Wool recording in sheep: results from an ICAR on-line survey

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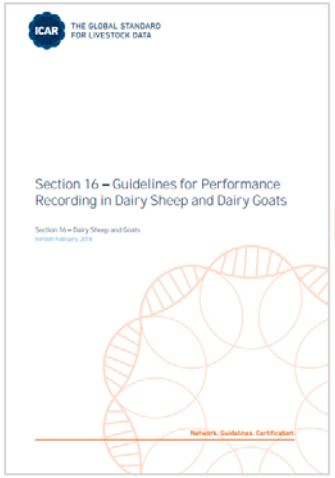
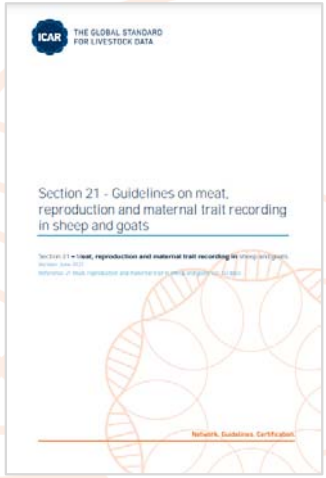
Background

- ICAR Sheep, Goats and Camelids Working Group guidelines
  - small ruminant dairy production
  - meat, reproduction and maternal trait recording





Scope

- To include **wool performance recording** into its guidelines
- Expert Advisory Group
- Objectives
  - to determine the traits of interest
  - collecting and measuring
  - genetic evaluation

On-line survey

- Basic information's
  - organisation’s profile
- Specific questions
  - information about breeds, size of population, no. of animals and flocks in performance recording
  - recorded traits
  - genetic evaluation and selection indices
  - …

Feedback from the Survey

- **17 respondents from 14 countries**
- Common traits
- Who collects the data (farmers, technician,…)
- Method used
- Recording age and wool growth period
- Breeding value estimation and inclusion in economic index

Results

Information about the total size of the wool sheep population

Country	Total size of population	Population in wool performance recording	Population in wool performance recording (%)	N of farms in wool performance recording
Australia	70,000,000	2,900,000	4	222
Bulgaria	10	2	20	1
Croatia	42,000	200	0.47	1
Finland	14,170	1,000	7	10
Iceland	432,023			
Latvia	28,224	5,448	19	49
New Zealand	27,600,000	20,000	0.7	35
Portugal	26,232	26,232	100	90
Slovenia	110,000	5,452	5	2
South Africa	24,000,000	626,000	3	589
South Africa	15,000,000	13,550	0.09	65
Uruguay	6,723,548	25,500	0.4	81

Common breeds

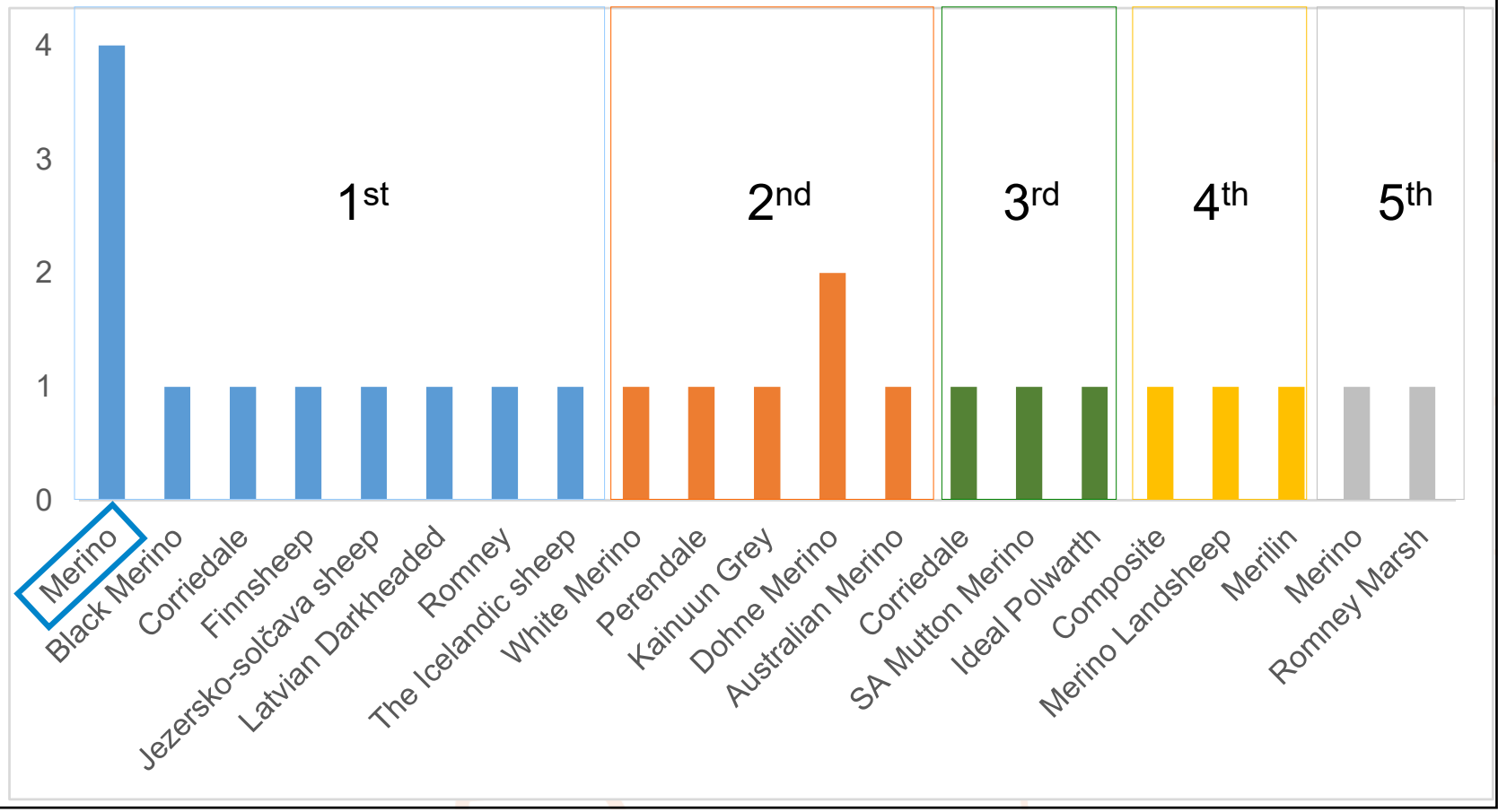
- Main (1st) to 5th (10th) breed

Specialised wool breed

Mountain breed

Lowland

Males and Females



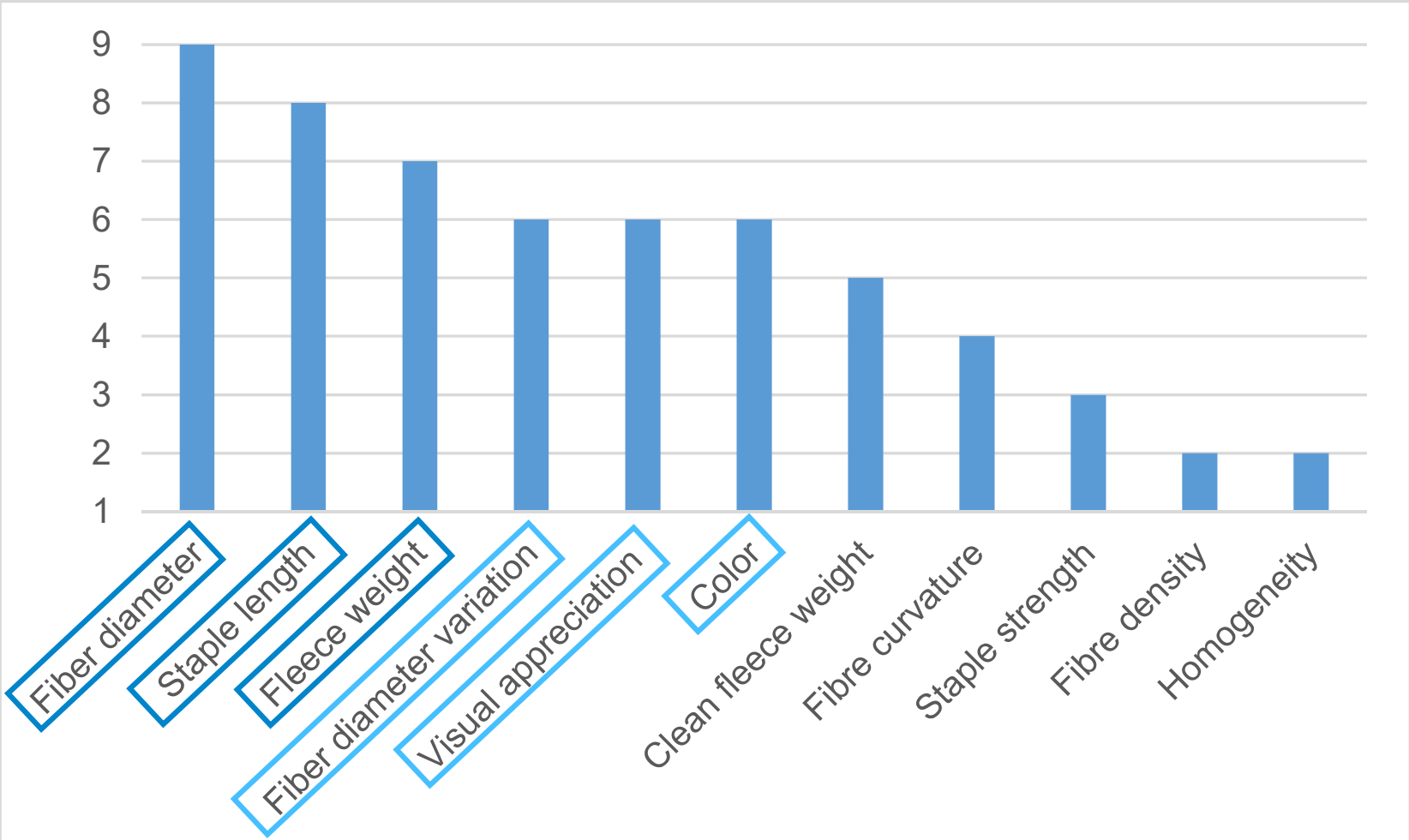
Recorded traits (phenotypes)

- Fleece weight
- Clean fleece weight or yield
- Fiber diameter
- Fiber diameter variation
- Staple length
- Staple strength
- Homogeneity of fleece
- Fibre density
- Fibre curvature
- Color

- Visual appreciation (kind and definition of visual appreciation)

- Additional traits
- Traits requiring a sample of wool

Common traits



Kind of visual appreciation and the definition

23.

Could you detail the kind of visual appreciation and the definitions (examples: fleece rot, wool colour, staple structure, character/style, crimp, weathering and dust penetration, presence of medullated or kempy fibres in the fleece ...)

	Responses	Percent
Responses:	6	100%
Total Responded to this question:	6	35.29%
Total who skipped this question:	11	64.71%
Total:	17	100%

23.

Could you detail the kind of visual appreciation and the definitions (examples: fleece rot, wool colour, staple structure, character/style, crimp, weathering and dust penetration, presence of medullated or kempy fibres in the fleece ...)

Response	Response Text
1	wool colour, staple structure, crimp, dust penetration
2	Conformation Score (1=Poor 9=Excellent) Fleece Score (1=Poor 9=Excellent)
3	Finnsheep wool should be one coloured (all coloured white, brown, black, gray), staple good, tight, keeps dust and dirt away. Not so tight good 3 (1-5) crimp/ 3cm 6-8 , staple should be narrowed from top, very good luster. no kempy fibres (thigh specially) . Staple length good, not too short.
4	staple structure, weak or open back, colour, medulation
5	Black hair and white spotes arn't allowed on different parts of the body. Linear exterior are estimated after shearing. System includes 18 traits and are distributed in 3 trait groups (for body - 7 traits, for musculatura -6 traits and for legs - traits).
6	fleece rot, wool colour, character/style, crimp, weathering and dust penetration, presence of medullated or kempy fibres in the fleece, pigmentation, wool in face.

Additional traits

24. Please describe in few words which traits and methods, not listed in the present survey, that are used to measure/collect ?

	Responses	Percent
Responses:	5	100%
Total Responded to this question:	5	29.41%
Total who skipped this question:	12	70.59%
Total:	17	100%

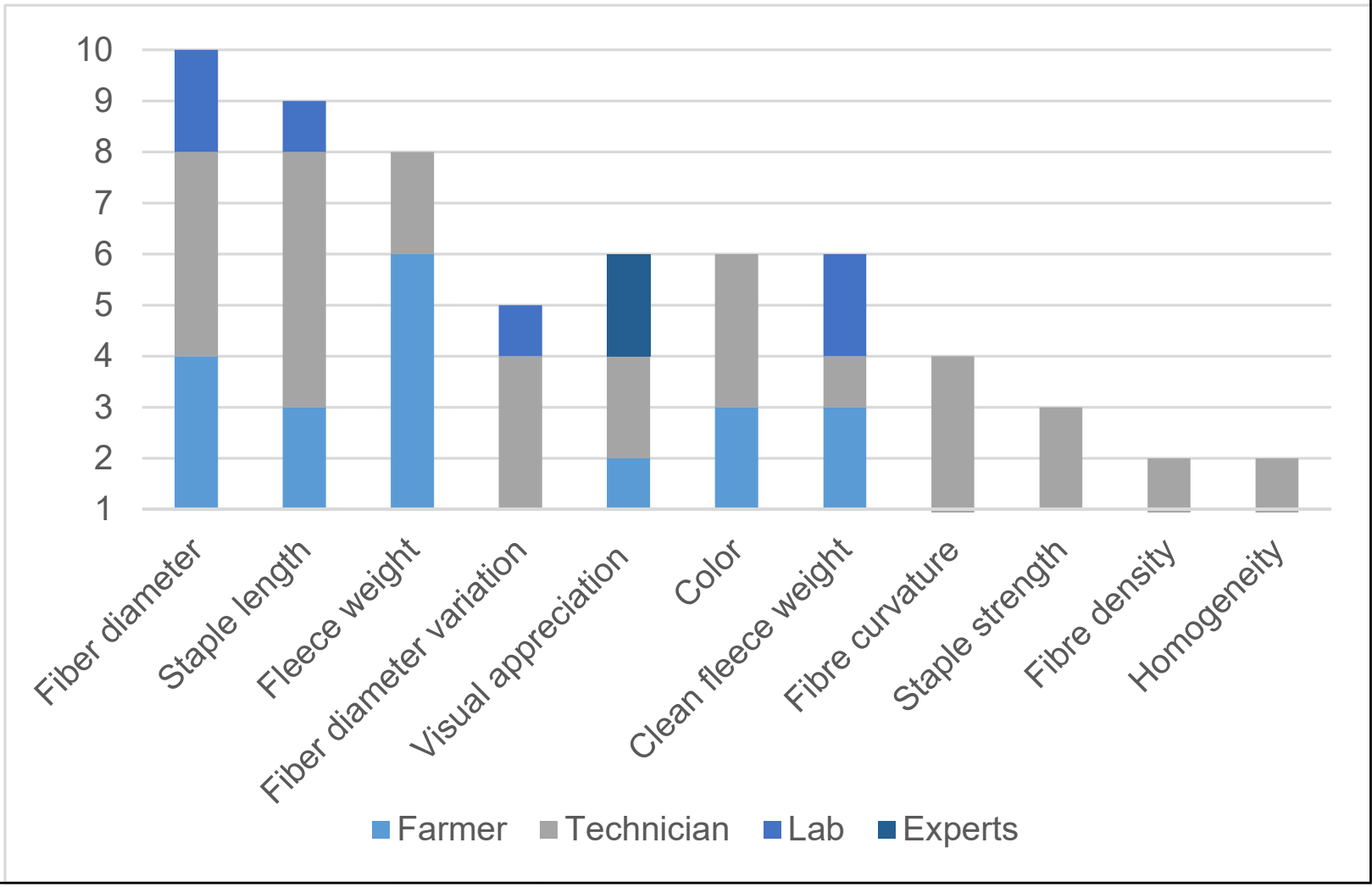
24. Please describe in few words which traits and methods, not listed in the present survey, that are used to measure/collect ?

Response	Response Text
1	Comfort Factor - percentage fibres in sample below 30um
2	luster 1-5 1 very dull 5 very shiny, silky feeling
3	Comfort Factor Spin Fineness
4	Fatsweaters - amount and quality, deviation of this trait is yellow colour.
5	Body weight: at birth, weaning, postweaning, shering. Faecal Egg Count (optional) 1 or 2 mesures Body Condition Score, FAMACHA and body weight at FEC (optional)

Traits requiring a sample of wool

Country	How many sample	Part of body	Who collects	Who sends	Laboratory
Finland	500	side	Farmer or Technician	Farmer or technician	Art Of Fibre Finland
New Zealand	1	Mid side sample	Farmer or classer sometimes wool preparation staff	Farmer	New Zealand Wool Testing Authority or SGS
Portugal	22000	shoulder and hip	Technician		
Slovenia	1	in the middle of the left side of the belly	Technician	Technician	AAFT (www.aaft.com.au), UK
South Africa	1	Midrib	Farmer	Farmer	Sa Fleece Testing Centre and Wool Testing Bureau SA
South Africa	1	Mid-rib	Farmer	Farmer	Wool Test Bureau Port Elizabeth
Uruguay	1	mid-side wool sample	farmer	farmer	SUL (IWTO)

Who collects?



Methods

Example: Staple length

- Depending on trait
  - weighed (washing)
  - scoring scale
  - test
  - equipment
  - visual assement

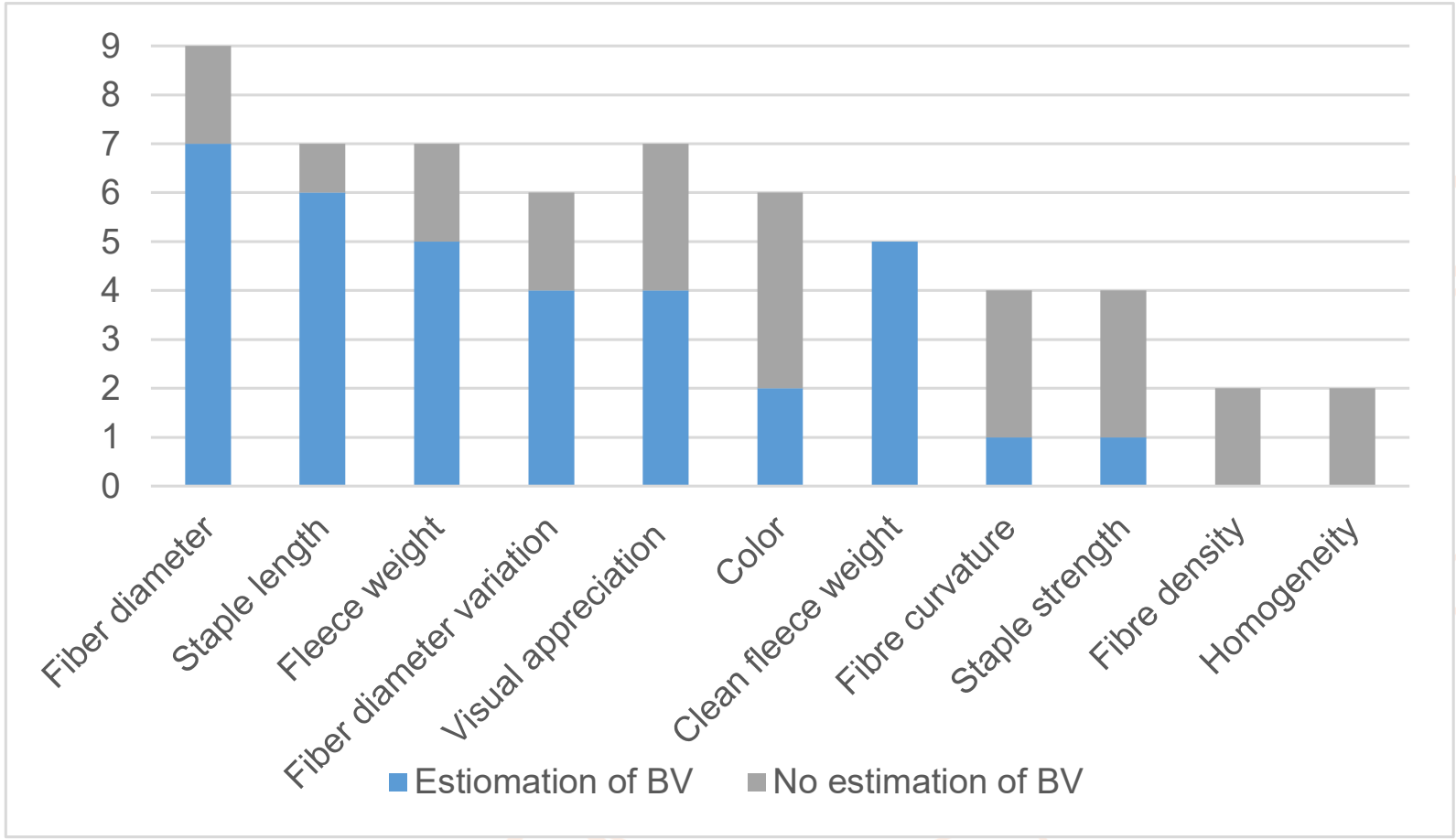
Country	Organisation	Method
Finland	ProAgria Keskusten Liitto	measured from side
Latvia	Agricultural Data Centre	visually
New Zealand	Beef and Lamb Genetics	pull test, average of 55 staples
Portugal	ANCORME - Associaçao Nacional Criadores de Ovinos da Raça Merina	wool grading scale
Slovenia	University of Ljubljana, Biotechnical Faculty	Bowen
South Africa	Agricultural Research Concil	Wool ruler
South Africa	SA Stud Book and Animal Improvement Association	30g mid-rib sample: Measurement of length of staple
Uruguay	Inia	IWTO-17

Recording age and growth period

- Variation
  - **recording age** - from 6 to 24+ months
  - **growth period** - from 3 to 18 months

- Depending on trait, breed, other

Is there an estimation of breeding value?



Genetic evaluation

- Computation method
  - BLUP
  - GBLUP – one country
  - Traits mostly included in the economic index
  - Additional information's about traits
  - average phenotype
  - annual genetic trend
  - genetic parameters (genetic variance and heritabilities)

Shearing

49. How many times per year animals are sheared ?

	Responses	Percent
Once, twice, three times ....:	8	100%
When?:	8	100%
Total Responded to this question:	8	47.06%
Total who skipped this question:	9	52.94%
Total:	17	100%

49. How many times per year animals are sheared ?

Response	Once, twice, three times ....
1	once
2	Twice
3	twice
4	once or twice
5	Once
6	Mixed age sheep - mostly shorn once a year or every 8 months, sometimes 2 times per year
7	once
8	once

Response	When?
1	march to july
2	March and September
3	spring and autumn
4	autumn or autmn and spring
5	Spring and Summer
6	lambs- 3-6 months, again as rising yearlings, pre mating at 17 months - then can be either annual as mixed age ewes, 8 monthly as mixed age ewes or sometimes 2 times per year
7	in spring or in fall
8	spring

Next steps

- Survey results
  - useful insight in wool recording
  - basis for guidelines writing
- Report to ICAR

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Thank you for your attention!