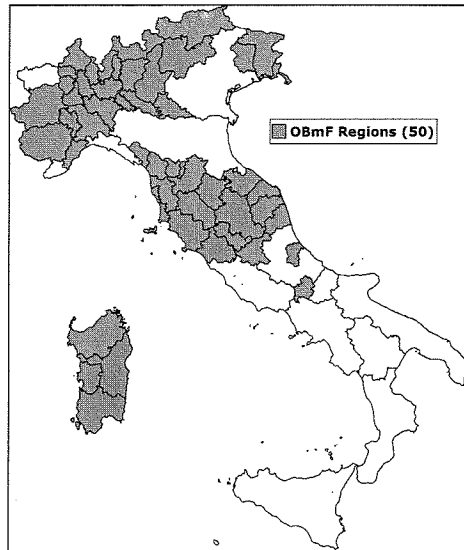


Fig. 2. Ovine and Caprine BmOF Regions and Provinces in Italy.

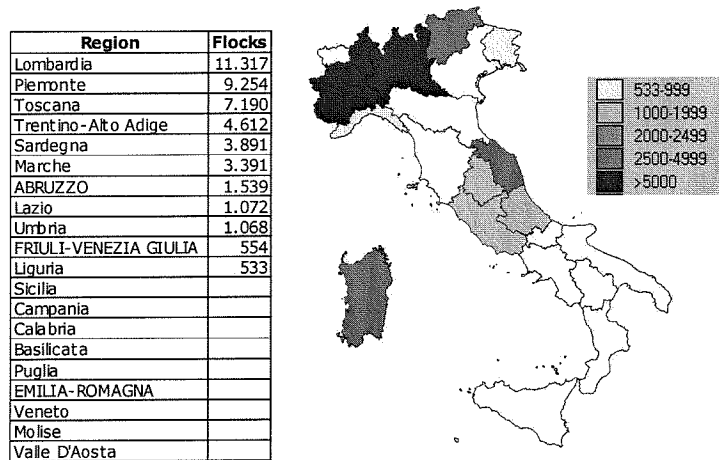


Figure 3. Number of sheep and goat flocks in BmOF regions.

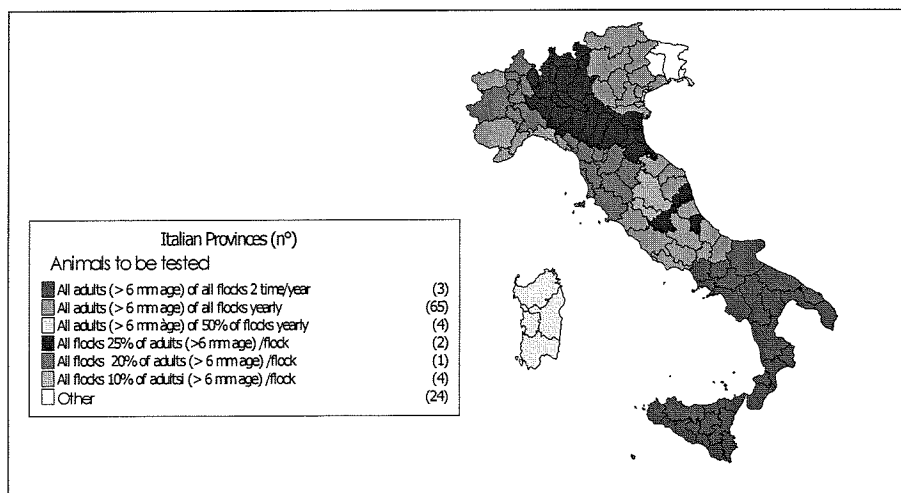


Figure 4. Periodicity of control of sheep and goat flocks

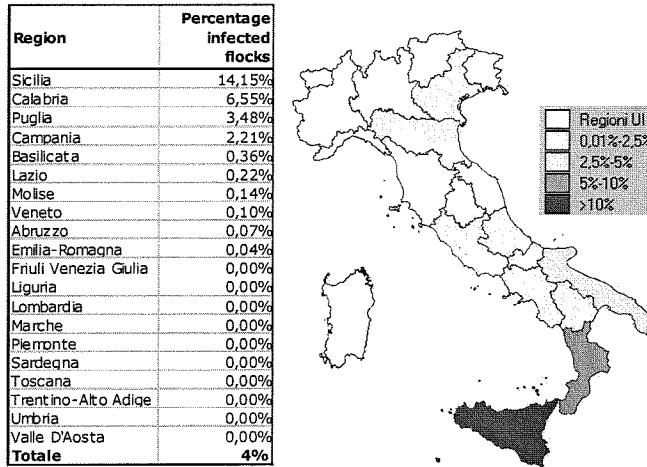


Fig. 5. Brucellosis prevalence in sheep and goat flocks in Italy.

The epidemiological situation of ovine and caprine brucellosis in Italy concerning the flock and animal prevalence during the last three years is presented below (Fig. 6 and 7):

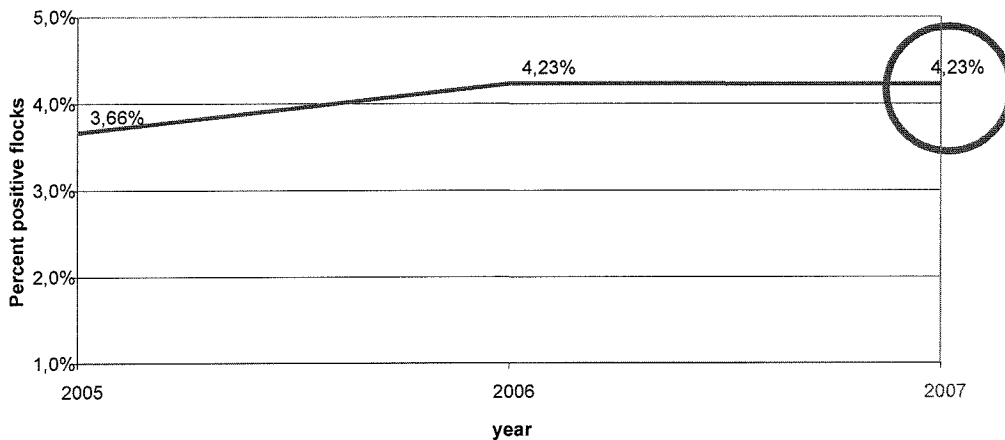


Fig. 6. Ovine and Caprine Brucellosis flock prevalence in Italy during 2005-2007.

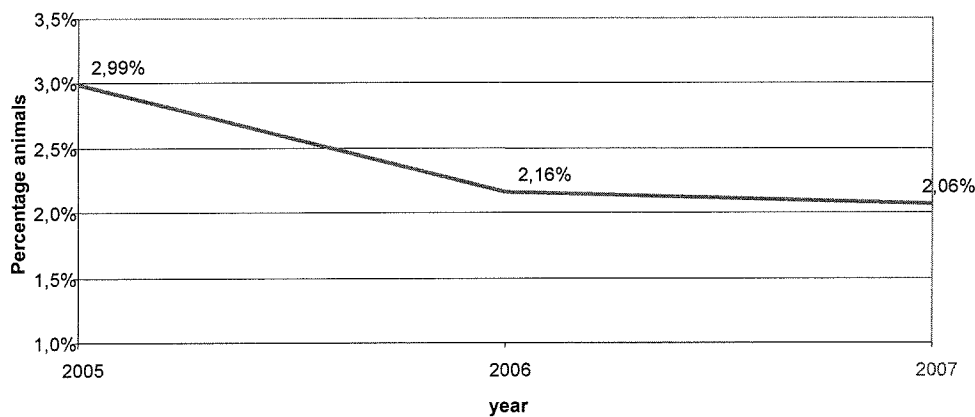


Fig. 7. Ovine and Caprine Brucellosis animal prevalence in Italy during 2005-2007.

According to the data presented, each year a testing scheme is prepared for the flocks in non-BmOF Regions. For 2007, the rate of flocks actually tested compared to the numbers of flocks that should be tested in each

Region are presented in Fig. 8. Because of lower than expected flock coverage and due to other accompanying problems, a Commissioner has been appointed (Commissario ad acta) for the Regions of Calabria, Campania, Puglia and Sicily, according to the Order issued on 14/11/2006.

In 2007, 105 % of animals to be slaughtered were actually slaughtered, *i.e.* depopulation is very rarely practised in Italy in sheep and goats brucellosis outbreaks.

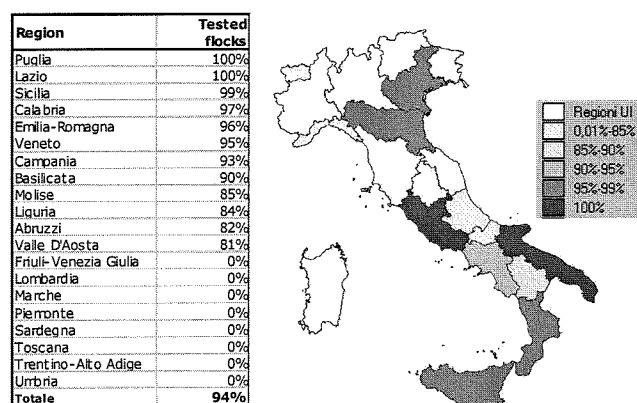


Fig. 8. Rate of tested flocks / flocks to be controlled in 2007.

Structure of National Reference Laboratory for Brucellosis

Dr. Manuela TITTARELLI, NRL Brucellosis, IZS Teramo.

The IZS of Teramo was nominated as the National Reference Laboratory for Brucellosis by Decree Nr 4 of the Italian Ministry of Health at October 1999.

The activities of the National Reference Centre for Brucellosis are:

- To confirm, when foreseen, diagnosis of Brucellosis carried out by other laboratories.
- To standardize analytical methods in Brucellosis diagnosis.
- To organize appropriate "ring trial" within IZS' labs.
- To utilize and spread official methods of analysis.
- To produce, collect, store and distribute to other IZS, or other research centres, the reference reagents (antigens, antibodies and antisera).
- To organize training courses for other IZS' staff.
- To give to other IZS and other research centres information and news in his special sector.
- To prepare intervention plans.
- To collaborate with other Reference Centres (EU or third countries).
- To give support and specialized information to the Ministry of Health.

The antigens produced by the Brucellosis NRL the last five years are presented below (Table 2):

Table 2: Antigens production during 2004-2007

YEAR	Rose bengal Antigen (ml)	Milk Ring Test Antigen	HS <i>B.ovis</i>
2004	259 600	720	-
2005	222 080	280	-
2006	174 880	200	-
2007	302 800	-	120 ml

In 2007, 1,199 *Brucella* strains isolated in Italy were typed by the NRL (562 in 2006). The biovar 3 of *Brucella melitensis* was the most frequently isolated strain in sheep and goats. But this biovar was isolated also from cattle as well as from water buffalo. According to the data presented, *Brucella abortus* biovars 1, 3 and 6 were also isolated from sheep and goats.

The NRL has been organising annual proficiency ring trials for all laboratories of IZSs for 2000. In these ring-trials foreign laboratories from Argentina, Poland, Cyprus and Africa, participate also.

Lazio – Structure of the IZS Lazio and Toscana. Evolution, current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.

Dr. Ugo DELLA MARTA (Regione Lazio, Rome); Dr. Marcello SALA – Dr. Antonio BATTISTI (IZS Lazio & Toscana, Rome)

The control programme in Lazio

At the beginning controls concerned 100 % animals and flocks. Then, obtaining free status, according to National Plan Criteria, controls in each flock of a representative number of the ovine and caprine animals over six months old must be carried out annually. The flock may retain its officially brucellosis free status if the results of the tests are negative.

In 2004 Viterbo and Rieti provinces obtained the free status according to Commission Decision n. 2004/199/EC (Official Journal n. L64, 02/03/2004). In 2008, Rome and Latina Provinces too, according to Commission Decision 2008/97/EC. The parallel very good evolution of the prevalence of brucellosis in sheep and in humans in this region is given in fig. 9.

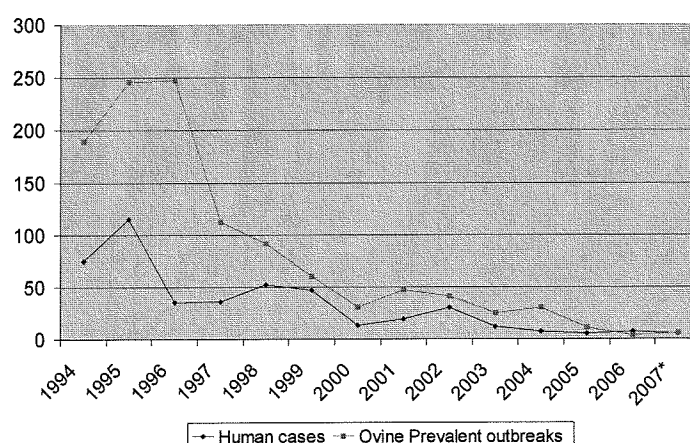


Fig. 9. Evolution of the prevalence of brucellosis in sheep and in humans in Lazio (1994-2007).

The first 4 years of BmOF status, 50% of flocks of each municipality should be checked annually, at least. Since the 5th year, the controls affect a 1/3 of the flocks on communal basis. The Framework of controls will be based on a rotation during the next years. However, the control is maintained each year in the following situations:

- Previous outbreaks in the flock or correlation with other outbreaks;
- Proximity to areas with unknown epidemiological situation or with significant prevalence of brucellosis;
- Frequent trading of animals;
- Practice of transhumance;
- High consistency;
- Management level of the flock;
- High genetic value of animals;
- Frequent movement of animals to market, exhibition or genetic centres;
- Animal identification failures;

Lazio: Evolution, current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.

Since 2005, 3 provinces of Lazio were included in the programme, the 2 others having been excluded due to their OBmF status (in 2004 and 2005 respectively). Table 3 gives the main figures of the results of the programme from 2003 to 2007.

Table 3: Lazio 2003-2007 brucellosis control programme in sheep and goats (free status provinces excluded)

Years	2003	2004	2005	2006	2007
herds under the programme (target)	7.070	5.595	4.198	4.467	4.453
herds tested	6.049	4.756	3.974	3.415	3.798
% tested herds	85,6	85,0	94,7	76,4	85,3
Animals under the programme (target)	761.573	397.340	349.220	340.250	314.400
Animals tested	731.801	384.992	337.704	312.288	298.364
% animal tested	96,1	96,9	96,7	91,8	94,9
Positive herds (prevalent)	25	29	10	4	6
New positive herds (incident)	19	11	1	2	4
Positive animals	2.504	1.622	369	16	25
Animals Slaughtered	5.657	2.040	524	16	26
Herds - St. out	4	3	4	0	0
N° free status herds	5.985	4.727	3.664	3.413	3.796
% free status herds	84,7	84,5	87,3	76,4	85,2
Prevalence	0,41	0,61	0,25	0,12	0,16
Incidence	0,31	0,23	0,05	0,06	0,11
% positive animals VS tested animals	0,34	0,42	0,11	0,01	0,01

Four provinces out of 5 obtained the free status for ovine and caprine brucellosis in the period 2003-2007 and 100 % of target flocks and animals were tested yearly. The number of positive flocks clearly decreased since 2004. However, an area at higher risk was identified and immediate interventions were successfully adopted (ASL RM/F). The prevalence and incidence decreased and are stable < 0,2 % in 2006-2007. Two examples of outbreaks occurred in 2008 in a free province were presented and showed that the investigation procedure and the management of the outbreaks were very well managed in this area.

However, one province is under the standards required for the free status (province of Frosinone) due to the lack of sampling activity of a representative fraction of the population of flocks and animals. But the situation is under the evaluation of the Regional Health Authority in order to adopt an effective plan of interventions.

Structure of the IZS Lazio and Toscana.

The structure and organisation of the IZS Lazio and Toscana were presented.

There are 400 person staffs and the main activities are:

- Diagnostic and laboratory activities in the field of animal infectious diseases and zoonoses;
- Laboratory activities in the field of Food safety (chemical, biological, biotechnological methods);
- Veterinary Epidemiology;
- Information and expertise provided at regional and national level in the field of prevention and control of infectious diseases and zoonoses;
- Hygiene of productions and animal husbandry advice; Animal Welfare;
- Research;

Dr. Battisti presented the activities of the IZS with regards to the brucellosis programme. The lab. Is accredited and performs the serological tests (RBT and CFT) as well as bacteriological investigations according to the standards (OIE Manual and EU regulations). The strains are typed at the NRL. 2/3 of the isolates from cattle and sheep are *B. melitensis* biovar 3. This biovar represents 50 % of the strains isolated in cattle (before 2005, biovars 1, 3 and 6 of *B. abortus* were also isolated in this species).

Sardinia: - Evolution, current situation and perspective of the sheep and goats brucellosis. Main epidemiological indicators and special action

Dr Sandro ROLESU, Dr Nicoletta PONTI (IZS of Sardinia) and Dr. Salvatore FARINA (Regional service-Sardinia)

The presentation was split in two parts: **the first part was presented by Dr Salvatore Farina**, Health Department of Sardinia region and was related to the regional plan for the eradication of the disease.

The second part was presented by Dr Rolesu and was referred to the epidemiological evolution of the disease as well as to the actual situation and future perspectives.

More details data/results of the surveillance programmes implemented by 1999 and based on Directive 91/68/EEC were presented.

It was explained the situation in the region until 1992: the veterinary services carried out vaccination campaigns with Rev.1 on young animals (= < six months) and identification with tattoo "R1" plus owner signs.

With Ministerial Decree (DM) 2 July 1992, n. 453, the following rules were applied:

- Serological control of all animals of 36 months (if vaccinated) or of 6 months (if not vaccinated);
- Qualification as officially free flocks in case of negativity of two controls at 6 month-interval;
- Individual tattoo by auxiliary staff.

In 1998, Sardinia region was qualified as brucellosis officially free (BmOF) according to national standards and from 1999 a surveillance programme based on the control of a sample of holdings has been running to confirm

the BmOF status: the 1st year the control was carried out in a random samples to have a prevalence > 0.2 % (confidence level of 99 %) and the same criteria were applied in the following years, in spite of the fact that the legislation was less strict.

A regional eradication programme of 5 years (from 2002 to 2006) has been implemented, as the previous programme was considered not sufficient. As a consequence, more stringent control measures have been applied to obtain the eradication of *Brucella melitensis*. In particular, the culling of all RBT positive/CF negative animals and control of the whole flock. However, the control measures linked to the culling of all RBT+ resulted in a very expensive measure and, as a consequence, the mandatory culling of those animals has been cancelled and replaced by a new measure. A new category of flocks at risk has been introduced: sample of flocks not controlled in the last 3 years (99 % confidence/0.5 % prevalence).

Due to a favourable situation, in 2005 some measures have been revisited to be less strict. The main control data from 2003 to 2007 are shown in tables 4-7.

Table 4. Control data 2003-2004

ANNO	No. Animals		Controlled		Positives		RBT+		%
	Flocks	Animals	Flocks	Animals	Flocks	Animals	Flocks	Animals	
2003	18.378	3.265.075	9.136	440.021	21	49	624	905	0,23%
2004	16.759	3.242.673	8.866	453.268	18	18	N. D.	N. D.	0,83%

Table 5. Control data 2005

Year	N. ANIMALS		CONTROLLED		POSITIVES		%
	flocks	animals	flocks	animals	Flocks	animals	
2005	16.664	3.483.805	6.453	370.959	23	39	0,36%

Table 6. Control data 2006

YEAR	N. ANIMALS		CONTROLLED		POSITIVES		%
	Flocks	animals	flocks	animals	flocks	animals	
2006	16.299	3.399.587	3.629	355.835	17	22	0,47%

Table 7. Control data 2007

YEAR	N. ANIMALS		CONTROLLED		POSITIVES		%
	flocks	animals	flocks	animals	flocks	animals	
2007	16.532	3.439.469	3.891	309.084	15	18	0,39%

However, in 2007, based on the evaluation of the results on the previous years, it has been noticed that a certain number of flocks was not under control as regard the movements and slaughtering of the animals. As a consequence, Sardinia Region, in co-operation with the Ministry and the National Reference Laboratory for Brucellosis, has designed a plan in order to demonstrate the absence of the circulation of *Brucella* in cattle, sheep and goats in the region and to avoid that the infection can be introduced by trade. A follow-up control has been carried out in the positive flocks in 2007 and 2008 focused on:

- Accurate epidemiological investigation;
- Investigation on cross-reactive bacteria;
- Brucellin skin-test carried out in positive animals and in a representative sample of negative animals.

Based on the evaluation of the results of the previous year, the Regional Authorities have the intention to propose the application of Legislative Decree (DL) n. 193/2005 (implementation of Directive 2003/50/EC), article 11: "Additional complementary guaranties for the official –free holdings". In particular, the prohibition of introduction of animals from Brucellosis non officially free zones.

In addition, it was stated that the legislation should be revised to adapt the control measures to the different epidemiological situations and suggested some integrative measures/definitions.

Table 8. Sardinia – sheep and goats under control

1993-2007	Flocks	Animals	Animals /km ²	Flocks /km ²
Minimum	16,299	3,074,435	0.06	1.35
Maximum	19,282	3,483,805	3.55	597.05
Mean	17,350	3,322,137	0.98	159.66

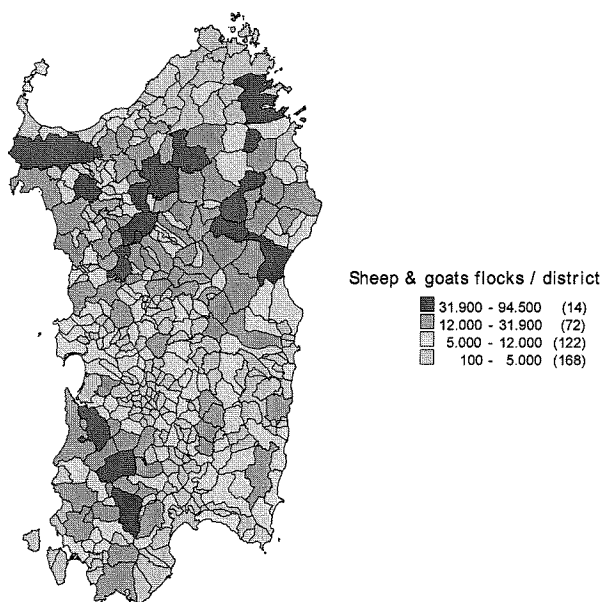


Fig. 10. Distribution of sheep and goats flocks per district (total: 377 districts)

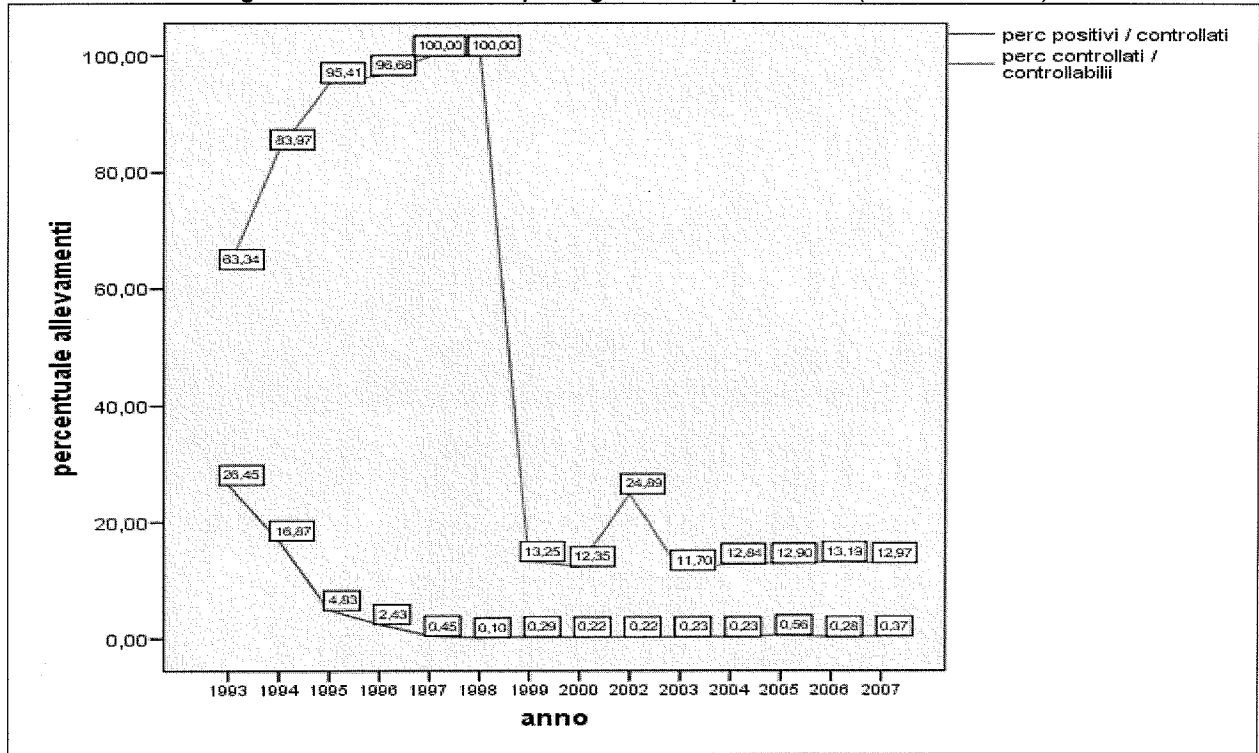


Fig. 11. Flock prevalence and control pressure in Sardinia (1993-2007)

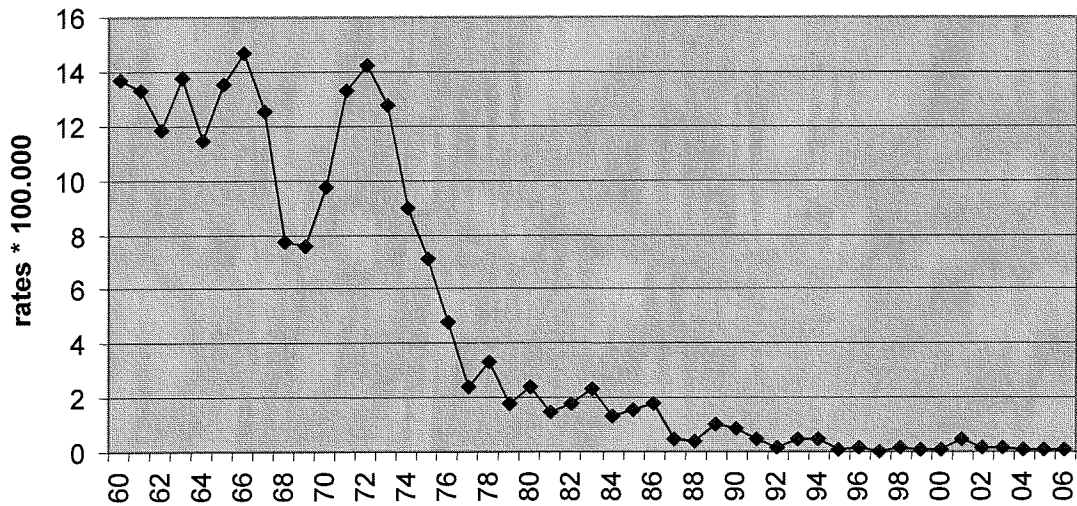


Fig. 12. Human brucellosis in Sardinia (1960-2006)

Table 9. Sardinia – sheep and goats flocks CFT positive (2002-2007)

Type (detection)	Flocks CFT+	Animals CFT+
1 Random	46	55
2 Slaughterhouse	24	44
3 Positives at slaughterhouse	6	30
4 Movements	24	24
5 Epidemiol.	2	2
6 Suspicion	8	9
7 Previously Infected	10	15
8 At risk	12	14
Total	132	193

At the end, Dr Rolesu focused on future strategy to apply: to verify the effective eradication of *Brucella melitensis* from Sardinia using additional diagnostic tests to integrate the official tests (PCR on the slaughter animals etc), to pay particular attention to the flocks where cases of abortion for which the cause has not been identified.

Sicily – Evolution (follow up from previous TF subgroup in 2005), current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.

Dr. Calogero DI BELLA (IZS Sicilia, Palermo)

The situation of ovine and caprine brucellosis in this Region of Italy was presented. The two following graphs (Fig. 13 & 14) give respectively the number of flocks and animals included in the programme in the 9 provinces in 2007 (Total numbers = 9,017 and 908,546 respectively).

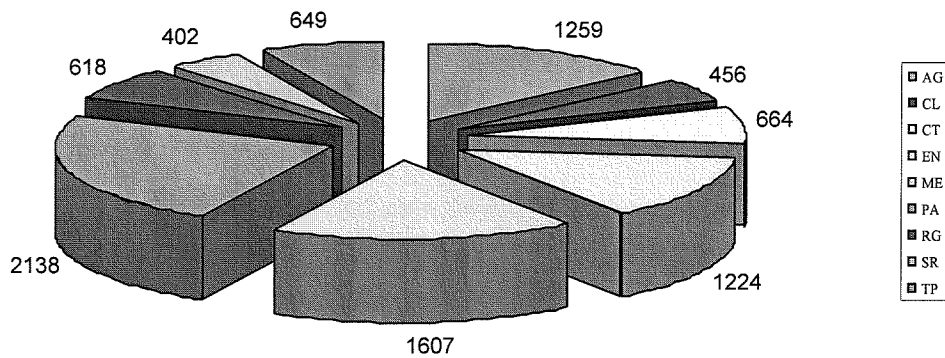


Fig. 13. Flocks included in the Sicilian brucellosis control programme in 2007

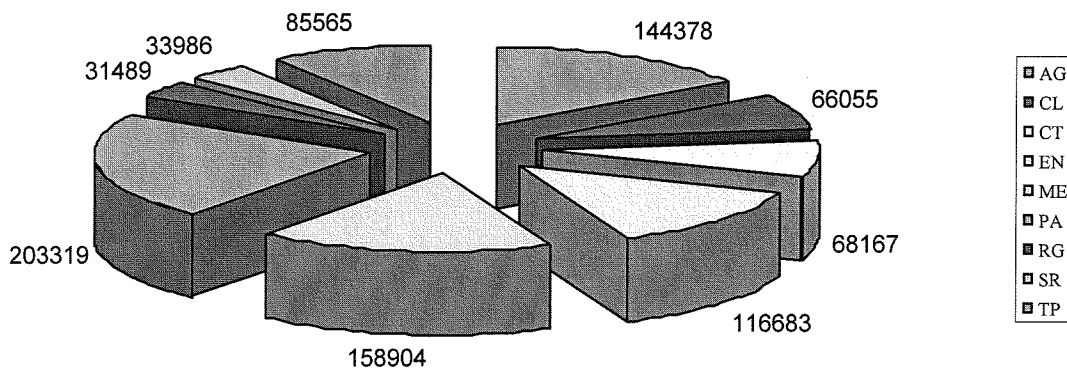


Fig. 14. Animals included in the Sicilian brucellosis control programme in 2007

These figures, which in the report of the meeting held in Palermo (Italy) on 16-18 November 2005 were given approximately, represent an increase of 141 flocks included in the programme in 2008 and a reduction of 112,518 in the number of animals.

The programme's rate of coverage in 2006 was practically 100 % of both animals and flocks. This circumstance may be due to a greater accuracy in the figures or to the recent evolution of the censuses.

The main issues of the health programme are still the same as those put forward at the meeting in Palermo, although significant progress has been made in each of them. These are as follows:

- Serological diagnosis of the disease once yearly in 100 % of animals aged over 6 months;
- Electronic identification of all animals with a positive result;
- Regular follow-up of the disease and adoption of the necessary means to eradicate it in affected flocks by eliminating seropositive animals and replacing them with others from disease-free flocks.

The number of flocks and animals followed up in 2006 was ca. 100 %. However this figure remains lower than 100 % in at least two provinces. The rate of tested animals is close to 100 % as well

One of the most significant achievements of the programme is a reduction in the period between diagnosis and slaughter of positive animals from 30 to 15 days.

The number of flocks infected with *B. melitensis* in Sicily has fallen steadily in recent years, between 2003 and 2007, when it reached an all-time low of 15% (Fig. 15). Figure 16 gives the evolution of incidence of infected flocks and respective prevalence rates of infected flocks and animals from 2003 to 2007 in the whole Sicily.

The prevalence of *B. melitensis* in flocks fell from 18 % in 2003 to 14 % in 2007. The highest prevalence in flocks is still that of Catania, even though it is less than 30 %, compared to 32 % in 2005; Trapani, with more than 26 % in 2005; and Caltanissetta, which fell from 25 % in 2005 to 20 %.

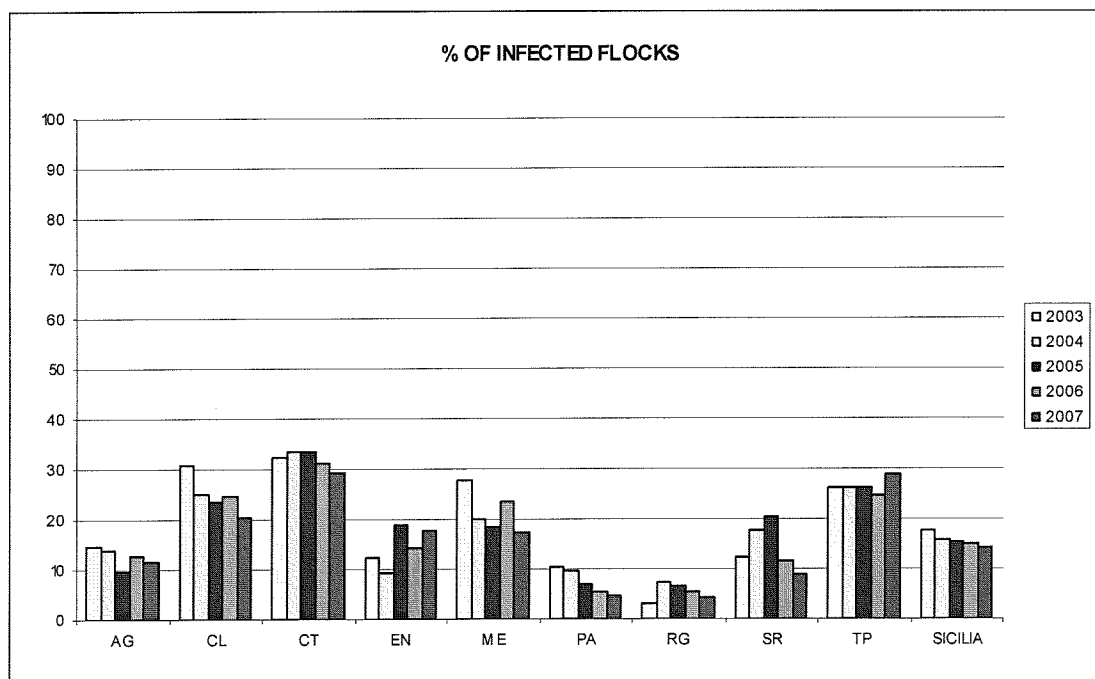


Fig. 15. Prevalence rates of infected flocks in Sicily (2003-2007)

The number of infected animals fell to levels below 5 % in the final two years (9 % in 2003 to 4.5 % in 2007). The number of animals infected with *B. melitensis* and slaughtered in 2007 was 100 %, with a reduction, as mentioned above, in the number of days between diagnosis and slaughter.

The incidence however remained stable from 2003 to 2007 (ca. 6 %)

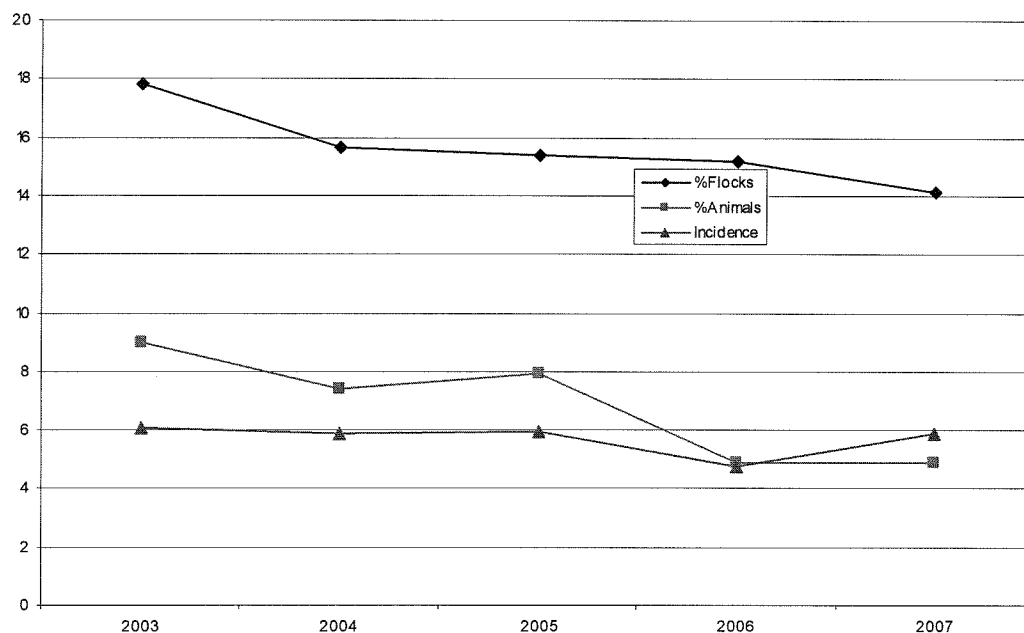


Fig. 16. Incidence and Prevalence Brucellosis in Sicily (2003-2007)

B. melitensis biovar 3 is the predominant strain in Sicily in both sheep and goats. The maximum number of strains isolated in sheep was 50 in 2005, falling to 21 in 2006 and 23 in 2007. The number of strains isolated in goats is much lower, with a total of 13 in 2007 but no isolations in the previous years.

The vaccination plan for sheep and goats with subcutaneous Rev.1 strain vaccine started in 2004 and has evolved progressively, especially if we take into account the results in the report corresponding to the Palermo meeting in November 2005. In 2004 only 46 % of flocks were included in the vaccination programme and just 19% of them were vaccinated.

Conversely, and according to the figures presented in Rome in 2008, the numbers have gone from 1,177 flocks vaccinated in 2005, with a vaccination coverage of 86.04 % and 46,277 animals, to 1,316 flocks and 60,247 animals (a vaccination coverage of 103.87 %). The 2006 figures are 1,424 flocks (102.30 % coverage) and 60,702 animals vaccinated.

The collaboration of the Sicilian veterinary services in this important aspect of the control of ovine and caprine brucellosis has come late but is worthy of mention. It should be noted in how little time they have achieved a good vaccination coverage.

The organisation of the veterinary services was regarded by the Task Force members as one of the critical issues of the brucellosis control programme in small ruminants and especially in Sicily, considering the low salaries of official vets, the precarious work and the harsh conditions, particularly due to the hardness of the terrain.

When asked about recent progress in line with Task Force recommendations, it was replied that the recommendations had been taken well into consideration and that an act had been promulgated, although the text was not available at the meeting. Although promised in April to be sent by e-mail, nothing has yet been received in July.

5 2ND DAY – GENERAL DISCUSSION – CONCLUSIONS & RECOMMENDATIONS OF THE SUB-GROUP

CONCLUSIONS	RECOMMENDATIONS
TO THE NATIONAL LEVEL	
<p>At the national level the epidemiological situation regarding brucellosis in sheep and goats is improving with an increasing number of BmOF regions, in the Central and Northern parts of Italy.</p> <p>The group acknowledges the development of the information system to manage data on small ruminants population and brucellosis eradication.</p>	
<p>There was no information given to the group suggesting a steady progress at the southern regions of Campania, Calabria and Puglia.</p> <p>In these regions, as well as in Sicily, a special program was edited by the <i>Ordinanza Ministeriale 14-11-2006</i> with complementary measures that can help in controlling the disease. Vaccination was not foreseen for any epidemiological situation.</p>	
<p>As already recognised by the sub-group, the strategy for decision of stamping-out has not been formalised at the national level. In practice, the lacks of rules leave this decision to the criteria of a group including the local vet and the farmer.</p>	<p>Guidelines should be issued on the criteria to carry out stamping out. This should be a compulsory rule for confirmed outbreaks in Officially Free Region.</p> <p>For non-free areas, criteria should be established, for adoption of stamping out, which can be adapted to the specific epidemiological situation.</p> <p>The decision to carry out the stamping-out should be taken only by the vet authorities.</p>
<p>Testing regimes presented at national level for the BmOF regions include all flocks every year, with a selection of 10-25 % of animals per flock, according with the epidemiological situation of the province. However, data presented by the regions indicated random sampling of flocks in BmOF regions allowing flocks not being tested for 3 consecutive years.</p> <p>According with EU Regulation the maintenance of BmOF status of a region requires annual tests.</p>	<p>The Italian legislation on qualification and maintenance of regions should be modified to fully conform to the EU legislation.</p>
<p>The national reference laboratory has intensified its activities regarding the technical support to the regions and the CCA.</p> <p>Ring trials have been implemented and for the failing labs, support on the identification and solution of abnormalities have been implemented. Nevertheless the NRL did not repeat the evaluation to assure that solutions adopted were efficient. Moreover, no information regarding the quality level of the laboratories is given to the central authority.</p>	
<p>There was a substantial increase in the work of <i>Brucella</i> confirmation and identification of strains, with consequent improvement of the quality of epidemiological information.</p>	
<p>No information is apparently available on the <i>Brucella</i> involved in human brucellosis in Italy. This information is of capital importance in order to determine and control sources of human infection (endemic and/or exotic).</p>	<p>The establishment of a national reference centre that could collect information as regards the strains isolated in humans.</p>

TO THE REGIONAL LEVEL	
Some officially free provinces, especially those acquiring the status recently remain at risk of brucellosis due to the resurgence of local foci or introduction of the disease through animal movements (market, transhumance).	The free areas should concentrate efforts in identifying the remaining risk sources in order to prevent the re-introduction of the disease. This needs for example: <ul style="list-style-type: none"> - A permanent knowledge of the status of area of destination of flocks transhuming from free areas (exchange of information between provinces); - Regular testing after movements; - Search for other potential reservoir, including wildlife.
Many regions of Italy have now reached the officially free status, and some of them for several years with accumulation of experience, as the case presented by Sardinia.	It would be important to establish a common agreed protocol for the management of false positive serological reactions, with the objective of reducing the suspension time, in absence of risk.
TO LAZIO	
The group acknowledges the progress made in the Region and the decision on re-enforcing the programme at Frosinone province in order to rapidly reach the officially free status.	
TO SARDINIA	
The group acknowledges the work developed by this region to demonstrate that the free status corresponds to the absence of <i>Brucella</i> . The number of positive animals observed is compatible with the expected number of false positive reactions due to the limited specificity of the diagnostic tests.	Nevertheless, at flock level it is important to establish a surveillance protocol which reduces the number of false positives
TO SICILY	
A good level of coverage of the programme, according with the data presented, has been achieved in 2006 but it decreased in 2007, in several areas. The assessment of the epidemiological situation of distinct areas is completed allowing the definition of adapted strategies for brucellosis control and eradication. The prevalence at flock level decreased in 2006 and maintained the same level in 2007, while incidence increased from 2006 to 2007.	The group maintains most recommendations proposed in 2005, which are regarded as minimum requirements for the Sicilian programme of brucellosis control and eradication. It is essential that a good coverage of the programme is maintained. It is essential that that the programme is adapted to the epidemiological and production system situation and that mass vaccination is considered for the most infected areas.
Vaccination increased from 2005 to 2006, but the number of vaccinated animals decreased in 2007, while the rate of vaccinated flocks/ infected flocks increased. However, this indicator does not inform on the % of infected flocks that where vaccinated.	Vaccinate all replacement animals, not only in infected flocks but in all flocks of infected areas. Cross-reactions should be considered a marginal problem, regarding the importance of a good and persistent vaccination coverage (at least for 10 years). The group recommends the change from subcutaneous vaccination to the conjunctival vaccination with full doses of Rev.1 vaccine to avoid the vaccine-induced serological reactions.
Compliance with time intervals for the follow-up of infected flocks is improving but still higher than the	It would be advisable to identify constraints in this respect and implement measures to speed up the follow-up of infected flocks.

requirements of legislation.	
No information was presented regarding the slaughter of infected animals and the extent of application of stamping-out.	Infected animals should be slaughtered as fast as possible in order to prevent spreading of disease. Stamping-out should be more frequently considered particularly when within-flock infection rate is important.
No information was presented regarding the compliance with new regulations issued for the infected areas of Italy, regarding the permission of movements only to brucellosis free flocks.	Implement a system for the management of transhumance and the use of common pastures according with the flock classification

PARTICIPANTS
OF THE “SHEEP & GOATS BRUCELLOSIS” TASK FORCE SUBGROUP MEETING
HELD IN ROMA, ITALY, ON 23-24 APRIL 2008

▪ **Task Force Sub-Group**

- Dr. Bruno GARIN-BASTUJI Chairman, France
- Dr. Manuel DURAN FERRER Spain
- Dr. Anastasios MINAS Greece
- Dr. Georgia MPARGOULI Cyprus
- Pr. Dr. Yolanda VAZ Portugal
- Dr. Fernando CRESPO-LEON Spain
- Dr. Valentina PIAZZA Commission
- Dr. James MOYNAGH Commission

▪ **Observer**

- Dr. Dimitri VOUIDIS Central Vet. Services of Greece
- Dr. Cesar SALINAS Vet. Services of Navarra

▪ **Italian Representatives (main list)**

- **Ministry of Health [National Veterinary Services]**
 Dr. G. FERRI – Dr. U. SANTUCCI - Dr. M. AVETTA – Dr. M. PAGLIALLUNGA
- **NRL – IZS Teramo**
 Dr. M. TITTARELLI
- **IZS Lazio & Toscana, Rome**
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- **Veterinary Services of Region Lazio, Rome**
 Dr. U. DELLA MARTA – Dr. V. FICARELLI
- **IZS Sardegna, Sassari**
 Dr. S. ROLESU - Dr N. PONTI
- **Veterinary Services of Region Sardegna, Cagliari**
 Dr. S. FARINA
- **IZS Sicilia, Palermo**
 Dr. S. CARACAPPA - Dr. C. Di BELLA
- **Veterinary Services of Region Sicilia, Palermo**
 Dr. V. BONOMO – Dr. P. SCHEMBRI

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ANNEX 2

AGENDA OF THE "SHEEP & GOATS BRUCELLOSIS" TASK FORCE SUBGROUP HELD IN ROMA, ITALY, ON 23-24 APRIL 2008

Wednesday, 23 April

9.00-9.15	Welcome and introduction
9.15-9.45	Structure & organisation of the veterinary services in Italy Italian legislation related to the control of sheep and goat brucellosis. Compensation system. Structure and distribution of ovine and caprine livestock in Italy.
9.45-10.15	Structure of the NRL and evolution of the National Eradication Programme for sheep and goat brucellosis in Italy. Current situation and perspectives.
10.15-10.30	Discussion
10.30-11.15	Lazio – structure of the IZS Lazio and Toscana. Evolution, current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.
11.15-11.30	Discussion
11.30-11.45	Coffee break
11.45-12.30	Sardinia – Evolution, current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.
12.30-13.00	General discussion of the morning
13.00-15.00	Lunch
15.00-15.45	Sicily – Evolution (follow up from previous TF subgroup in 2005), current situation and perspective of the sheep and goat brucellosis. Main epidemiological indicators and special actions.
15.45-16.00	Discussion
16.00-16.15	Coffee break
16.15-17.00	General discussion

Thursday, 24 April

9.00	Discussion Coffee Discussion of the subgroup General discussion, Recommendations and Closing meeting
13.00-15.00	Lunch