



## INTRODUCTION

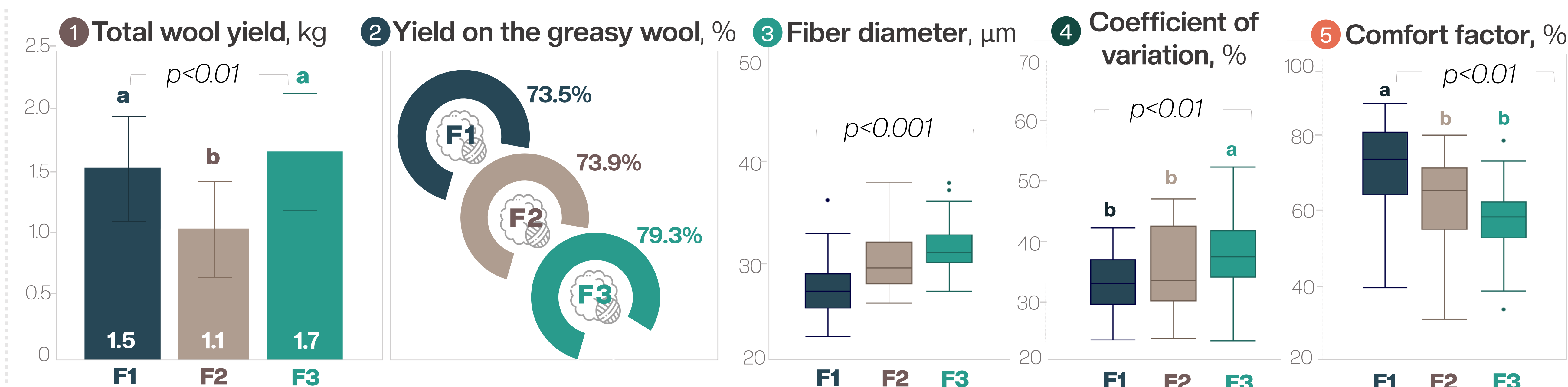
**Pecora Ciuta** is an indigenous breed from Valtellina and Alto Lario, primarily raised for meat production intended for consumption in local farm stays. Actually, nowadays wool from Ciuta sheep is considered a **by-product**. However, in the past, this breed provided wool which, although in limited quantity, was well utilized once spun and knitted into clothing and quilts, or carded to stuff mattresses. The Val3Ciuta project aims to characterize and enhance the productions of the Ciuta sheep: meat, milk and wool. In this context, the present study intends to **evaluate the qualitative and quantitative characteristics of Ciuta sheep wool**, with the objective of contributing to its valorization and, in the future, to the development of a local processing supply chain.

## MATERIALS and METHODS

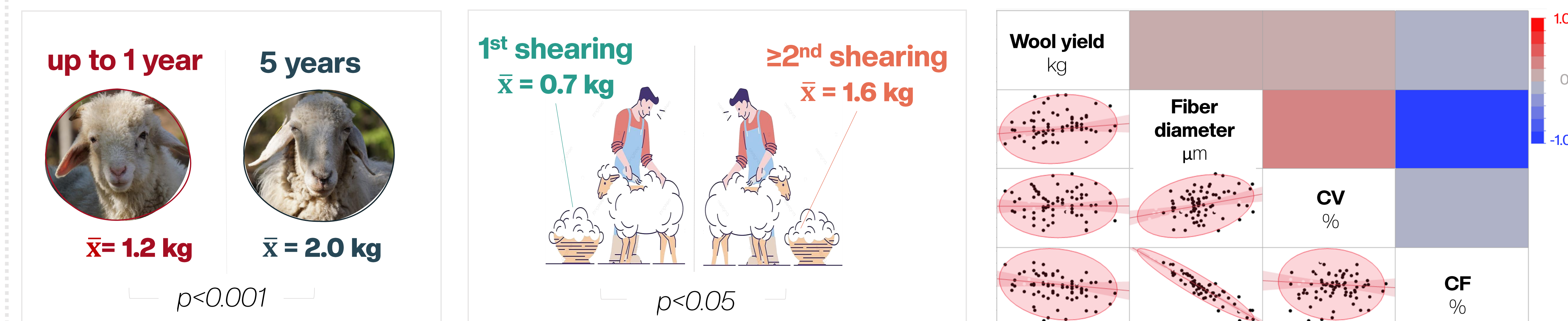
Ninety-six wool samples were collected during September 2023 from three partner farms of the project (F1, F2, F3) where sheep are annually sheared. The following parameters were measured using **instrumental analysis**: fleece weight (kg), yield (%), fiber fineness ( $\mu\text{m}$ ), variability of fineness (%), and comfort factor (%). Descriptive statistics were calculated for the obtained parameters, and comparisons were made using the least squares method (JMP Pro 17 software from SAS) to test the effect of the farm of origin, the number of shearings (first shearing vs. non-first shearing), and the age of the animals (1-9 years). The presence of any correlations between the parameters was analyzed using a multivariate correlation matrix.

## RESULTS and DISCUSSION

The average weight of wool (1) obtained from each shearing per animal is  $1.5 \pm 0.5$  kg, with a **good yield on the greasy wool** (~75%) (2), showing some differences among farms. The differences observed in for the yield highlighted **differences in the management of the animals** (above all, cleaning) in the three farms. The average fiber diameter is  $30.3 \mu\text{m}$  (3), with a coefficient of variability (CV) of 35.9% (4) and a comfort factor (CF) of 61.8% (5). The **farm of origin** significantly influenced all the wool quality parameters measured by instrumental analysis.



The **number of shearings** and the **age of the animals** showed a significant effect exclusively on **fleece weight**, with the highest amount recorded in 5-year-old animals at subsequent shearings, and the lowest quantity in younger animals, lambs and yearlings up to 1 year of age, and at the first shearing. No significant correlations were observed between the wool yield (kg) and the quality parameters measured by instrumental analysis:



## CONCLUSIONS

In conclusion, the fleece weight of the Ciuta sheep is **in line with the average production of non-Merino sheep breeds** of similar size. The average fineness is coarse but usable for textile purposes. Unfortunately, the high CV negatively impacts the spinnability and final yarn count, while the low CF indicates a high percentage of fibers above  $30 \mu\text{m}$ , with a strong likelihood of medullation, responsible for the prickle effect in yarns and fabrics.

