



Appendix A

Results of a survey conducted by the Animal Identification SC on "Animal identification systems in ICAR member countries"



1. Introduction

In the modern world of agriculture secure, unique identification and reliable and rapid traceability are key factors not only for live animals but also for international trade in animal products. Identification and registration is moving from being voluntary, farmer decided systems to become legislative systems to facilitate disease and chemical residue tracing and control. It is important, that animal producer organisations are able to adapt their systems to meet the demands of animal health authorities, and that these authorities acknowledge the capabilities of systems already in operation.

Accurate and unique identification of animals has been for a long time, the key for:

- Everyday management in the herd.
- Recording of animal production.
- Animal health programmes.
- Breeding programmes.

Now, further important users of animal identification are

- Consumer protection programmes.
- Animal premium programmes.
- Product branding systems.

In January 2003, the ICAR Sub-Committee on Animal Identification circulated a questionnaire on identification systems to all ICAR member organisations. In October 2003, a reminder was sent to all member organisations that had not yet responded to the questionnaire. This Report includes all answers received before January 1, 2004.

The aim of this Report is to reflect the present 'state of the art' regarding animal (cattle; sheep; goat; buffalo) identification systems implemented in ICAR member countries. The results of this survey are not intended to provide recommendations for new systems, however, much inspiration can be derived from looking at existing systems.

Altogether, 100 systems are described in the Report:

Species	Countries	Systems
Cattle	31	39
Sheep	19	28
Goat	20	26
Buffalo	5	7

The systems in general relate to a country or a province, but in Spain the respondent used the opportunity to collect information on all systems used in the above species throughout the country. In Spain there are a total of 41 systems, as each breed society seemed to have its systems, although they were very similar. These systems now are merging into national systems for each species. Similar situations of systems within one country might apply also for other countries.

2. Systems for cattle

Information on the type of system and the level of use of these systems for cattle are given in Table 1.

The table is grouped into World regions and shows type of ID-system, defined as:

Code	Description of Type of ID-system	Answers	
		Number	%
1	Mandatory permanent ID-system for all animals, unique lifetime ID	33	84.6
2	Mandatory permanent ID-system for herdbook animals, unique lifetime ID	3	7.7
3	Mandatory permanent ID-system for disease control, unique lifetime ID	1	2.6
4	Mandatory temporary ID-systems (movement tags)	1	2.6
5	Voluntary ID-systems for herdbook animals, unique lifetime ID	1	2.6

The list also shows the type of legislation covering the systems defined as:

Code	Description of Legislation	Answers	
		Number	%
1	Governmental mandatory ID-system at animal level, no official database	0	0.0
2	Governmental mandatory ID-system and database at animal level	32	82.1
3	Governmental mandatory ID-system at group level, no official database	1	2.6
4	Governmental mandatory ID-system at group level and database	3	7.7
5	No governmental requirements	3	7.7

The completed questionnaires predominantly came from EU countries and those countries that joined the EU in 2004. The EU legislation requires that all cattle are individually and uniquely identified, and that all movements are registered in official databases. It is no surprise that all these countries that responded have governmental mandatory permanent ID-system for all animals, unique lifetime ID and databases at animal level, and that they have 100 percent (or for those joining the EU: nearly 100 percent) animals tagged and registered in the database.

Similar systems are reported from Tunisia, Australia (Victoria), Israel, Switzerland, Canada and Argentina.

Only three identification systems are reported without a database connected.

Table 1. Type of ID systems used for cattle and level of participation.

Reference number	Country	State/ Province	World Region	Type of ID-System	Number of animals (1000)	Percent identified	Legislation
75	Sudan		Africa	2			3
78	Sudan		Africa	3			4
81	Sudan		Africa	4			4
87	Tunisia		Africa	1	230	30	2
9	Australia	Victoria	Australasia	1	3 000	95	2
24	New Zealand		Australasia	1	5 500	98	4
10	Austria		EU	1	2 100	100	2
11	Belgium	Flanders, Sanitel	EU	1	3 000	100	2
12	Belgium	Wallone, Sanitel	EU	1	3 000	100	2
13	Belgium	Flanders	EU	1	2 300	100	5
14	Belgium	Wallone	EU	1	3 430	100	2
97	Denmark		EU	1	1 745	100	2
18	Finland		EU	1	1 035	100	2
19	France		EU	1	20 000	100	2
100	Germany		EU	1	14 000	100	2
21	Italy		EU	1	4 200	100	2
25	Portugal		EU	1			2
26	Rep. Ireland		EU	1	2 300	100	2
29	Spain		EU	1	7 742	100	2
30	Sweden		EU	1	1 679		2
32	The Netherlands		EU	1	3 795	100	2
33	UK	N Ireland	EU	1			2
90	UK	Jersey	EU	1	7	100	2
95	Cyprus		EU 2004	1	120		2
96	Cyprus		EU 2004	1	3		2
16	Czech Rep.		EU 2004	1			2
17	Estonia		EU 2004	1	250	95	2
20	Hungary		EU 2004	1	855	100	2
22	Latvia		EU 2004	1	409	95	2
27	Slovakia		EU 2004	1	669	97	2
28	Slovenia		EU 2004	1	490	99	2
15	Croatia		Europe	2	118	54	2
72	Israel		Europe	1	250	100	2
31	Switzerland		Europe	1	2 100		2
86	Turkey		Europe	2	977	9	5
84	Canada		North America	1		100	2
85	Canada	Quebec	North America	1		100	2
23	Mexico		North America	5	70	20	5
8	Argentina		South America	1	350	18	2

2.1. Tagging in cattle

Table 2 shows the responses relating to tagging of cattle.

Age when tagged is defined as:

Code	Description of age when tagged	Answers	
		Number	%
1	Within seven days from birth	20	54.1
2	Within 20 days from birth	8	21.6
3	Within 30 days from birth	4	10.8
4	Within 60 days from birth	1	2.7
5	Within 180 days from birth	1	2.7
6	Before leaving place of birth	2	5.4
7	Temporary tagging at each movement	1	2.7

In all situations defined by a number of days from birth, it is a prerequisite that animals are tagged before leaving the place of birth.

Applicator of tags is defined as:

Code	Description of who applies tags	Answers	
		Number	%
1	Farmer may apply official tags to the animal	30	78.9
2	Farmer may not apply official tags to the animal	0	0.0
3	Farmer applies preliminary tag – official person later applies official tag	1	2.6
4	Official person must apply all official tags (inspector, veterinarian etc.)	7	18.4

Predominately animals are tagged within 7 days after birth. Only in 5 systems does the tagging occur after 30 days from birth.

82% of the systems require 2 plastic eartags. However, in some countries, one tag is made of plastic and the other tag is made of metal. In three systems there is an option for the farmer to decide the material of one of the tags. Only one system does not require an eartag.

In some systems ear notching, horn branding, tattooing or sketch/photograph are used as supports to tagging.

In 92% of the systems a replacement tag must have the same ID-code as the lost tag. In a few systems the replacement tag has a different number, which is connected to the old tag number through the database. Only Israel reports, that replacement tags are not at all connected to the lost tag.

Table 2. Description of the type of cattle identification tags used in different countries, when applied and who is responsible for application.

Reference number	Country	Age when tagged	Application of tags	Number of tags	Plastic	Metal	Tags same material	Tags different material	Option, one	Ear notching	Horn Branding	Tattooing	Sketch/Photograph	Other1	Same ID at replacement	New connected ID at replacement	New not connected ID at replacement
75	Sudan	1	1	1	X				X	X					X		
78	Sudan	*	3								X	X	X		X		
81	Sudan	7	4	1	X						X	X	X		X		
87	Tunisia	1	4	1	X		X			X					X		
9	Australia	6	1	1	X											X	
24	New Zealand	5	1	2	X	X			X						X		
10	Austria	1	1	2	X		X								X		
11	Belgium	1	1	2	X		X								X		
12	Belgium	1	1	2	X		X								X		
14	Belgium	1	1	2	X		X								X		
97	Denmark	1	1	2	X		X								X		
18	Finland	1	1	2	X		X								X		
19	France	1	1	2	X		X								X		
100	Germany	1	1	2	X		X								X		
21	Italy	1	1	2	X		X								X		
25	Portugal	2	1	2	X		X								X		
26	Rep. Ireland	3	1	2	X		X								X		
29	Spain	2	1	2	X		X								X		
30	Sweden	2	1	2	X		X								X		
32	The Netherlands	1	1	2	X		X								X		
33	UK	1	1	2	X		X								X		
90	UK	1	1	2	X		X								X		
95	Cyprus	1	4	2	X		X							**	X		
96	Cyprus	1	4	1					X							X	
16	Czech Rep.	1	1	2	X	X		X							X		
17	Estonia	2	1	2	X	X				O			O		X		
20	Hungary	2	4	2	X		X								X		
22	Latvia	2	1	2	X		X			O		O			X		
27	Slovakia	1	1	2	X	X	X								X		
28	Slovenia	2	1	2	X		X								X		
15	Croatia	3	4	2	X										X		
72	Israel	1	1	2	X			X									X
31	Switzerland	2	1	2	X		X								X		
86	Turkey	3	4	2	X				X						X		
84	Canada	6	1	2	X		X						***		X		
85	Canada	1	1	2	X		X						***		X		
23	Mexico	3	1	2	X		X								X		
8	Argentina	4	1	1	X							X	X		X		

O: Optional, *: At time of vaccination, **: Plastic Necktag, ***: Herdbook Animals

2.2. Visual ID-codes in cattle

Information on visual ID-codes is shown in Table 3.

In 87% of the systems, visual cattle ID-codes are purely numeric. However, in Sudan, New Zealand and Australia the systems have alphanumeric codes.

In 10% of the systems, the visual ID-code has more than 12 characters. About half of the systems include a check digit in the visual ID-code.

In 36% of the systems, the visual ID-code is just a serial number. In 44%, the visual ID-code contains information about region, in 21% about farm and in 10% about recording organisation.

In 82% of the systems ID-codes are unique at national level, however, Sudan, Cyprus and Argentina have systems that are only unique at the sub-national level.

Types of visual codes	Answers	
	Number	%
Visual ID numeric	34	87
Visual ID alphanumeric	4	10
Check-digit in visual ID	Yes: 16 No: 7	Yes:41 No: 18
Visual ID purely serial	14	36
Visual ID identifies region	17	44
Visual ID identifies farm	8	20
Visual ID identifies organisation	4	10
Visual ID unique, country	32	82
Visual ID unique, farm	4	10
Visual ID unique, organisation	1	3

Table 3. Description of visual ID-codes used in different countries to identify cattle.

Reference number	Country	State/Province	Visual ID numeric	Visual ID alpha	Visual ID both	Positions in visual ID	Check-digit in visual ID	Visual ID purely serial	Visual ID contains region	Visual ID contains farm	Visual ID contains organisation	Visual ID unique, country	Visual ID unique, farm	Visual ID unique, organisation
	Sudan		X					X		X			X	
78	Sudan			X							X			X
81	Sudan				X		X		X			X		
87	Tunisia		X			10			X			X		
9	Australia	Victoria		X		16	X		X	X		X		
24	New Zealand				X	10				X	X	X		
10	Austria		X			9	X	X				X		
11	Belgium	Flanders, Sanitel	X			9	X		X			X		
12	Belgium	Wallone, Sanitel	X			9	X		X			X		
13	Belgium	Flanders												
14	Belgium	Wallone	X			9	X		X			X		
97	Denmark		X			11	NO			X		X		
18	Finland		X			13	X	X				X		
19	France		X			10	NO		X			X		
100	Germany		X			10	NO		X			X		
21	Italy		X			14	NO		X			X		
25	Portugal		X			9	X		X			X		
26	Rep. Ireland		X			12	X		X	X		X		
29	Spain		X			12	X		X			X		
30	Sweden		X			11	X			X		X		
32	The Netherlands		X			9	X	X				X		
33	UK	N Ireland	X											
90	UK	Jersey	X			12	X		X	X		X		
95	Cyprus		X			4		X					X	
96	Cyprus		X			4		X					X	
16	Czech Rep.		X			9	NO		X			X		
17	Estonia		X			10	X	X				X		
20	Hungary		X			10	X	X				X		
22	Latvia		X			14	NO			X		X		
27	Slovakia		X			12			X		X	X		
28	Slovenia		X			8		X				X		
15	Croatia		X			9	X		X			X		
72	Israel		X			7		X				X		
31	Switzerland		X								X	X		
86	Turkey		X						X			X		
84	Canada		X			8		X				X		
85	Canada	Quebec	X			8		X				X		
23	Mexico		X			9	NO	X				X		
8	Argentina		X					X					X	

2.3. Electronic identification systems in cattle

The responses about use of electronic identification (EID) (Table 4) reflect the situation during 2003, when the EU had not yet decided on its requirements for electronic identification (EID) systems. Table 4 clearly demonstrates, that by 2003, EID has been introduced in official ID systems only in very few countries, such as Australia, New Zealand and Canada. Some responses from EU-countries refer to research trials in the IDEA programme and these are not really officially approved systems. EID has been officially approved in Denmark.

EU approved the ISO standards 11784 and 11785 at the end of 2003. According to ISO standard 11784, the code structure contains a three-digit country code or manufacturer's-code, and a twelve-digit animal ID code, with a space between these codes. Furthermore, the code structure contains a one-digit code for identifying replacement tags. It appears that the two countries that advised that the animal ID code in their country has 16 digits, may have reported on the official ID not the EID.

For countries stating less than 12 digits in the animal ID code, free positions within the twelve-digit code are filled in with zeros in front of the animal ID code.

EID of cattle includes eartags, attachments to eartags or boluses. No countries reported using EID implants.

Type of EID used	Answers	
	Number	%
EID approved	Yes: 10	Yes: 40
	No: 15	No: 60
EID in eartag	5	20
EID in attachment to eartag	3	12
EID in bolus	3	12
EID in implant	0	0

Table 4. Use of electronic cattle identification systems in different countries.

Reference number	Country	State/Province	EID approved	EID in eartag	EID in attachment to eartag	EID in bolus	EID in implant	EID same as visual ID	EID different from visual ID	Positions in EID	Check digit in EID	EID purely serial	EID contains region	EID contains farm
75	Sudan		X		X									
78	Sudan		X		X									
81	Sudan		X			X								
9	Australia	Victoria	X	X		X		X	16	X	X			
24	New Zealand		X	X				X	12			X		
10	Austria		NO											
11	Belgium	Flanders, Sanitel	NO											
12	Belgium	Wallone, Sanitel	NO											
14	Belgium	Wallone	NO											
97	Denmark		X	X				X	11					X
19	France		NO											
21	Italy		X	X		X								
26	Rep. Ireland		NO											
29	Spain		NO											
30	Sweden		NO											
33	UK	N Ireland	NO											
90	UK	Jersey	X		X			X	16	X	X			
16	Czech Rep.		NO											
17	Estonia		NO											
22	Latvia		NO											
15	Croatia		NO											
72	Israel		NO											
84	Canada		X					X						
85	Canada	Quebec	X	X				X						
23	Mexico		NO											

2.4. Movement recording, databases and governmental requirements in cattle

The questionnaire intended to distinguished between recording of movements of groups of animals and recording movement of specific (identifiable) animals (Table 5).

Recording of movement in its simplest form indicates that unspecified animals moved between specified holdings.

Recording of movement of specific animals indicates that specified animals moved between specified holdings.

77% of reported systems have both animals and movements registered in official databases. Especially for herdbook animals, there are also supplementary databases. In addition, farmers in 49% of the systems have to keep on-farm registers. This is the case for all EU countries, even in those countries that did not indicate so in the questionnaire. The responses may indicate that this question was unclear.

79% of all reported systems have to fulfil government requirements on information on both animals and movements.

Movement recording	Answers	
	Number	%
Movement in official database	15	39
Movement at sale yard or auction mart database	6	15
Animal and movement in official database	30	77
Herdbook animal in herdbook database	19	49
Manual farm registers	19	49
Governmental requirements on movements	0	0
Governmental requirements on animals and movements	31	80
No gov requirements	1	3

Table 5. Movement recording and government requirements in different countries.

Reference number	Country	State/Province	Movement in official database	Movement at sale yard or auction mart database	Animal and movement in official database	animal in herdbook	Manual farm registers	Governmental requirements on movements	Gov. requirements on animals and movements	No gov requirements
75	Sudan					X				
78	Sudan				X				X	
81	Sudan		X				X		X	
87	Tunisia				X	X	X		X	
9	Australia	Victoria	X	X	X				X	
24	New Zealand				X	X			X	
10	Austria		X		X	X	X		X	X
11	Belgium	Flanders, Sanitel		X	X		X		X	
12	Belgium	Wallone, Sanitel		X	X		X		X	
13	Belgium	Flanders				X				
14	Belgium	Wallone				X			X	
97	Denmark				X		X		X	
18	Finland				X	X	X		X	
19	France		X		X				X	
100	Germany		X		X	X	X		X	
21	Italy		X		X	X			X	
25	Portugal				X		X		X	
26	Rep. Ireland			X	X	X	X		X	
29	Spain		X		X				X	
30	Sweden				X				X	
32	The Netherlands		X		X	X			X	
33	UK	N Ireland	X		X	X	X		X	
90	UK	Jersey			X	X	X		X	
95	Cyprus				X		X		X	
96	Cyprus				X		X		X	
16	Czech Rep.		X							
17	Estonia				X	X	X		X	
20	Hungary		X		X				X	
22	Latvia		X		X		X		X	
27	Slovakia		X	X	X					
28	Slovenia				X				X	
15	Croatia		X	X	X	X	X		X	
72	Israel		X			X	X		X	
31	Switzerland				X					
86	Turkey					X				
84	Canada				X	X				
85	Canada	Quebec							X	
23	Mexico					X				
8	Argentina				X		X		X	

2.5. Information for traceability in cattle

Each row in Table 6 represents a reported system. Table 6 shows the information that must be recorded in each system. Some systems are based on government requirements and other systems are herdbook systems.

Usually in systems designed just for traceability of animals you do not have to report the sire of the animal, but in herdbook systems you, of course, must record this information.

Systems with no information other than the dates of movements and maybe previous and next farm are systems designed just to indicate lines of trade between herds.

Information recorded for each animal	Answers	
	Number	%
Place of origin	31	82
Date of birth	34	90
Breed	31	82
Sex	32	84
Mother	30	79
Father	17	45
Date of entry	35	92
Previous farm	29	76
Date of departure	33	87
Next farm	25	66
Other	7	18

Table 6. Information recorded in different countries to assist traceability of cattle.

Reference number	Country	State/Province	Place of origin	Date of birth	Breed	Sex	Mother	Father	Date of	Previous farm	Date of departure	Next farm	Other	
75	Sudan		X	X	X	X	X	X	X	X	X	X		
78	Sudan								X	X				
81	Sudan		X	X	X				X	X	X	X		
87	Tunisia		X	X	X	X	X	X	X	X	X	X	1	
9	Australia	Victoria		X					X	X	X	X		From 2004
24	New Zealand			X	X	X	X	X	X	X	X			Dairy cattle
10	Austria		X	X	X	X	X	X	X	X	X	X		From gov
11	Belgium	Flanders, Sanitel	X	X		X	X		X	X	X			
12	Belgium	Wallone, Sanitel	X	X		X	X		X	X	X			
13	Belgium	Flanders	X	X	X	X	X	X		X			3	
14	Belgium	Wallone	X	X	X	X	X	X	X	X	X	X		
97	Denmark		X	X	X	X	X	X	X	X	X	X		
18	Finland		X	X	X	X	X	X	X	X	X	X		
19	France		X	X	X	X	X	O	X	X		X		
100	Germany		X	X	X	X	X		X		X		4	
21	Italy		X	X	X	X	X		X	X	X	X		
25	Portugal		X	X	X	X	X		X	X	X	X		
26	Rep. Ireland		X	X	X	X	X		X	X	X	X		From gov
29	Spain		X	X	X	X	X		X	X	X	X		
30	Sweden		X	X	X	X	X		X	X	X	X		
32	The Netherlands		X	X	X	X	X		X	X	X	X		
33	UK	N Ireland		X	X	X								
90	UK	Jersey	X	X	X	X	X	X	X	X	X	X		
95	Cyprus		X	X	X	X	X	X		X				
96	Cyprus		X	X	X	X	X		X		X			
16	Czech Rep.		X	X	X	X	X	X	X	X	X	X		
17	Estonia		X	X	X	X	X	X	X	X	X	X		
20	Hungary		X	X	X	X	X		X		X	X	2	
22	Latvia		X	X	X	X	X	X	X	X	X	X		
27	Slovakia		X	X	X	X	X		X	X	X	X	1, 3	
28	Slovenia		X						X	X	X	X	2	
15	Croatia		X	X	X	X	X	X		X		X		
72	Israel		X	X	X	X			X		X			
31	Switzerland		X	X	X	X	X	X			X		2, 3	
86	Turkey			X	X	X	X	X	X	X	X	X		
84	Canada								X		X			
85	Canada	Quebec		*	*	*	*	*	X		X			
8	Argentina		X	X	X	X	X	X	X	X	X	X		

3. Systems for sheep

Information on the type of system and the level of use of these systems for sheep are shown in Table 7.

The table is grouped into World regions and shows type of ID-system, defined as:

Code	Description of system	Answers	
		Number	%
1	Mandatory permanent ID-system for all animals, unique lifetime ID	16	57
2	Mandatory permanent ID-system for herdbook animals, unique lifetime ID	9	32
3	Mandatory permanent ID-system for disease control, unique lifetime ID	2	7
4	Mandatory temporary ID-systems (movement tags)	1	4
5	Voluntary ID-systems for herdbook animals, unique lifetime ID	0	0

The table also shows the type of legislation covering the systems defined as:

Code	Description of legislation	Answers	
		Number	%
1	Governmental mandatory ID-system at animal level, no official database	3	11
2	Governmental mandatory ID-system and database at animal level	17	61
3	Governmental mandatory ID-system at group level, no official database	3	11
4	Governmental mandatory ID-system at group level and database	4	14
5	No governmental requirements	1	4

Again the completed questionnaires predominantly came from EU countries and from those countries that joined the EU in 2004.

The diversity of systems for sheep is larger than for cattle, but still the animals have unique lifetime IDs in 96% of reported systems.

Systems with no databases (legislation code 1 or 3) are more frequent than in cattle.

Table 7. Type of ID system used for sheep and level of participation in different countries.

Reference number	Country	State/Province	World Region	Type of ID-System	Number of animals (1000)	Percentage	Legislation
76	Sudan		Africa	2			3
79	Sudan		Africa	3			4
82	Sudan		Africa	4			4
88	Tunisia		Africa	1	230	30	2
52	Austria		EU	2			1
53	Austria		EU	1			3
54	Belgium	Flanders, Sanitel	EU	2	4	100	2
55	Belgium	Flanders	EU	2	4		2
56	Belgium	Flanders	EU	2	40	100	2
57	Belgium	Wallone	EU	2	40	100	2
58	Belgium	Wallone, Sanitel	EU	1	200	90	4
98	Denmark		EU	1	201	100	2
61	France		EU	1	14,000	95	1
62	France		EU	2	1,280	18	2
73	Germany		EU	2			5
64	Italy		EU	1	4,200	100	2
66	Portugal		EU	3			1
69	Spain		EU	1	24,300	100	3
70	Sweden		EU	1	426		4
59	Czech Rep.		EU 2004	1			2
60	Estonia		EU 2004	1	24	70	2
63	Hungary		EU 2004	1	970	92	2
65	Latvia		EU 2004	1	16	95	2
67	Slovakia		EU 2004	1	253	70	2
68	Slovenia		EU 2004	2	15	16	2
91	Cyprus		EU 2004	1	1		2
93	Cyprus		EU 2004	1	3		2
71	Switzerland		Europe	1	2,1		2

3.1. Tagging in sheep

Table 8 shows the responses relating to tagging of sheep. Age when tagged is defined as:

Code	Description of age when tagged	Answers	
		Number	%
1	Within seven days from birth	10	39
2	Within 20 days from birth	3	12
3	Within 30 days from birth	2	8
4	Within 60 days from birth	4	15
5	Within 180 days from birth	2	8
6	Before leaving place of birth	4	15
7	Temporary tagging at each movement	1	4

In all situations defined by a number of days from birth, it is a prerequisite, that animals are tagged before leaving the place of birth. Applicator of tags is defined as:

Code	Description of who applies tags	Answers	
		Number	%
1	Farmer may apply official tags to the animal	17	61
2	Farmer may not apply official tags to the animal	0	0
3	Farmer applies preliminary tag – official person later applies official tag	4	14
4	Official person must apply all official tags (inspector, veterinarian etc.)	7	25

The age of sheep when tagged varies quite considerably, and it is more usual for official persons / inspectors to apply the tag(s). 54% of the systems use only one plastic eartag. 32% use two plastic eartags. Nearly all systems use plastic eartags. However, in some countries, one tag is made of plastic and the other tag is made of metal. In three systems there is an option for the farmer to decide the material of the tags. Only one system does not require an eartag. In some systems, ear notching, horn branding, tattooing or sketch/photograph are used as supports to tagging. In 79% of all systems a replacement tag must have the same ID-code as the lost tag. In two systems the replacement tag has a different number, which is connected to the old tag number through the database. In three systems, the replacement tags are not connected to the lost tag.

Table 8. Description of the type of tags used in different countries, when applied and who is responsible for application.

Reference number	Country	Age	Application of tags	Number of tags	Plastic	Metal	Same material	Different material	Option, one	Option, all	Ear notching	Horn Branding	Tattooing	Sketch/Photograph	Same ID at replacement	New connected ID at replacement	New not connected ID at replacement	
76	Sudan	1	1	1	X				X		X				X			
79	Sudan	*	3									X	X	X	X			
82	Sudan	7	4	1	X							X	X	X	X			
88	Tunisia	1	4	2	X		X				X				X			
52	Austria	1	3	**	X	X				X					X			
53	Austria	6	1	1	X	X				X					X			
54	Belgium	4	1	1	X										X			
55	Belgium		1	1	X										X			
56	Belgium	4	1	1	X										X			
57	Belgium	1	1	1	X										X			
58	Belgium	5	1	1	X												X	
98	Denmark	4	1	2	X		X								X			
61	France	1	1	2	X												X	
62	France	1	4	2	X								O		X			
73	Germany	3	1	2	X		X											
64	Italy	1	1	2	X		X						X		X			
66	Portugal	5	4	1	X												X	
69	Spain	6	1	1	X										X			
70	Sweden	6	1	2	X	X		X							X			
59	Czech Rep.	1	1	2	X	X		X							X			
60	Estonia	2	1	1	X										X			
63	Hungary	6	4	1	X										X			
65	Latvia	2	1	2	X		X				O		O		X			
67	Slovakia	4	3	1	X		X						O		X			
68	Slovenia	3	3	2	X								O			X		
91	Cyprus	1	4	1	X		X				X		X		X			
93	Cyprus	1	4	1	X		X									X		
71	Switzerland	2	1	2	X		X								X			
0	Option																	
*	Vaccination																	
**	1 or 2 tags optional																	

3.2. Visual ID-codes in sheep

Information on visual ID-codes in sheep is shown in table 9.

In 79% of the systems, visual sheep ID-codes are numeric. However, a number of systems have alphanumeric (i.e. both numeric and alpha) characters.

In 4 systems the visual ID-code has more than 12 characters. Only 3 systems include a check digit in the visual ID-code.

In 21% of the systems the visual ID-code is just a serial number. In the remainder, the visual ID code contains information about region, farm or recording organisation.

75% of the systems have unique ID-codes at national level, however, Sudan, Austria, Germany and Cyprus have systems that are only unique at the sub-national level.

Type of ID codes	Number	%
Visual ID numeric	22	79
Visual ID alphanumeric	6	22
Check-digit in visual ID	Yes: 3 No: 8	Yes: 11 No: 29
Visual ID purely serial	6	21
Visual ID identifies region	12	43
Visual ID identifies farm	12	43
Visual ID identifies organisation	5	18
Visual ID unique, country	21	75
Visual ID unique, farm	4	14
Visual ID unique, organisation	2	7

Table 9. Description of visual ID-codes used in different countries to identify sheep.

Reference number	Country	State/Province	Visual ID numeric	Visual ID alpha	Visual ID both	Positions in visual ID	Check-digit in visual ID	Visual ID purely serial	Visual ID contains region	Visual ID contains farm	Visual ID contains organisation	Visual ID unique, country	Visual ID unique, region	Visual ID unique, farm	Visual ID unique, organisation
76	Sudan		X					X		X				X	
79	Sudan			X							X				X
82	Sudan				X		X		X			X			
88	Tunisia		X			10			X			X			
52	Austria		X			9	X		X			X			
53	Austria		X			7		X						X	
54	Belgium	Flanders, Sanitel			X	9				X	X	X			
55	Belgium	Flanders	X			8			X	X		X			
56	Belgium	Flanders			X	9				X	X	X			
57	Belgium	Wallone	X			8	NO			X		X			
58	Belgium	Wallone, Sanitel	X			8	NO		X			X			
98	Denmark		X			11	NO			X		X			
61	France		X			13	NO		X	X		X			
62	France		X		Tattoo	13	NO		X	X		X			
73	Germany				X			X							X
64	Italy		X			14	NO		X	X		X			
66	Portugal		X			8			X			X			
69	Spain				X	12				X					
70	Sweden		X			10						X			
59	Czech Rep.		X			9	NO		X			X			
60	Estonia		X			10	X	X				X			
63	Hungary		X			10			X	X		X			
65	Latvia		X			14	NO			X		X			
67	Slovakia		X			9			X		X	X			
68	Slovenia		X									X			
91	Cyprus		X			4		X						X	
93	Cyprus		X			4		X						X	
71	Switzerland		X								X	X			

3.3. Electronic identification systems in sheep

The responses to the questionnaire about use of electronic identification (Table 10) reflect the situation during 2003, when the EU had not yet decided on its requirements for electronic identification (EID) systems. Some responses from EU-countries refer to trials in the IDEA programme and these are not really officially approved systems. EID has been officially approved in Denmark.

EU approved the ISO standards 11784 and 11785 at the end of 2003. According to ISO standard 11784, the code structure contains a three-digit country code / manufacturer's-code and a twelve-digit animal ID code, with a space between these codes. Furthermore, the code structure contains a one-digit code for identifying replacement tags.

For countries stating less than 12 digits in the animal ID code, free positions within the twelve-digit code are filled in with zeros in front of the animal ID code.

EID of sheep includes eartags, attachments to eartags or boluses. No countries reported using EID implants.

Summary of answers	Answers	
	Number	%
EID approved	Yes: 6	Yes: 30
	No:14	No: 70
EID in eartag	2	10
EID in attachment to eartag	2	10
EID in bolus	2	10
EID in implant	0	0

Table 10. Use of electronic sheep identification systems in different countries.

Reference number	Country	State/Province	EID approved	EID in eartag	EID in attachment to eartag	EID in bolus	EID in implant	EID same as visual ID	EID different from visual ID	Positions in EID	Check digit in EID	EID purely serial	EID contains region	EID contains farm	EID contains organisation
76	Sudan		X		X										
79	Sudan		X		X										
82	Sudan		X			X									
52	Austria		NO												
53	Austria		NO												
54	Belgium	Flanders, Sanitel	NO												
55	Belgium	Flanders	NO												
56	Belgium	Flanders	NO												
57	Belgium	Wallone	NO												
58	Belgium	Wallone, Sanitel	NO												
98	Denmark		X	X				X		11				X	
61	France		NO												
62	France		NO												
64	Italy		X	X		X									
69	Spain		NO												
70	Sweden		X												
59	Czech Rep.		NO												
60	Estonia		NO												
63	Hungary		NO												
65	Latvia		NO												

3.4. Movement recording, databases and governmental requirements in sheep

The questionnaire intended to distinguish between recording of movements of groups of animals and recording of movement of specific (identifiable) animals.

Recording of movement in its simplest form is that unspecified animals moved between specified holdings.

Recording of movement of specific animals is that specified animals moved between specified holdings.

Each row in table 11 represents one system only, so it was expected that systems where both animals and movements were in one database (column 6), there would have been no indications saying that movements were kept in an official database (column 4). The double answers may indicate, that there are in fact more than one database in the system (maybe a farmer owned and a government owned), and that the information in those two databases may not be exactly the same. Government databases need some information for traceability, whereas farmer owned databases need also information on production, classification etc. etc.

The picture is more diverse than for cattle. The reason for this is, that many sheep systems register movements of groups of animals.

11% of the systems have no governmental requirements, 18% have requirements to register movements of groups of animals and 46% of the systems require recording of movements of specific animals.

Summary of answers	Answers	
	Number	%
Movement in official database	7	25
Movement at sale yard or auction mart database	0	0
Animal and movement in official database	11	39
Herdbook animal in herdbook database	11	39
Manual farm registers	16	57
Governmental requirements on movements	5	18
Governmental requirements on animals and movements	13	46
No gov requirements	3	11

Table 11. Movement recording for sheep and government requirements in different countries.

Reference number	Country	State/Province	Movement in official databases	Movement at saleyard/auction mart	Animal and movement in official database	Herdbook animal in herdbook database	Manual farm registers	Gov require on movements	Gov require on animals and movements	No gov requirements
76	Sudan					X				
79	Sudan				X				X	
82	Sudan		X				X		X	
88	Tunisia				X	X	X		X	
52	Austria					X	X			X
53	Austria						X			X
54	Belgium	Flanders, Sanitel			X					
55	Belgium	Flanders	X			X			X	
56	Belgium	Flanders	X			X			X	
57	Belgium	Wallone				X			X	
58	Belgium	Wallone, Sanitel						X		
98	Denmark				X		X		X	
61	France						X			
62	France					X	X			
73	Germany					X	X	X		
64	Italy		X		X	X			X	
66	Portugal							X		
69	Spain						X	X		
70	Sweden						X		X	
59	Czech Rep.		X							
60	Estonia				X		X		X	
63	Hungary		X		X		X		X	
65	Latvia		X		X		X		X	
67	Slovakia				X	X	X			X
68	Slovenia					X				
91	Cyprus				X		X		X	
93	Cyprus						X	X		
71	Switzerland				X					

3.5. Information for traceability in sheep

Each row in table 12 represents a reported system. Table 12 shows the information that must be recorded in each system. Some systems are based on government requirements and other systems are herdbook systems. Usually in systems designed just for traceability of animals you do not have to report the sire of the animal, but in herdbook systems you, of course, must record this information. Systems with no information other than the dates of movements and maybe previous and next farm are systems designed to indicate lines of trade between herds.

Information recorded for each animal	Answers	
	Number	%
Place of origin	21	88
Date of birth	20	83
Breed	19	79
Sex	19	79
Mother	17	71
Father	15	63
Date of entry	22	92
Previous farm	19	79
Date of departure	22	92
Next farm	20	83
Other	4	17

Table 12. Information recorded in different countries to assist traceability for sheep.

Reference number	Country	State/Province	Place of origin	Date of birth	Breed	Sex	Mother	Father	Date of entry	Previous farm	Date of departure	Next farm	Other
76	Sudan		X	X	X	X	X	X	X	X	X	X	
79	Sudan								X	X			
82	Sudan		X	X	X				X	X	X	X	
88	Tunisia		X	X	X	X	X	X	X	X	X	X	Veterinary information
52	Austria		X	X	X	X	X	X	X	X	X	X	
55	Belgium	Flanders	X	X	X	X	X	X	X	X	X	X	
56	Belgium	Flanders	X	X	X	X	X	X		X		X	
57	Belgium	Wallone	X	X	X	X	X	X	X	X	X	X	
58	Belgium	Wallone, Sanitel	X	X		X			X	X	X	X	
98	Denmark		X	X	X	X	X	X	X	X	X	X	
62	France		X	X	X	X	X	X	X	X	X	X	Culling reason
73	Germany			X	X	X	X	X	X		X		
64	Italy		X	X	X	X	X		X	X	X	X	
69	Spain								X	X	X	X	
70	Sweden		X	X					X	X	X	X	
59	Czech Rep.		X	X	X	X	X	X	X	X	X	X	
60	Estonia		X	X	X	X	X	X	X	X	X	X	
63	Hungary		X	X	X	X			X		X	X	
65	Latvia		X	X	X	X	X	X	X	X	X	X	
67	Slovakia		X	X	X	X	X	X	X	X	X	X	
68	Slovenia		X								X	X	Culling reason
91	Cyprus		X	X	X	X	X	X	X	X	X	X	
93	Cyprus		X		X	X	X		X		X		
71	Switzerland		X	X	X	X	X	X	X		X		Colour, Culling reason

4. Systems for goats

Information on the type of system and the level of use of these systems for goats are given in table 13.

The table is grouped into World regions and shows type of ID-system, defined as:

Code	Description of type of ID-system	Answers	
		Number	%
1	Mandatory permanent ID-system for all animals, unique lifetime ID	15	58
2	Mandatory permanent ID-system for herdbook animals, unique lifetime ID	8	31
3	Mandatory permanent ID-system for disease control, unique lifetime ID	2	8
4	Mandatory temporary ID-systems (movement tags)	1	4
5	Voluntary ID-systems for herdbook animals, unique lifetime ID	0	0

The table also shows the type of legislation covering the systems, defined as:

Code	Description of system	Answers	
		Number	%
1	Governmental mandatory ID-system at animal level, no official database	3	12
2	Governmental mandatory ID-system and database at animal level	14	54
3	Governmental mandatory ID-system at group level, no official database	3	12
4	Governmental mandatory ID-system at group level and database	4	15
5	No governmental requirements	2	8

Again the completed questionnaires predominantly came from EU countries and from those countries that joined the EU in 2004.

The situation for goats is very much the same as for sheep. The animals in 96% of the reported systems have unique lifetime IDs. Only one system was reported without, lifetime IDs and that is a system with temporary tags for moving the animals.

Systems with no databases (legislation code 1 or 3) are more frequent than in cattle.

Table 13. Type of ID systems used for goats and level of participation.

Reference number	Country	State/Province	World Region	Type of ID-System	Number of animals (1000)	Percentage	Legislation
77	Sudan		Africa	2			3
80	Sudan		Africa	3			4
83	Sudan		Africa	4			4
89	Tunisia		Africa	1	230	30	2
34	Austria		EU	2			1
35	Austria		EU	1			3
36	Belgium	Flanders	EU	2	4		2
37	Belgium	Wallone	EU	2	4	100	2
38	Belgium	Wallone, Sanitel	EU	1	200	90	4
99	Denmark		EU	1	19	100	2
41	France		EU	1	2,000	90	1
42	France		EU	2	310	35	2
44	Italy		EU	1	4,200	100	2
46	Portugal		EU	3			1
49	Spain		EU	1	3,114	100	3
50	Sweden		EU	1	5		4
51	Switzerland		EU	1	2,100		2
39	Czech Rep.		EU 2004	1			2
40	Estonia		EU 2004	1	1	50	2
43	Hungary		EU 2004	2	11	20	5
45	Latvia		EU 2004	1	4	95	2
47	Slovakia		EU 2004	1	3	6	2
48	Slovenia		EU 2004	2	3	10	2
92	Cyprus		EU 2004	1	1		2
94	Cyprus		EU 2004	1	3		2
74	Canada		North America	2			5

4.1. Tagging in goats

Table 14 shows the responses relating to on tagging of goats. Age when tagged is defined as:

Code	Description of age when tagged	Answers	
		Number	%
1	Within seven days from birth	11	46
2	Within 20 days from birth	3	13
3	Within 30 days from birth	1	4
4	Within 60 days from birth	2	8
5	Within 180 days from birth	3	13
6	Before leaving place of birth	3	13
7	Temporary tagging at each movement	1	4

In all situations defined by a number of days from birth, it is a prerequisite that animals are tagged before leaving the place of birth.

Applicater of tags is defined as:

Code	Description of who applies tags	Answers	
		Number	%
1	Farmer may apply official tags to the animal	15	60
2	Farmer may not apply official tags to the animal	0	0
3	Farmer applies preliminary tag – official person later applies official tag	4	16
4	Official person must apply all official tags (inspector, veterinarian etc.)	6	24

The age of goats when tagged varies quite considerably, and it is more usual for official persons / inspectors to apply the tags.

54% of the systems use only one plastic eartag. 27% use two plastic eartags. 92% of all systems use plastic eartags. However, in some countries one tag is made of plastic and the other tag is made of metal. In one system there is an option for the farmer to decide the material of the tags. Only one system does not require eartag.

In some systems, ear notching, horn branding, tattooing or sketch/photograph are used as supports to tagging.

In 77% of all systems a replacement tag must have the same ID-code as the lost tag. In two systems the replacement tag has a different number, which is connected to the old tag number through the database. In three systems, the replacement tags are not connected to the lost tag.

Table 14. Description of the type of tags used in different countries, when applied and who is responsible for applications.

Reference number	Country	Age	Application of tags	Number of tags	Plastic	Metal	Same material	Different material	Option, one	Option, all	Plastic tape	Ear notching	Horn Branding	Tattooing	Sketch/Photograph	Same ID at replacement	New connected ID at replacement	New not connected ID at replacement
77	Sudan	1	1	1	X				X			X				X		
80	Sudan	*	3										X	X	X	X		
83	Sudan	7	4	1	X								X	X	X	X		
89	Tunisia	1	4	2	X		X					X				X		
34	Austria	1	3	1 or 2	X	X				X						X		
35	Austria	6	1	1	X	X				X						X		
36	Belgium	5	1	1	X											X		
37	Belgium	1	1	1	X											X		
38	Belgium	5	1	1	X													X
99	Denmark	4	1	2	X		X									X		
41	France	1	1	1	X													X
42	France	1	1	2	X									O		X		
44	Italy	1	1	2	X		X							X		X		
46	Portugal	5	4	1	X													X
49	Spain	6	1	1	X											X		
50	Sweden	6	1	2	X	X		X								X		
51	Switzerland	2	1	2	X		X									X		
39	Czech Rep.	1	1	2	X	X		X								X		
40	Estonia	2	1	1	X											X		
43	Hungary	1	4	1	X									X		X		
45	Latvia	2	1	2	X		X					O		O		X		
47	Slovakia	4	3	1	X		X							O		X		
48	Slovenia	3	3	2	X									O			X	
92	Cyprus	1	4	1	X		X					X		X		X		
94	Cyprus	1	4	1	X		X										X	
74	Canada													X				
*	Vaccination																	

4.2. Visual ID-codes in goats

Information on visual ID-codes is shown in table 15.

In 85% of goat ID-systems, the visual goat ID-codes are numeric. However, a number of systems have alphanumeric (i.e. both numeric and alpha) characters.

In three systems the visual ID-code has more than 12 characters. 15% of the systems include a check digit in the visual ID-code.

In the majority of systems the visual ID-code contains information about region, farm or recording organisation. 23% of the systems have visual ID-codes with only serial numbers.

77% of the systems have unique ID-codes at national level, however, Sudan, Austria and Cyprus have systems that are only unique at the sub-national level.

Type of ID Codes	Answers	
	Number	%
Visual ID numeric	22	85
Visual ID alpha numeric	4	15
Check-digit in visual ID	Yes: 4	Yes: 15
	No: 8	No: 31
Visual ID purely serial	6	23
Visual ID identifies region	11	42
Visual ID identifies farm	10	39
Visual ID identifies organisation	3	12
Visual ID unique, country	20	77
Visual ID unique, farm	4	15
Visual ID unique, organisation	2	8

Table 15. Description of visual ID - codes used in different countries to identify goats.

Reference number	Country	State/Province	Visual ID numeric	Visual ID alpha	Visual ID both	Positions in visual ID	Check-digit in visual ID	Visual ID purely serial	Visual ID contains region	Visual ID contains farm	Visual ID contains organisation	Visual ID unique, country	Visual ID unique, region	Visual ID unique, farm	Visual ID unique, organisation
77	Sudan		X					X		X				X	
80	Sudan			X							X				X
83	Sudan				X		X		X			X			
89	Tunisia		X			10			X			X			
34	Austria		X			9	X		X			X			
35	Austria		X			7		X						X	
36	Belgium	Flanders	X			8			X	X		X			
37	Belgium	Wallone	X			8	NO			X		X			
38	Belgium	Wallone, Sanitel	X			8	NO		X			X			
99	Denmark		X			11	NO			X		X			
41	France		X			13	NO		X	X		X			
42	France		X		Tattoo	12	NO		X	X		X			
44	Italy		X			14	NO		X	X		X			
46	Portugal		X			8			X			X			
49	Spain				X	12				X					
50	Sweden		X			10						X			
51	Switzerland		X								X	X			
39	Czech Rep.		X			9	NO		X			X			
40	Estonia		X			10	X	X				X			
43	Hungary		X			10	X	X				X			
45	Latvia		X			14	NO			X		X			
47	Slovakia		X			9			X		X	X			
48	Slovenia		X									X			
92	Cyprus		X			4		X						X	
94	Cyprus		X			4		X						X	
74	Canada				X					X		X			X

4.3. Electronic identification systems in goats

The responses to the questionnaire about use of electronic identification for goats (Table 16) reflect the situation during 2003, when EU had not yet decided on its requirements for electronic identification (EID) systems. Some responses from EU-countries refer to trials in the IDEA programme and these are not really officially approved systems. EID has been officially approved in Denmark.

EU approved the ISO standards 11784 and 11785 at the end of 2003. According to ISO standard 11784, the code structure contains a three-digit country code / manufacturer's-code and a twelve-digit animal ID code, with a space between these codes. Furthermore, the code structure contains a one-digit code for identifying replacement tags.

For countries stating less than 12 digits in the animal ID code, free positions within the twelve-digit code are filled in with zeros in front of the animal ID code.

EID of goats includes eartags, attachments to eartags or boluses. No countries reported using EID implants.

Type of EID devices	Answers	
	Number	%
EID approved	Yes: 6 No: 11	Yes: 35 No: 65
EID in eartag	2	12
EID in attachment to eartag	2	12
EID in bolus	2	12
EID in implant	0	0

Table 16. Use of electronic identification systems for goats in different countries.

Reference number	Country	State/Province	EID approved	EID in eartag	EID in attachment to eartag	EID in bolus	EID in implant	Other?	EID same as visual ID	EID different from visual ID	Positions in EID	Check digit in EID	EID purely serial	EID contains region	EID contains farm	EID contains organisation
77	Sudan		X		X											
80	Sudan		X		X											
83	Sudan		X			X										
34	Austria		NO													
35	Austria		NO													
36	Belgium	Flanders	NO													
37	Belgium	Wallone	NO													
38	Belgium	Wallone, Sanitel	NO													
99	Denmark		X	X					X		11				X	
42	France		NO													
44	Italy		X	X		X										
49	Spain		NO													
50	Sweden		X													
39	Czech Rep.		NO													
40	Estonia		NO													
43	Hungary		NO													
45	Latvia		NO													

4.4. Movement recording, databases and governmental requirements in goats

The questionnaire intended to distinguish between recording of movements of groups of animals and recording movement of specific (identifiable) animals.

Recording of movement in its simplest form is that unspecified animals moved between specified holdings.

Recording of movements of specific animals is that specified animals moved between specified holdings.

Each row in table 17 represents one system only, so it was expected that systems where both animals and movements were in one database (column 6), there would have been no indications saying that movements were kept in an official database (column 4). The double answers may indicate, that there are in fact more than one database in the system (maybe a farmer owned and a government owned), and that the information in those two databases may not be exactly the same. Government databases need some information for traceability, whereas farmer owned databases need also information on production, classification etc. etc.

The picture is more diverse than for cattle. The reason for this is, that many goat systems register movements of groups of animals.

Six systems have no governmental requirements, four have requirements to register movements of groups of animals and eleven systems require recording movements of specific animals.

Summary of answers	Answers	
	Number	%
Movement in official database	5	19
Movement at sale yard or auction mart database	0	0
Animal and movement in official database	9	35
Herdbook animal in herdbook database	10	39
Manual farm registers	14	54
Governmental requirements on movements	4	15
Governmental requirements on animals and movements	11	42
No gov requirements	5	19

Table 17. Movement recording for goats and government requirements in different countries.

Reference number	Country	State/Province	Movement in official database	Movement at saleyard/auction mart	Animal and movement in official database	Herdbook animal in herdbook database	Manual farm registers	Gov require on movements	Gov require on animals and movements	No governmental requirements
77	Sudan					X				
80	Sudan				X				X	
83	Sudan		X				X		X	
89	Tunisia				X	X	X		X	
34	Austria					X	X			X
35	Austria						X			X
36	Belgium	Flanders	X			X			X	
37	Belgium	Wallone				X			X	
38	Belgium	Wallone, Sanitel						X		
99	Denmark				X		X		X	
41	France						X			
42	France					X	X			
44	Italy		X		X	X			X	
46	Portugal							X		
49	Spain						X	X		
50	Sweden						X		X	
51	Switzerland				X					
39	Czech Rep.		X							
40	Estonia				X		X		X	
43	Hungary									X
45	Latvia		X		X		X		X	
47	Slovakia				X	X	X			X
48	Slovenia					X				
92	Cyprus				X		X		X	
94	Cyprus						X	X		
74	Canada					X				X

4.5. Information for traceability in goats

Each row in table 18 represents a reported system. Table 18 shows the information that must be recorded in each system. Some systems are based on government requirements and other systems are herdbook systems. Usually in systems designed just for traceability of animals you do not have to report the sire of the animal, but in herdbook systems you, of course, must record this information.

Systems with no information other than the dates of movements and maybe previous and next farm are systems designed just to indicate lines of trade between herds. Such systems are not much used in cattle. However in sheep and goats they are quite often used.

Information recorded for each animal	Answers	
	Number	%
Place of origin	19	91
Date of birth	17	81
Breed	16	76
Sex	16	76
Mother	15	71
Father	13	62
Date of entry	19	91
Previous farm	17	81
Date of departure	19	91
Next farm	17	81
Other	3	14

Table 18. Information recorded in different countries to assist traceability of goats.

Reference number	Country	State/Province	Place of origin	Date of birth	Breed	Sex	Mother	Father	Date of entry	Previous farm	Date of departure	Next farm	Other
77	Sudan		X	X	X	X	X	X	X	X	X	X	
80	Sudan								X	X			
83	Sudan		X	X	X				X	X	X	X	
89	Tunisia		X	X	X	X	X	X	X	X	X	X	Veterinary information
34	Austria		X	X	X	X	X	X	X	X	X	X	
36	Belgium	Flanders	X	X	X	X	X	X	X	X	X	X	
37	Belgium	Wallone	X	X	X	X	X	X	X	X	X	X	
38	Belgium	Wallone, Sanitel	X	X		X			X	X	X	X	
99	Denmark		X	X	X	X	X	X	X	X	X	X	
44	Italy		X	X	X	X	X		X	X	X	X	
49	Spain								X	X	X	X	
50	Sweden		X	X					X	X	X	X	
51	Switzerland		X	X	X	X	X	X	X		X		Colour, Culling reason
39	Czech Rep.		X	X	X	X	X	X	X	X	X	X	
40	Estonia		X	X	X	X	X	X	X	X	X	X	
45	Latvia		X	X	X	X	X	X	X	X	X	X	
47	Slovakia		X	X	X	X	X	X	X	X	X	X	
48	Slovenia		X								X	X	Culling reason
92	Cyprus		X	X	X	X	X	X	X	X	X	X	
94	Cyprus		X		X	X	X		X		X		
74	Canada		X	X	X	X	X	X					

5. Systems for buffalo

Information on the type of system and the level of use of these systems for buffalo are given in table 19.

The table is grouped into World regions and shows type of ID-system, defined as:

1. Mandatory permanent ID-system for all animals, unique lifetime ID.
2. Mandatory permanent ID-system for herdbook animals, unique lifetime ID.
3. Mandatory permanent ID-system for disease control, unique lifetime ID.
4. Mandatory temporary ID-systems (movement tags).
5. Voluntary ID-systems for herdbook animals, unique lifetime ID.

The table also shows the type of legislation covering the systems, defined as:

1. Governmental mandatory ID-system at animal level, no official database.
2. Governmental mandatory ID-system and database at animal level.
3. Governmental mandatory ID-system at group level, no official database.
4. Governmental mandatory ID-system at group level and database.
5. No governmental requirements.

Again the completed questionnaires predominantly came from EU countries and from those countries joined the EU in 2004.

The systems are much like the systems cattle.

Table 19. Type of ID systems used for buffalo and level of participation.

Reference number	Country	State/Province	World Region	Type of ID-System	Number of animals	Percentage	Legislation
1	Austria		EU	1	2,100	100	2
2	Belgium	Flanders, Sanitel	EU	1	3,000	100	2
3	Belgium	Wallone, Sanitel	EU	1	3,000	100	2
4	Belgium	Wallone	EU	1	3,430	100	2
6	Italy		EU	1	4,200	100	2
7	Spain		EU	1	7,742	100	2
5	Hungary		EU 2004	1	855	100	2

5.1. Tagging in buffalo

Table 20 shows the responses relating to tagging of buffaloes.

Age when tagged is defined as:

1. Within seven days from birth
2. Within 20 days from birth
3. Within 30 days from birth
4. Within 60 days from birth
5. Within 180 days from birth
6. Before leaving place of birth
7. Temporary tagging at each movement

In all situations defined by a number of days from birth, it is a prerequisite that animals are tagged before leaving the place of birth.

Applicator of tags is defined as:

1. Farmer may apply official tags to the animal
2. Farmer may not apply official tags to the animal
3. Farmer applies preliminary tag – official person later applies official tag
4. Official person must apply all official tags (inspector, veterinarian etc.)

Again the systems are much like the systems for cattle.

Table 20. Description of the type of tags used in different countries, when applied to buffalo and who is responsible for application.

Reference number	Country	Age	Application of tags	Number of tags	Plastic	Metal	Same material	Different material	Option, one	Option, all	Plastic tape	Ear notching	Horn Branding	Tattooing	Sketch/Photograph	Same ID at replacement	New connected ID at replacement	New not connected ID at replacement
1	Austria	1	1	2	X		X									X		
2	Belgium	1	1	2	X		X									X		
3	Belgium	1	1	2	X		X									X		
4	Belgium	1	1	2	X		X									X		
6	Italy	1	1	2	X		X									X		
7	Spain	2	1	2	X		X									X		
5	Hungary	2	4	2	X		X									X		

5.2. Visual ID-codes in buffalo

Information on visual ID-codes in buffalo is shown in table 21. Visual buffalo ID-codes are all numeric in the reported systems. In one system the visual ID-code has more than 12 characters. Most systems include a check digit in the visual ID-code. In most systems the visual ID-code contains information about region, farm or recording organisation. Only in two reported systems is the visual ID-code just a serial number. All ID-codes are unique at national level.

Table 21. Description of visual ID-codes used in different countries to identify buffalo.

Reference number	Country	State/Province	Visual ID numeric	Visual ID alpha	Visual ID both	Positions in visual ID	Check-digit in visual ID	Visual ID purely serial	Visual ID contains region	Visual ID contains farm	Visual ID contains organisation	Visual ID unique, country	Visual ID unique, region	Visual ID unique, farm	Visual ID unique, organisation
1	Austria		X			9	X	X				X			
2	Belgium	Flanders, Sanitel	X			9	X		X			X			
3	Belgium	Wallone, Sanitel	X			9	X		X			X			
4	Belgium	Wallone	X			9	X		X			X			
6	Italy		X			14	NO		X			X			
7	Spain		X			12	X		X			X			
5	Hungary		X			10	X	X				X			

The limited data provided regarding electronic identification of buffaloes is included in Table 22.

5.3. Electronic identification systems in buffalo

Table 22. Use of electronic identification systems for buffalo in different countries.

Reference number	Country	State/Province	EID approved	EID in eartag	EID in attachment to eartag	EID in bolus	EID in implant	EID same as visual ID	EID different from visual ID	Positions in EID	Check digit in EID	EID purely serial	EID contains region	EID contains farm	EID contains organisation
1	Austria		NO												
2	Belgium	Flanders, Sanitel	NO												
3	Belgium	Wallone, Sanitel	NO												
4	Belgium	Wallone	NO												
6	Italy		X	X		X									
7	Spain		NO												
5	Hungary														

5.4. Movement recording, Databases and governmental requirements in buffalo

The questionnaire intended to distinguish between recording of movements of groups of animals and recording movement of specific (identifiable) animals.

Recording of movement in its simplest form is that unspecified animals moved between specified holdings.

Recording of movement of specific animals is that specified animals moved between specified holdings.

Each row in table 23 represents one system only, so it was expected that systems where both animals and movements were in one database (column 6), there would have been no indications saying that movements were kept in an official database (column 4). The double answers may indicate, that there are in fact more than one database in the system (maybe a farmer owned and a government owned), and that the information in those two databases may not be exactly the same. Government databases need some information for traceability, whereas farmer owned databases need also information on about production, classification etc. etc.

All systems have to fulfil government requirements on information on both animals and movements.

Table 23. Movement recording for buffalo and government requirements in different countries.

Reference number	Country	State/Province	Movement in official database	Movement at saleyard/auction mart	Animal and movement in official database	Herdbook animal in herdbook database	Manual farm registers	Gov require on movements	Gov require on animals and movements	No gov requirements
1	Austria		X		X	X	X		X	
2	Belgium	Flanders, Sanitel		X	X		X		X	
3	Belgium	Wallone, Sanitel		X	X		X		X	
4	Belgium	Wallone				X			X	
6	Italy		X		X	X			X	
7	Spain		X		X				X	
5	Hungary		X		X				X	

5.5. Information for traceability in buffalo

Each row in table 24 represents a reported system. Table 24 shows the information that must be recorded in each system. Some systems are based on government requirements and other systems are herdbook systems. Usually in systems designed just for traceability of animals you do not have to report the sire of the animal, but in herdbook systems you, of course, must record this information.

Systems with no information other than the dates of movements and maybe previous and next farm are systems designed just to indicate lines of trade between herds.

Table 24. Information recorded in different countries to assist traceability of buffalo.

Reference number	Country	State/Province	Place of origin	Date of birth	Breed	Sex	Mother	Father	Date of entry	Previous farm	Date of departure	Next farm	Other3
1	Austria		X	X	X	X	X	X	X	X	X	X	
2	Belgium	Flanders, Sanitel	X	X		X	X		X	X	X		
3	Belgium	Wallone, Sanitel	X	X		X	X		X	X	X		
4	Belgium	Wallone	X	X	X	X	X	X	X	X	X	X	
6	Italy		X	X	X	X	X		X	X	X	X	
7	Spain		X	X	X	X	X		X	X	X	X	
5	Hungary		X	X	X	X	X		X		X	X	Culling reason

**Form of the
questionnaire**

Country:**State/Province:****Organisation:****Contact person:****Phone:****Fax:****E-mail:****Species**

Cattle
Sheep
Goat
Buffalo

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Type of Identification system**(One answer only)**

Mandatory permanent ID-system for all animals, unequivocal lifetime ID

Mandatory permanent ID-system for herdbook animals, unequivocal lifetime ID

Mandatory permanent ID-system for disease control programme, unequivocal lifetime ID

Mandatory temporary ID-systems (movement tags)

Voluntary ID-systems for herdbook animals, unequivocal lifetime ID

Voluntary ID-systems for herdbook animals, ID code may change by movement

Voluntary ID-systems for management purposes, unequivocal lifetime ID

Voluntary ID-systems for management purposes, ID code may change by movement

Approximate number of animals in this identification system:
Identified animals of potential animals for the is identification system
(percentage):

Legislation

(One answer only)

Governmental mandatory ID-system at animal level (individual codes), no official database

Governmental mandatory ID-system and database at animal level

Governmental mandatory ID-system at group level (farm/herd codes), no official database

Governmental mandatory ID-system at group level and database

No governmental requirements

Age of animal when tagged

(One answer only)

Within 7 days from birth

Within 20 days from birth

Within 30 days from birth

Within 60 days from birth

Within 180 days from birth

Before leaving the place of birth

Temporary tagging at each movement

Other, please specify

Application of tags

(One answer only)

Farmer may apply official tags to the animal

Farmer may not apply official tags to the animal

Farmer applies preliminary tag – official person later applies official tag

Official person must apply all official tags (inspector, veterinarian etc.)

Types of conventional non-electronic tags
(More than one answer required for eartags)

- Number of eartags applied per animal
- Plastic eartag
- Metal eartag

In case of two or more eartags applied per animal:

- All eartags must of same material (plastic or metal)
- Eartags must be of different materials (plastic and metal)
- Material optional for one of the eartags
- Material optional for all of the eartags
- Pre-printed plastic tape
- Ear notching
- Horn branding
- Tattooing
- Sketching / Photograph
- Other, please specify

Types of electronic tags
(More than one answer possible)

- Is electronic identification approved in the identification system
- Electronic devices used:
- Electronic ID in eartag (moulded into male or female part the eartag)
- Electronic ID in attachment to eartag (device not moulded into the eartag)
- Electronic ID in bolus
- Electronic ID in implants
- Other, please specify

Visual Animal ID code (Country code NOT included)

(More than one answer required)

Visual ID-code is purely numeric

Visual ID-code is purely alphanumeric

Visual ID-code contains both numeric and alphanumeric characters

Number of positions in the visual ID-code (possible check digit included)

Check digit included in the visual ID code

Visual ID-code is just a serial number (possible check digit included) without further information

Visual ID-code contains information about region

Visual ID-code contains information about farm

Visual ID-code contains information about recording organisation

Visual ID-code is unique at country level

Visual ID-code is unique at region level

Visual ID-code is unique at farm level

Visual ID-code is unique at recording organisation level

Electronic Animal ID code structure (Country code NOT included)

(More than one answer required)

The electronic ID code is the same as the visual animal ID code

The electronic ID code is different from the visual animal ID code

Number of positions in the electronic ID-code (possible check digit included)

Check digit included in the electronic ID code

Electronic ID-code is just a serial number (possible check digit included) without further information

Electronic ID-code contains information about region

Electronic ID-code contains information about farm

Electronic ID-code contains information about recording organisation

Replacement tag
(One answer only)

- Same ID-code as in the lost original tag
- New ID-code connected to the lost original tag
- New ID-code with no connection to the lost original tag

Traceability
(More than one answer possible)

- Information on movements for all animals is kept in official databases (check also option nr. 3!!)
- Information on movements is kept in saleyards/auction marts databases
- Information on animals and movements for all animals is kept in official databases
- Information on herdbook animals is kept in herdbook databases
- Information on animals and movements is kept in manual farm registers
- Governmental bodies require registration of movements only
- Governmental bodies require registration of animals and movements
- Governmental bodies do not require registration of animals and movements

Information required by recording agency from the farmer for traceability of animals
(More than one answer required)

- Code for place of origin
- Date of birth
- Breed
- Sex
- Mother
- Father
- For incoming animal: Date of movement to farm
- For incoming animal: Code of previous farm
- For outgoing animal: Date of movement from farm
- For outgoing animal: Code of next farm
- Other information (please specify)
- No information required from farmer

Country, Region	Organisation and contact person	Reference numbers
Argentina 1	Asociación Criadores de Holando Argentino Sra. Liliana Chazo Phone: 54-11-4805-7323 Fax: 54-11-4805-7323 E-mail: info@acha.org.ar	8
Australia, Victoria 2	ADHIS Robert Poole Phone: +61 3 96428066 Fax: +61 3 96428166 E-mail: rpoole@adhis.com.au	9
Austria 3	Federation of Austrian Cattle Breeders Dr. Ernst Potucek Phone: +43 1 334 17 21 Fax: +43 1 334 17 13 E-mail: potucek@zar.at	1, 10, 52
Austria 3	Österr. Bundesverband für Schafe und Ziegen Mag. Margit Schmidt Phone: +43 1 333 87 98 22 Fax: +43 1 333 87 98 25 E-mail: oebisz@aon.at	34, 35, 53
Belgium, Wallone 4	Ministère de la Région Wallone Ir J.F. DUCKERTS Phone: +32.81.234.913 Fax: +32.81.234.813 E-mail: jf.duckerts@mrw.wallonie.be	4, 14, 37, 57
Belgium, Wallone 4	SANITEL (CDV-ACSA) Dir. Dr. J.M. ROBIJNS Phone: +32 2 208 41 65 Fax: +32 2 208 41 51 E-mail: jean-marie.robijns@cdv-acsa.be	3, 12, 38, 58
Belgium, Flanders 4	SANITEL (CDV-ACSA) Dir. Dr. J.M. ROBIJNS Phone: +32 2 208 41 65 Fax: +32 2 208 41 51 E-mail: jean-marie.robijns@cdv-acsa.be	2, 11, 54
Belgium, Flanders 4	Ministerie van de Vlaamse Gemeenschap Ir. Stan Van den Maegdenbergh Phone: 02/208 35 72 Fax: 02/208 35 65 E-mail: stan.van.den.maegdenbergh@cmlag.fgov.be	13, 55
Belgium, Flanders 4	Nationale Verbond van Geiten- en Melkschapenfokkers vzw Dhr. W. Van der AA Phone: +32.11.25.52.81 Fax: +32.11.25.52.81	36

Organisations answering the questionnaire

Country, Region	Organisation and contact person	Reference numbers
Belgium, Flanders 4	Nationale Vereniging van Kwekers van Vleeschapen vzw Dhr. I. Lootvoet Phone: +32.58.28. 98.20 Fax: +32.58.28.98.21 E-mail: i.lootvoet@skynet.be	56
Canada 5	Canadian Goat Society Sharon Hunt Phone: 613-731-9894 Fax: 613-731-0704 E-mail: cangoatsoc@travel-net.com	74
Canada 5	Canadian DHI Barry Russell Phone: 506-857-9131 Fax: 506-855-0456 E-mail: brussell@adlic.ca	84, 85
Croatia 6	Croatian Livestock Selection Centre B.Sc. Ante Pezo Phone: ++385/1/3903-154 Fax: ++385/1/3903-192 E-mail: hssc@zg.hinet.hr	15
Cyprus 7	Agricultural Research Institute Andreas P. Mavrogenis and C. Constantinou Phone: +357-22403121 Fax: +357-22316770 E-mail: mavrogen@arinet.ari.gov.cy	91, 93,95
Cyprus 7	Department of Agriculture Takis Antoniou, PhD Phone: +357-22408639	92, 94, 96
Czech Republic 8	Czech-Moravian Breeder's Corporation Vaclav Cermak Phone: +420 257 740 337 Fax: +420 257 740 617 E-mail: cermak@cmsch.cz	16, 39, 59
Denmark 9	Danish Cattle Federation Ole Klejs Hansen Phone: +45-87405295 Fax: +45-87405089 E-mail: okh@landscentret.dk	97, 98, 99
Estonia 10	Estonian Animal Recording Centre Aire Pentjärv Phone: +372 7 387 700 Fax: + 372 7 387 702 E-mail: aire.pentjarv@reg.agri.ee	17, 40, 60
Finland 11	ProAgria Maaseutukeskusten Liitto (Association of Rural Advisory Centres) Mr Juho Kyntäjä Phone: +358 40 517 6972 Fax: +358 9 4174 0400 E-mail: juho.kyntaja@maaseutukeskus.fi	18

Country, Region	Organisation and contact person	Reference numbers
France 12	Institut de l'Elevage Hervé LEDOS Phone: 33 (0)2 99 14 86 26 Fax:33 (0)2 99 14 87 55 E-mail: herve.ledos@inst-elevage.asso.fr	19
France 12	Institut de l'Elevage Jacques HOLTZ Phone: 33 (0)5 61 75 44 50 Fax: 33 (0)5 61 73 85 91 E-mail: jacques.holtz@inst-elevage.asso.fr	41, 61
France 12	Institut de l'Elevage Jean-Paul SIGWALD Phone: 33 (0)1 40 04 53 19 Fax : 33 (0)1 40 04 49 50 E-mail: eric.jullien@inst-elevage.asso.fr	42
France 12	Institut de l'Elevage Eric JULLIEN (meat sheep) Phone: 33 (0)1 40 04 53 29 Fax : 33 (0)1 40 04 49 50 E-mail: eric.jullien@inst-elevage.asso.fr Jean-Michel ASTRUC (dairy sheep) Phone: 33 (0)5 61 28 51 65 Fax: 33 (05) 61 73 85 91 E-mail: jean-michel.astruc@inst-elevage.asso.fr	62
Germany 13	German Cattle Breeders Federation Dr. Reinhard Pauw, Klaus Ditting Phone: 0049-228-91447-27 Fax: 0049-228-91447-11 E-mail: Klaus.ditting@adt.de	100
Germany 13	German Sheep Breeders federation Dr. Stefan Völl Phone: 1149-228-375351 Fax: 0049-228-376449 E-mail: s.voell@bauernverband.de	73
Hungary 14	National Institute for Agricultural Quality Control Dr. Sebestyén, Sándor Phone: +36-1-212-31-27/2219 Fax:+36-1-212-55-02 E-mail: sebestyens@ommi.hu	5, 20, 43, 63
Ireland 15	Irish Cattle Breeding Federation Soc. Ltd Brian Wickham Phone: +353-23-20212 Fax: +353-23-20229 E-mail: bwickham@icbf.com	26
Israel 16	ICBA Boaz Hanochi Phone: 972-4-6279743 Fax: 972-4-6273501 E-mail: hmb-hboaz@icba.org.il	72

Country, Region	Organisation and contact person	Reference numbers
Italy 17	Associazione Italiana Allevatori (A.I.A.) Dr. Mauro Fioretti – Dr. Corrado Bracciaferri Phone: +39-0685451-307 or -301 Fax: +390685451322 E-mail: fioretti.m@aia.it or bracciaferri.c@aia.it	6, 21, 44, 64
Latvia 18	State Pedigree Information Data Processing Centre Erna Galvanovska Phone: +371 7027241 Fax: +371 7027006 E-mail:erna.galvanovska@vcidac.lv	22, 45, 65
Mexico 19	Holstein de México A.C. Dr. Felipe Ruiz López Phone: +52 442 212 02 69 Fax: +52 442 224 39 33 E-mail: holstein@prodigy.net.mx	23
New Zealand 20	Livestock Improvement Corporation LTD. Ian Hook Phone: 0064 7 856 0700 Fax: 0064 7 856 0625 E-mail: ihook@lic.co.nz	24
Portugal 21	Direcção Geral de Veterinária Mário Costa Phone: 217808206 Fax: 217956066 E-mail:bioucas@hotmail.com	25, 46, 66
Slovakia 22	The State Breeding Institute of the Slovak Republic Dipl. Ing. Štefan Ryba Phone: +421-2- 62240974 Fax: +421-2- 62319782 E-mail: stefanryba@spusr.sk	27
Slovakia 22	The State Breeding Institute of the Slovak Republic Mária Štefanková, Dipl. Ing. Marcel Matta Phone: +421-2-62319793 Fax: +421-2-62319782 E-mail: marcelmatta@spusr.sk	47, 67
Slovenia 23	Biotechnical faculty, Department of Animal Science Klemen Potočnik Phone: +386 1 7217 872 Fax: +386 1 7241 005 E-mail: Klemen.Potocnik@bfro.uni-lj.si	28
Slovenia 23	Biotechnical faculty, Zootechnical Department Dr. DRAGO KOMPAN Phone: +386/1/721/78/00 Fax: +386/1/724/10/05 E-mail: drago.kompan@bfro.uni-lj.si	48, 68

Country, Region	Organisation and contact person	Reference numbers
Spain 24	Ministerio de Agricultura, Pesca y Alimentación D ^a María Josefa Lueso Sordo Phone: 00 34 91 347 69 19 Fax: 00 34 91 347 69 69 E-mail: jluesoso@mapya.es	7, 29, 49, 69
Sudan 25	Ministry of Animal Resources And Fisheries Dr. Mohamed Sir Elkhatim A/Allateif Phone: 024911465847 Fax: 024911475996 E-mail: kitoum1@hotmail.com	75, 76, 77, 78, 79, 80, 81, 82,83
Sweden 26	Swedish Board of Agriculture Eva-Marie Stålhammar Phone: +46 36 15 58 22 Fax: +46 36 30 81 82	30, 50, 70
Switzerland 27	Arbeitsgemeinschaft Schweizerischer Rinderzüchter Hans Künzi Phone: 41 31 381 42 01 Fax: +41 31 382 08 80 E-mail: asr-bern@bluewin.ch	31, 51, 71
The Netherlands 28	NRS ing. Ite Hamming Phone: 00 31 26 3898784	32
Tunisia 29	Office de l'Élevage et des Pâturages Mustapha Guellouz Phone: +216-71-782960 Fax: +216-71-793603 E-mail: dg.oep@email.ati.tn	87, 88, 89
Turkey 30	Cattle Breeders Association of Turkey Cagla Yüksel Kaya Phone: +90-312-4256880 Fax: +90-312-4187685 E-mail: dsymb@dsymb.org.tr	86
UK, Northern Ireland 31	United Dairy Farmers Ltd Brian Hunter Phone: 028 9037 2237 Fax: 028 9037 2222 E-mail: bhunter@utdni.co.uk	33
UK, Jersey 31	Department of Agriculture and Fisheries Alan Treanor Phone: 01534-866200 Fax: 01534-866201 E-mail: alant@nmr.co.uk	90