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## Beef quality differentiation in the framework of "Serrana de Teruel" endangered breed conservation programme

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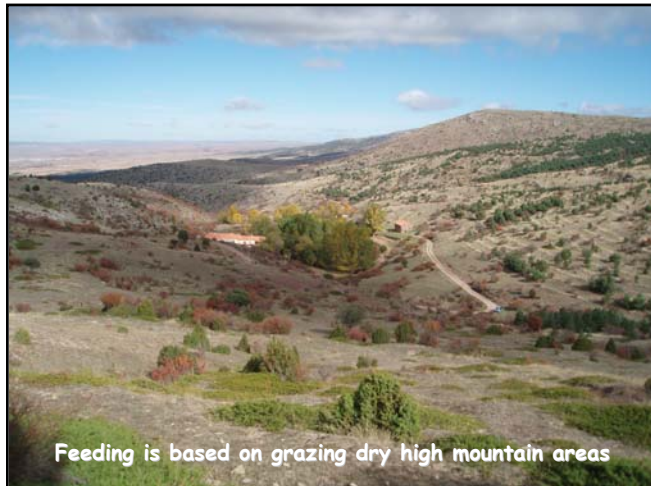
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## SERRANA DE TERUEL

Serrana de Teruel (ST) is a dark or tabby-breed raised traditionally in Aragón, due to their great adaptability to harsh environments



Feeding is based on grazing dry high mountain areas

## SERRANA DE TERUEL

Due to location and production system, Serrana de Teruel is supposed to be representative of the *Serrano* primitive group



## GLOBAL OBJECTIVE

To establish a characterization and conservation programme, both *in vivo* and *in vitro*, for the ST endangered local bovine breed, to ensure its integration to the original region



## SPECIFIC OBJECTIVES

1. Population, morphogenetic and zootechnic characterizations
2. Germplasm cryopreservation (semen and embryos)
3. Prospective study of the meat value chain (surveys)
4. Productive potential (specific bovine meat quality)

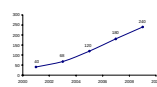


## 1. Morphogenetic and zootechnic characterizations

- 1.1. Census evolution from 40 to 200 animals in the past 8 years.
- 1.2. Straight profiled, eumetric and sublongiligneus individuals.
- 1.3. Smaller size than other close breeds.
- 1.4. Good diversity values despite its low effective population size.



## 1. Morphogenetic and zootechnic characterizations



- These studies provided the basis for a genetic conservation programme.
- In 2007 ST was recognized officially as a breed.

## 2. Germplasm cryopreservation

6.400 semen doses, from 7 ♂  
(electro-eyac or artificial vagina)

40 embryos, from 10 ♀ y 5 ♂  
4 calves born from 10 transferred



## 3. Prospective study of meat value chain



- **DELPHI SYSTEM**: qualitative analysis of anonymous surveys from farmer to consumer, in breed influence geographical area.
- The objective was to get a broad consensus on expert opinion:

- |                |                    |                |               |
|----------------|--------------------|----------------|---------------|
| 1. producers   | 3. slaughterhouses | 6. restaurants | 7. consumers  |
| 2. wholesalers | 4. butchers        | 7. chefs       | 8. government |

## 4. Productive potential

- Carcass and meat quality of ST calves was studied  
(7 yearlings= slaughtering LW of 470kg, 12 months).
- Diversification alternatives for labelled beef market  
(7 bulls and 7 steers, slaughtering LW 700kg, 22 months).



## 4.1. Performance and carcass traits

|                                 | YEARLING   | BULL       | STEER     |
|---------------------------------|------------|------------|-----------|
| Age at castration, months       | -          | 9,1        | 9,8       |
| Castration LW, kg               | -          | 373        | 371       |
| ADG at slaughter/pre-castr., kg | 1,47       | 1,53       | 1,58      |
| ADG castr-slaughtering, kg      | -          | 1,27 a     | 1,01 b    |
| Slaughtering LW, kg             | 471 c      | 720 a      | 661 b     |
| Cold carcass weight, kg         | 277 c      | 426 a      | 365 b     |
| Dorsal fat thickness (13v), mm  | 5,4        | 4,7        | 5,7       |
| Carcass dressing percentage, %  | 58,9 a     | 59,1 a     | 55,3 b    |
| Conformation (18p, SEUROP)      | 9,7 (U-) a | 9,7 (U-) a | 8,3 (R) b |
| Fatness degree (1-5)            | 2 b        | 2+ b       | 3+ a      |

Whole animals showed better carcass dressing % and lower fatness degree

## 4.2. Meat quality

- Considering these studies, ST breed falls within the group of local Spanish bovine breed.
- Meat tenderness was higher than in other similar breeds.
- Castration improves tenderness and juiciness of the meat, by means of a larger incorporation of intramuscular fat.



## BEEF TASTING

- \* To promote ST and its products in its own area of origin.
- \* 1.500 beef snacks, 750 participants, 150 surveys (tenderness, flavor and juiciness).
- \* Very good acceptance by consumers (global note: 8,3 over 10).



## CONCLUSION

Good performance and high quality products with no commercial constraints in the beef market have been obtained from ST breed



The practical implication of these studies should provide the conditions for a labelled meat product that allows the farmer's survival and the assurance of Serrana de Teruel breed conservation

iTHANK  
YOU!

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