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## Introduction

In Algeria, livestock consist mainly of dairy cattle, poultry and sheep. Despite numerous programs aiming at developing the sector in the recent years, production performances are still unsatisfactory. Therefore, the competitiveness of local production remains poor and national demand for animal products is met by imports. In Algeria, goats are estimated at 3.8 million heads in total including 2.2 million adult females. With 400.000 heads, the Kabylie region harbors about 10% of the national herd. This paper attempts to characterize the goat population and the typology of the farms involved, in the rural district (*daira*) of Chemini, of the department of Bejaia.

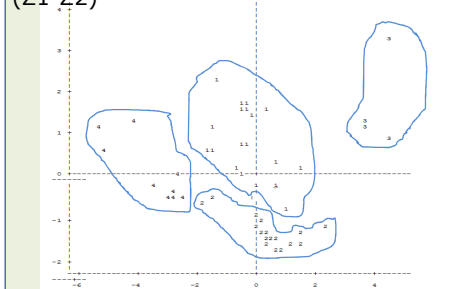
## Material and Methods

A survey of 69 farmers has been carried out in order to characterize goat breeding and its production context in the District of Chemini. The questions focused on household agricultural activities, including breeding of goats, cattle, sheep, rabbits, chicken, turkeys, honeybees and the production of olive oil and figs. The goat morpho-biometric characterization was based on 18 corporal measurements.

## Results

The Hierarchical Cluster Analysis (HCA) of the farm structures defined four groups of farms. Variance between groups accounts for 55.7% of total variability.

**Fig1.** Farm structures in the main plane (Z1-Z2)



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**Table 2.** Least square means (LSM) and their standard error (Se) for the body measurements by sex.

Parameters	Lsmeans ± SE	
	Male	Female
<b>Weight (Kg)</b>	38.99 ± 0.83 <sup>a</sup>	31.93 ± 0.47 <sup>b</sup>
<b>Body length (cm)</b>	95.12 ± 0.96 <sup>a</sup>	92.29 ± 0.54 <sup>b</sup>
<b>Hair length (cm)</b>	12.24 ± 0.51 <sup>a</sup>	9.51 ± 0.29 <sup>b</sup>
<b>Height at sacrum (cm)</b>	69.60 ± 0.91 <sup>a</sup>	66.78 ± 0.51 <sup>b</sup>
<b>Height at withers (cm)</b>	68.23 ± 0.97 <sup>a</sup>	65.41 ± 0.55 <sup>b</sup>
<b>Tail length (cm)</b>	20.61 ± 0.64 <sup>a</sup>	17.87 ± 0.36 <sup>b</sup>
<b>Trunk length (cm)</b>	64.13 ± 1.03 <sup>a</sup>	61.35 ± 0.58 <sup>b</sup>

a, b: Different letters on a same line indicate statistically different values

**Table 1.** Animals and trees numbers by species.

Species	n	Animal and tree number				
		Mean	Median	Max	Min	CV (%)
<b>Goat</b>	69	9.42	9	24	2	57.87
<b>Cattle</b>	40	21.82	12	92	1	113.88
<b>Sheep</b>	59	16.57	12	79	1	100.41
<b>Rabbit</b>	35	33.80	35	66	2	41.51
<b>Hen</b>	54	22.24	20	50	2	57.24
<b>Turkey</b>	20	29.50	28.5	58	11	40.80
<b>Bee hives</b>	30	12.07	9	24	2	59.72
<b>Olive</b>	63	71.79	49	395	5	105.14
<b>Fig</b>	63	22.32	16	64	4	61.44

**Table 3.** Breeders age, numbers of animal species, beehives, olive and fig trees per group: Mean (number of breeders).

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster Effect <sup>1</sup>
<b>Farmer age</b>	54.24 (29)	61.16 (25)	67.33 (6)	37.11 (9)	***
<b>Goat</b>	7.17 (29)	11.08 (25)	22.33 (6)	3.44 (9)	***
<b>Cattle</b>	15.18 (17)	9.92 (13)	1.00 (1)	51.56 (9)	***
<b>Sheep</b>	16.38 (29)	9.53 (19)	48.67 (6)	6.00 (5)	***
<b>Rabbit</b>	33.44 (25)	2.00 (1)	50.83 (6)	13.33 (3)	***
<b>Hen</b>	14.91 (23)	23.42 (24)	48.33 (6)	6.00 (1)	***
<b>Turkey</b>	26.38 (16)	-	42.00 (4)	-	*
<b>Beehives</b>	9.83 (12)	14.15 (13)	9.00 (4)	24.00 (1)	ns
<b>Olive</b>	67.10 (29)	28.64 (25)	-	206.78 (9)	***
<b>Fig</b>	22.55 (29)	13.04 (25)	-	47.33 (9)	***

<sup>1</sup> Kruskal-Wallis test: \*\*\* : statistically highly significant (p < 0.001); ns : statistically not significant (p > 0.05)



## Conclusion

The Kabyle goat appears as a well-characterized breed, exploited in diversified agro-pastoral production systems. In the prospect of capitalizing on this valuable genetic resource, the population nevertheless lacks a management structure that would pursue collectively defined selection goals.