



THE GLOBAL STANDARD  
FOR LIVESTOCK DATA

# Section 14 - Guidelines for Alpaca and Cashmere Goat Identification and Fibre

Section 14 – Alpaca and Goat Identification and Fibre  
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**Network. Guidelines. Certification.**

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## Change Summary

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<b>Date of Change</b>	<b>Nature of Change</b>
August 17	Reformatted using new template.
August 17	Table of contents added.
August 17	Heading numbers and heading text edited for clarity and removal of redundant text.
August 17	Tables numbered.
August 17	Figure 1 page 15 has been reduced.
August 17	Stopped Track change sand accepted all previous changes.
August 17	Moved the file to the new template (v2017_08_29).
Oct. 2017	Hyperlinks have been corrected

## 1 Alpaca Identification

### 1.1 Identification

The recorded alpaca identity must be the animal's official identity in the member country and must be unique to that animal.

Where the identity of an individual animal is not unique, the record must so state (e.g. flock identities for goats/sheep). The identity number used for a flock or herd must be unique for that flock or herd.

The alpaca's identity must be visible.

The alpaca's identity should be unique and never be re-used.

The alpaca's identification device/ method, must comply with legislative requirements.

Alpacas, which lose their identity device must be re-identified and, wherever possible, with their original number, provided that there is evidence that the alpaca is being correctly identified (where this is not possible, a cross reference to the original number must be maintained).

### 1.2 Method of Identification

- a. The alpacas identity number may be attached to the alpaca by a tag, tattoo, sketch, photo, brand or electronic device.
- b. Alpacas moving from one member country to another should, wherever possible, continue to be identified using their original identity number and name.
- c. In the case of imported alpacas, where the number has to be changed, the official records should also show the original number and name. The original number and name must be reported in Export Certificates, AI Catalogues and in catalogues of important shows and sales.
- d. Where an alpaca is identified using an implanted 'electronic device, the alpaca must be marked in a way which indicates the presence of an "electronic identification" device.

### 1.3 Member Role

- a. The member organisation must maintain a record of the approved identification methods used in the member country.
- b. The member organisation must determine, within the constraints of the member country legislation, the identification methods to be used on recorded alpacas and herds or flocks.

### 1.4 Identification Standard

- a. The alpaca identity number will be a maximum of 12 digits (including check digits where used) and the three digit numeric code representing the name of the country in accordance with ISO 3166 shall be added to identify the country of origin. Three digit numeric ISO codes must be used for data transfer and storage. In printed documents the ISO alpha country code should be used.
- b. For electronic identification standards see Appendices in this publication.

## 2 Alpaca Fibre

### 2.1 Harvesting

According to the auto certification methodology yet applied in other advanced fibre animal breeding systems, alpaca fleece collection critical points have been identified in shearing fleece management, fibre harvesting and classification where with easy procedures, a suitable product for the next processing step can be obtained. Through the present procedure, the possible defects that may be found in the end product can be easily individuated and corrected localizing the error of management in the previous step of the alpaca fibre processing chain. (Or because it is possible to locate exactly where the defect has been done).

The principal critical point of the present action are organized in 6 distinct steps:

- a. Alpaca clip preparation standard
- b. Structural needs.
- c. Preparation of the proper shearing.
- d. Proper shearing.
- e. Grading and classing.
- f. Packaging and transport.

The characteristics that done good alpaca fibre products qualities for the textile industry, strictly joint to the shearing management, fleece harvesting and fibre grading and classification, are:

- a. The finesse (expressed in fibre average diameter -mm).
- b. The finesse homogeneity (expressed in average diameter Coefficient of Variation - C.V. %).
- c. The length (expressed in millimeters - mm).
- d. The length homogeneity (expressed in hauteur Coefficient of Variation - CVH).
- e. The presence of medullated fibre (expressed in percentage %).
- f. The presence of impurities (expressed in greasy yields and percentage of vegetable matter presence - %).
- g. The colour.

For the fleece harvesting the follow structures and equipment are utilized:

- a. Rest area before the shearing.
- b. Shearing area.
- c. Clip in the strict sense of the word.
- d. Grading areas.
- e. Proper grading equipment.
- f. Packaging and baling area.

The final goal of a correct management of the different steps of the fibre/fleece shearing, harvesting and grading are:

- a. The manufacturers can benefit of raw material easily and with confidence.

- b. Maximizing the financial return (profit).

## 2.2 Harvesting Guidelines

Guidelines are the behaviors required during the shearing period and the organization of the different structure within the different working areas.

### 2.2.1 Step 1: Alpaca clip preparation

Before the alpaca enter in the clip areas the follow cautions have to be taken into account:

- a. Keep the alpaca in rest paddock near to the clip area.
- b. Keep the alpaca dry.
- c. Divide the alpaca in different groups according to the color, age and sex, in order to shear first the white alpaca, more young and with the finesses fibers. This is the way to obtain the more homogeneous lots for color and quality (finesse).

The choice of the shearing period is the one of the more difficult period in the alpaca fibre production life. The shearing seasonal period will have chose according to follow different aspects:

- a. Environmental conditions - the alpaca clip in cold and windy period will oblige the alpaca management and feeding inside with dry and concentrate food for 10 days at least.
- b. Reproduction activities - the alpaca clip after the delivery or during the breeding season increase the fleece stain and reduce fleece and fibre yield.
- c. Pasture vegetative phase - alpaca will have to be clipped before the pasture will produce the seeds, because they are the main reasons of the fleece contamination and depreciation. The vegetable matter, especially seeds, is impossible to remove during the different steps of textile process.

### 2.2.2 Step 2: Structural needs

#### **The pens**

In order to reduce the extraneous materials in the fleece, all the farm pens where the alpaca live have to be free by:

- a. Bales, ropes, twines and strings for the hay packaging.
- b. Wastes.
- c. Equipments useless as old beams or old machineries.
- d. Wires, barbed wires, old sandpapers, screws, nails, bolts and chains.
- e. Cigarettes end.

The presence of these materials produces no end of troubles for the textile industry, since a strong economic devaluation of the end products and sometime the breaking of the textile processing machineries.

#### **The clip shed area**

A shed should be utilized only for the alpaca clip. In the present structure all the shearing activities will be carried out and the area will have to be divided physically in three distinct areas:

- a. **Alpaca handling area.** Where the alpaca rest before to be bring in the clip area. Present sector have to be totally separate from the other two areas. It is necessary: to prevent draught and rain, to cover the floor with elevated wooden floorboard and to provide suitable ventilation.
- b. **Clip area.** Where the alpaca undergo the shearing  
Also the clip area has to be completely divided by the other two areas and to be covered by wooden floorboard. Every time the different alpaca shearing group, divided for finesse and color changes a carefully cleaning have to be done. Finally all the device necessary to immobilize the alpaca have to be done of no contaminant materials (i.e. cotton), in order to avoid especially synthetics fibers contamination.
- c. **Fleece Grading Area.** Where the single whole fleece are separated and graded in different finesse categories.  
An appropriate artificial or natural light have to be foreseen in the fleece grading areas; the grading table has to be single separated wood board made in order to favor the impurities falling-out. For each fibre categories have to be available clean or new sacks.

Inside the shed area the follow main hygienic rules have to be observed:

- a. Before the shearing , removing all the rubbishes and washing carefully the shed area when is empty.
- b. Providing at the shearing staff all the equipments to clean the shoes (scrapers, tanks with cleansing and / or disinfectant liquid).
- c. No smoking inside the clip area.
- d. No eat food.
- e. Forbidden all the alpaca paws grooming and especially the cutting nails.

### 2.2.3 Step 3: Clip preparation

Before to begin the real alpaca clip, all the hygienic rules above described have to be respected. All the alpaca must to go without food for at least 4 hours and they will present at the shearing according to pre - determinate categories (age, sex, color etc.)

Finally the bags, where the shearing and grading fleeces will be collected, will have to be checked inside in order to avoid the presence of rubbish and contaminant materials.

### 2.2.4 Step 4: Clip in the strict sense of the word

The alpaca clip method will have to perform according to the uses and methods of the local available shearers. Whatever will be the methods, the shearers will have:

- a. To be careful to separate before the less valuable fleeces fractions (feet and belly parts).
- b. To obtain the fleece intact as much as possible, in order to make easier the next fleece grading.
- c. To avoid absolutely the double cut during the shearing, the consequence is a great average length variation of the fleece fibre that produces a heavy depreciation of the products.

After shearing, alpaca shepherd have to be careful to avoid the direct exposure of the animal at sunbeams or at currents of air in order to prevent sunburn and catching cold.

### 2.2.5 Step 5: Grading and classification

The principal grading aim is to offer fibre product in such way as the textile factories, before to start the process, have not to make further selection and cleaning procedure. The results are the elimination of adding costs and a better quality of the end product.

The main cares to carry out in the present step are:

- a. The fleeces have not to be rested in the floor
- b. As sheared, the fleeces have to be put soon in the grading tables,
- c. Grading table has to be cleaned after the grading of each fleece.

The fleeces obtained are classified for:

- a. Finesse
- b. Colour
- c. Length
- d. Presence of medullated fibre or kemp
- e. For the dirty fibers are foreseen special category- (Stained).

Each fibre category has to be identified by suitable codes which have to be affixed on packaging.

*Table 1. Alpaca fibre classification codes.*

<b>Alpaca fibre classification proposal</b>		
<b>Finesse Category</b>		
Under 20 microns	< 20 µm	(SP)
Between 20 and 25 microns	>20 µm and < 25 µm	(F)
Between 25 and 30 microns	>25 µm and < 30 µm	(M)
Over 30 microns	>30 µm	(S)
Stained		(STD)
<b>Color</b>		
White	W	
Light brown	FN	
Brown	B	
Dark brown	DB	
Black	BLk	
Light and dark gray	G	
Pink gray	RG	
Spotting brown	MTB	
Spotting black	MTBLK	
<b>Length</b>		
> 85 mm < 160 mm	A.A.A.	
> 40 mm < 85 mm	A.A.	
< 40 mm	A.	
> 160 mm	O.G.	

### Medullation

Very heavy medullated fibre should be separated from the finesse category and included in the category (S).



### 2.2.6 Step 6: Raw material packaging and labelling

There are different packaging methods. In any case any methods will be utilize, the bags have not to be stained and their self have not to be reason of contamination (i.e. plastic bags).

Generally strong envelops are preferred, where the fleeces can be well pressed and easy to store.

In any case each bag must to have an individual label in which is described two kind of information, one referred to the farms:

- a. Animal code number.
- b. Farm name.
- c. Farm address.
- d. Telephone number.

and another one referred at the fibre:

- a. Finesse category (code)
- b. Color (code)
- c. Length (code)
- d. Shearing year
- e. The fibers average diameter when laboratory analyses have been carried out

<p><b>Farm data</b></p> <p>Animal code N. ....</p> <p>Farm Name .....</p> <p>Farm address .....</p> <p>Telephone N. .... / .....</p> <p><b>Fibre data</b></p> <p>Finesse Category .....</p> <p>Colour .....</p> <p>Length .....</p> <p>Shearing year .....</p>
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## 3 Cashmere Goat Identification

### 3.1 General identification rules

- a. The recorded cashmere goat identity must be the animal's official identity in the member country and must be unique to that animal.

- b. Where the identity of an individual animal is not unique, the record must so state. The identity number used for a flock or herd must be unique for that flock or herd.
- c. The cashmere goat's identity must be visible.
- d. The cashmere goat's identity should be unique and never be re-used.
- e. The cashmere goat's identification device/method must comply with legislative requirements.
- f. Cashmere goats that lose their identity device must be re-identified and, wherever possible, with their original number, provided that there is evidence that the cashmere goat is being correctly identified (where this is not possible, a cross reference to the original number must be maintained).

### 3.2 Methods of identification

The cashmere goat's identity number may be attached to the animal by a tag, tattoo, sketch, photo, brand or electronic device.

- a. Cashmere goats moving from one member country to another should continue to be identified using their original identity number and name wherever possible.
- b. In the case of imported cashmere goats, where the number has to be changed, the official records should also show the original number and name. The original number and name must be reported in export certificates, AI catalogs and in catalogs of important shows and sales.
- c. Where a cashmere goat is identified using an implanted electronic device, the animal must be marked in a way that indicates the presence of an electronic identification device.

### 3.3 Record of identification methods

- a. The member organisation must maintain a record of the approved identification methods used in the member country.
- b. The member organisation must determine, within the constraints of the member country legislation, the identification methods to be used on recorded cashmere goats and herds or flocks.

### 3.4 Standard for cashmere identities

- a. The cashmere goat's identity number will be a maximum of 12 digits (including check digits, where used) and the three-digit numeric code representing the name of the country, in accordance with ISO 3166, shall be added to identify the country of origin. Three-digit numeric ISO codes must be used for data transfer and storage. In printed documents, the ISO alpha country code should be used.
- b. For electronic identification standards, see Appendices in this publication.

## 4 Cashmere Goat Fibre

### 4.1 Cashmere Definition

According to the CCMI (Cashmere and Camel Hair Manufacturers Institute), cashmere is defined as:

- c. The fine (dehaired) undercoat fibres produced by a cashmere goat (*Capra hircus laniger*).
- d. The fibre is generally non-medullated and has a mean maximum diameter of 19 microns. The co-efficient of variation around the mean shall not exceed 24%. There can be no more than 3% (by weight) of cashmere fibres over 30 microns. (Reference IWTO Test Method 8).

Cashmere Fleece Collection Critical Control Points (CFCCCP) have been identified according to the auto-certification methodology currently applied in other advanced fibre animal breeding systems. The application of CFCCCP utilising simple procedures in animal husbandry, fleece combing management, fibre harvesting and classification, provides conditions to optimise quality of product for the next step in the processing chain. It will also allow the identification of sources of defects, which are detected in end products and localise the individual system failures and errors in management occurring in previous steps of the chain.

Because cashmere production derives from a double fleece structure and the cashmere fibre is represented by the undercoat, it should be noted that cashmere harvesting can be carried out using two different methods: the shearing method and the combing method. In the current guidelines, the combing method is referenced because it is the most widely used method in the main producing areas of China and Mongolia.

#### 4.2 Critical control points

The principal critical control points are organised in six distinct steps:

- a. Standardising of cashmere harvesting preparation.
- b. Structural needs.
- c. Preparation for harvesting.
- d. Harvesting process.
- e. Grading and classifying.
- f. Packaging and transport.

In order to define the quality of cashmere fibre products for the textile industry, the parameters and their methods of measurement are:

- a. Fineness (fibre average diameter - mm)
- b. Homogeneity (fibre diameter coefficient of variation - C.V. %)
- c. Staple length (fibre average length - mm)
- d. Medullation (percentage %) or comfot factor
- e. Dark fibre in white fleece and white fibre in coloured fleece contaminations (number of dark-white fibres/10g)
- f. Impurities (greasy yields and percentage content of vegetable matter - %)
- g. Colour.

In order to maximise a cashmere harvesting, attention should be paid to the following:

- a. Rest area for cashmere goat before harvesting
- b. Harvesting area

- c. Procedures for cashmere harvesting
- d. Grading areas
- e. Equipment for grading
- f. Packaging and baling area.

The final goals for the correct management of the different steps of the fibre/fleece harvesting and grading processes are:

- a. Optimising the quality (fineness and uniformity) of the raw material and providing confidence in its use for manufacturers
- b. Maximising the financial return and profit.

#### 4.3 Guidelines for harvesting

These guidelines describe the recommended management of actions during the shearing period and the organisation of the different working environments.

##### 4.3.1 Step 1: Goat harvesting preparation

Before entering the harvesting areas, the goats should be:

- a. Kept dry and in a rest paddock close to the harvesting area.
- b. Divided into groups according to age, sex and colour of cashmere, with emphasis on separating the fleeces from the white cashmere and from the younger animals with the finest fibres. This is the best way to maximise homogeneity in colour and quality.

The timing of the harvesting period requires serious consideration in the production of cashmere goat fibre. Because cashmere is produced seasonally and production is strictly correlated to photoperiod inversion, the shearing period must be chosen according to the following aspects:

- a. Spring season suitability - when the activity of the secondary follicles stops and the undercoat is more easily removed by combing.
- b. Environmental conditions - goats must be housed indoors when it is cold and windy after clipping; kept dry, and fed with the best food for at least 10 days.

##### 4.3.2 Step 2: Structural needs

#### **The pens**

In order to reduce contamination in the fleece by extraneous materials, goat pens must be free of:

- a. Hay bales; ropes, twine and string for hay baling.
- b. Rubbish.
- c. Unused equipment, such as old beams or machinery.
- d. Wire and barbed wire; old sandpaper, screws, nails, bolts and chains
- e. Cigarette butts.

The presence of these materials causes major problems for the textile industry and greatly reduces the economic value of the end products, sometimes even causing costly damage to textile processing machinery.

## The harvesting shed area

A shed should be used specifically for goat harvesting. It should be divided into four areas:

- a. The goat handling area is where the goats rest before being brought into the clip area. It must be totally separate from the other three areas and must also be protected from draughts and rain and have suitable ventilation.
- b. The clip area is where the goats undergo the shearing of the outer coat or guard hair. This area must be completely separated from the other three areas, have elevated wooden floorboards and suitable ventilation. Careful cleaning and classification of fibre fineness and colour after shearing each different goat group is necessary, before shearing of the next group with different cashmere characteristics commences. Anything used to restrain the goats must contain non-contaminating materials (e.g. no polypropylene ropes), in order to avoid contamination with synthetic fibres.
- c. The combing area is where the goats undergo specific cashmere harvesting through precision combing. This area must be completely separated from the other three areas, especially the clip area, where the possibility of hair and kemp contamination is very high. As for the previous area, careful cleaning needs to be done after shearing is completed for each different goat group. Anything used to restrain the goat must contain non-contaminating materials. The area must have elevated wooden floorboards and suitable ventilation.
- d. The cashmere grading area is where the whole fleeces are separated and graded according to fineness. An appropriate artificial or natural light must be provided in the cashmere grading area; the grading table must be constructed of single wooden planks that are slightly separated to allow impurities to fall through. Clean, previously used sacks or new sacks must be available for each fibre category.

Inside the shed area, the following important rules of hygiene must be observed:

- a. Before harvesting: remove all rubbish and carefully wash the empty shed area.
- b. Harvesting staff must be provided with equipment to clean their shoes (scrapers, containers with cleansing and/or disinfectant liquid).
- c. Smoking inside the clip area is not permitted.
- d. Eating is not permitted.
- e. Grooming of goat feet and cutting of nails is not permitted.

### 4.3.3 Step 3: Preparation for cashmere harvesting

Before harvesting cashmere goats begins, the hygiene rules above must be adhered to. All goats must go without food for at least four hours beforehand, and they must be presented for harvesting according to pre-determined categories (age, sex, colour etc.)

The age categories are as follows in Table 2.

*Table 2. Cashmere goat age categories.*

From birth to 6 months		Baby
From 6 months to 1.5 years	(1 <sup>st</sup> combing)	Yearling
2 years	(2 <sup>nd</sup> combing)	Young
From 3 to 5 years	(3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> combing)	Adult
Older than 6 years	(6 <sup>th</sup> combing and more)	Old

Finally, the bags in which the graded cashmere will be collected must be checked to ensure they contain no rubbish or contaminant materials.

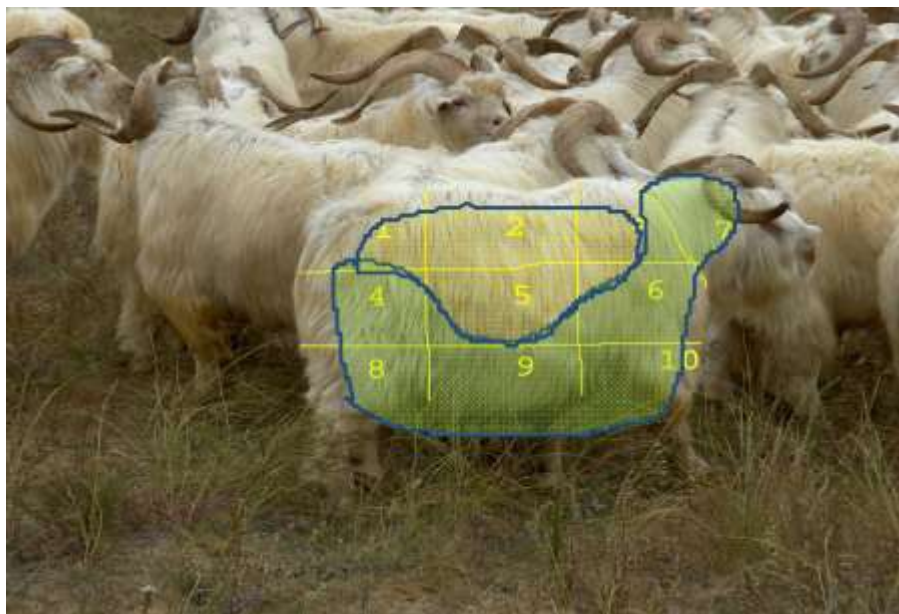
#### 4.3.4 Step 4: Harvesting process

Cashmere harvesting must be undertaken using the combing method. The process consists of two specific actions:

- a. Cutting of the outer coat, or guard hair.
- b. Combing.

When performing these two actions, the farmer must:

- a. Carefully separate the two actions: outer coat clip and combing
- b. Avoid clipping the upper part of the cashmere during the cutting of the guard hair
- c. Comb the under coat according to the different parts of the body (see Figure 1): firstly, the areas of greater fineness between parts of sections 1, 2, 3 and the whole of section 5, which is from the front of the rump to the scapular spine and ribs areas; secondly, the other remaining sections. The less valuable cashmere fractions (feet and belly parts) are combed at the end.



*Figure 1. Under coat according to the different parts of the body*

After combing, farmers must be careful to avoid exposing the goats to cold air, in order to prevent hypothermia.

#### 4.3.5 Step 5: Grading and classification

The principal aim of grading is to be able to supply manufacturers with cashmere lots that require no additional grading and cleaning before processing begins, and to provide them with assurance of the various lots' characteristics in terms of fineness, C.V. %, length and

yield. Good grading and handling practices result in the elimination of unnecessary costs and a better quality end product.

In this step:

- a. Harvested cashmere must be placed immediately on the grading tables and not be allowed to remain on the floor.
- b. Grading tables must be cleaned after each fleece is graded.

Fleeces are graded according to:

- a. Fineness.
- b. Colour.
- c. Length.
- d. Percentage of kemp (guard hair).
- e. Contamination of dark fibre in white cashmere and white fibre in coloured cashmere.
- f. Contamination by external material (vegetable, polypropylene, etc.).

Each lot must be identified by the appropriate codes, which must be attached to the packaging.

Packaging must be made of cotton or nylon. NO POLYPROPYLENE material is to be used for either bags or ropes.

#### 4.3.5.1 Cashmere fibre classification proposal

##### 4.3.5.1.1 Fineness categories

- a. Under 13,5 mm
- b. Between 13,5-14,5 mm
- c. Between 14,5-15,2 mm
- d. Between 15,2-15,5 mm
- e. Between 15,5-16,00 mm
- f. Between 16,00-17,00 mm
- g. Between 17,00-18,00 mm
- h. Between 18,00-19,00 mm
- i. >19,00 mm No cashmere



#### 4.3.5.1.2 Colour

<b>Type</b>	<b>Code</b>	<b>Range</b>	<b>Sub-code</b>
Natural white	W		
White x white	WW		
Black	BLK		
Brown	B	Dark Self Light	B – Dk B – Slf B – Lgt
Light fawn	LF		
Grey (Black)	GR	Dark Self Light	GR – Dk GR – Slf GR – Lgt
Roan (Brown)	RN	Dark Self Light	RN – Dk RN – Slf RN – Lgt
Pink (Light Fawn)	PK	Dark Self Light	PK – Dk PK – Slf PK – Lgt

#### 4.3.5.1.3 Down length

> 60 mm	A
> 50 mm < 60 mm	B
> 45 mm < 50 mm	C
> 40 mm < 45 mm	D
> 35 mm < 40 mm	E
> 25 mm < 35 mm	F
> 20 mm < 25 mm	G
< 20mm	H

#### 4.3.6 Step 6: Raw material packaging and labelling

There are several different packaging methods. Such methods require clean bags that are not stained and do not introduce contaminants (i.e. man-made fibres such as polyester, polypropylene and synthetic fibres, other than nylon).

Generally, bags made of strong material are preferred, so fleeces can be firmly pressed and are easy to store. The bags must be made of natural materials (i.e. cotton, hemp, jute and other cellulose fibres); among the synthetic man-made fibres, only nylon (polyamide 6 and 6.6) can be approved.

Each bag must also have a label stating two types of information. One refers to the source farms and consists of:

- a. Lot code.
- b. Farm name.
- c. Farm address.
- d. Farm telephone number.



The other refers to the cashmere as follows:

- a. Cashmere goat category (code).
- b. Harvesting body area (upper or down).
- c. Colour (code).
- d. Length (mm).
- e. Combing year.
- f. The average diameter of fibres when laboratory analyses have been carried out.