

SUITABLE SPECIES FOR SHADOWING AND ANIMAL WELLNESS



1. Isolated oak shadowing sheep during summer 2. The harsh Maremma environment and the breeder Giuseppe Chiarini 3. Maremma cattle 4. Selection of Limousine bulls

WHAT AND WHY

Land use change and abandonment in Mediterranean areas often trigger a poor tree coverage on agricultural lands. This situation rises owing to the adoption of intensive agrotechniques, firstly mechanization. The subsequent loss of human presidium exposes the abandoned areas to the deleterious effects of recurrent fires and soil degrade. As a consequence, breeding activities in free range are largely affected by the inhospitality of these lands. In Italy, Maremma is an explanatory place for such hitches. Placed along the Tyrrhenian coast and delimited in the inner by the volcanic slopes of Amiata Mountain, Vulsini, Cimini and Sabatini Hills, Maremma extends across Tuscany and Latium from Cecina River in the north to Tolfa Mountains in the south. The vocation of the area for cereal cultivation and pastoralism strongly simplified the rural landscape. This is why Maremma became a large hilly or flat area without trees, arising problems for the animal wellness. Here, important zootechnical farms relies on frugal cattle races for free ranging.

Keywords: agro-silvo-pastoral systems, free range breeding, Mediterranean Climate, niche products

HOW THE CHALLENGE IS ADDRESSED

Aside breeding frugal races, e.g., the Maremma cattle, stable breeding for productive races (e.g., Limousine, Charolaise and their breeding with Maremma) could mitigate the environmental harshness. An alternative solution is provided by tree plantations and hedgerows reconstitution. The appropriate choice of locally adapted species is the key element for this agroforestry plan. *Prunus spinosa*, *P. cerasus*, *Pyrus piraster*, *Arbutus unedo*, *Quercus ilex*, *Rubus fruticosus* and many other shrubs are suitable species for the hedgerow reconstitution. *Ceratonia siliqua*, *Pinus pinea*, *P. halepensis*, *Quercus suber* and many others Mediterranean tree species could be considered for sparse plantations amid pastures or arable lands. This could help reconstituting the needed agroforestry matrix at the farm level.

Watch videos and access extra material at:

af4eu.eu



Funded by
the European Union

ADVANTAGES

Fostering free range breeding and pastoralism by reintroducing shrubs and trees in degraded Mediterranean lands with poor biodiversity means the restoration towards important ecosystem services. A renewed human presidium due to agroforestry activities is prerequisite to the resilience of the ecological landscape. Focusing on free range breeding in particular, a farmer would expect from the agroforestry innovations an increase of his own income. In fact, investing on the animal wellness, i.e., planting proper shadowing trees and delimiting both corrals and pastures with hedgerows, would allow the breeding of more productive or marketable races of cattle, sheep and pork. Aside the contribution to feeding in form of fodder and fruits from the shrubs and the trees, a substantial enhancement of the animal wellness is provided by the cooling effect by tree shadowing and transpiration in summer and by the wind shelter effect during the winter time. Noticeably, in respect to stable breeding, the free range breeding allows a cost cutting to the farm up to 60%. As mentioned, the amelioration of the free-range environmental harshness through the adoption of agroforestry solutions, would allow the choice of ameliorated races. For instance, considering the cattle breeding in Maremma, the typical and frugal Maremmana race could be substituted by Limousine and Charolaise or by their breeding with Maremmana itself. Furthermore, the breeders could also opt for other appreciated races from milder Mediterranean areas, like Chianina and Calvana from the inner Tuscany. Such a kind of agroforestry evolution of the breeding would in turn stimulate the market demand, owing to the enhanced quality of the product (i.e., meat). However, breeding the original land races per se contains the added value of the local biodiversity conservation. Such an issue is fundamental for the construction of short value chains of territorial significance. E.g., the neglect pig race named Macchiaiola Maremmana or Maremma Black pig, became a few years ago a food facility recognised by the Slow Food organization. Out of the single farm, the economical multiplier effect, enclosing tourism and catering value chains, would be beneficial to the enlarged territory.

HIGHLIGHTS:

- **Free range breeding in agroforestry systems supports animal wellness in Mediterranean landscapes.**
- **Both frugal and ameliorated races can be the target of breeding in silvopastoral environments.**
- **The breeder can save up to 60% of the cost of the conventional breeding, when adopting silvopastoral systems.**



Maremmana race

**MARCO LAUTERI, FRANCESCA CHIOCCHINI, MARCO CIOLFI, CINZIA PELLEGRINI,
ENRICO PETRANGELI, PIERLUIGI PARIS**

CNR IRET, National Research Council, Research Institute on Terrestrial Ecosystems



**Funded by
the European Union**

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No GA 101086563. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.