

## POSTER

# A CONTRIBUTION TO THE RACIAL STUDY OF THE URUGUAYAN WATTLED PIG

UNA CONTRIBUCIÓN AL ESTUDIO RACIAL DEL CERDO MAMELLADO URUGUAYO

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### ADDITIONAL KEYWORDS

Agrobiodiversity. Conservation. Characterization.

### PALABRAS CLAVE ADICIONALES

Agrobiodiversidad. Conservación. Caracterización.

### SUMMARY

In spite of the persistence in Uruguay of pigs belonging to the wattled pig breed, no adequate attention had ever been paid to them. The wattles appear associated with ancestries of the Iberian pig (Spanish and Portuguese) and to other breeds pertaining to the Mediterranean trunk, being rare in the Celtic trunk. This scientific peculiarity, together with reasons of adaptation and rusticity (production), environmental (association with specific ecosystems) and historical-cultural role makes the study of this genetic resource justifiable.

The Team of the Red XII-HCYTED of Uruguay was established and has made a series of consultations and interviews to locate the farms in which this type of pig is established and other information that will help clarify their present situation, origin and historical evolution.

Preliminary information obtained in the census indicates that the Uruguayan Wattled Pigs (UWP) whilst critical in terms of numbers are widely distributed geographically, living in varying

ecosystems and living together with small and medium producers that have maintained the animals as a novelty as well as for self consumption (sausage making).

Within the framework of a complete racial study the Team is planning to carry out the morphologic characterization of the animals and a genetic study, in order to determine the distance between the Uruguayan wattled pig and other breeds from the Mediterranean trunk.

Productive parameters and the most favourable exploitation conditions for obtaining high quality products in sustainable systems that make geographically unfavourable areas more profitable, will also be analysed.

### RESUMEN

A pesar de que aún persisten en el Uruguay cerdos de la raza Mamellado Uruguayo, nunca se les ha dedicado la atención adecuada. Las

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mamellas aparecen asociadas a variedades ancestrales del cerdo Ibérico (español y portugués) y a otras razas pertenecientes al tronco Mediterráneo, siendo muy raras en el tronco Celta. Esta peculiaridad específica, junto con razones de adaptación y rusticidad (producción), ambiente (asociación con ambientes específicos) y el papel histórico-cultural justifican sobradamente este estudio.

El equipo uruguayo de la Red CYTED XII-H ha realizado una serie de consultas y entrevistas para localizar las granjas donde estos cerdos están establecidos así como otra información que nos ayudará a clarificar su situación actual, su origen y su evolución histórica.

La información preliminar obtenida sobre sus censos indica que el Cerdo Mamellado Uruguayo se encuentra en estado crítico. Además se encuentra distribuido geográficamente de una manera amplia habitando variados ecosistemas en explotaciones medias y pequeñas que han mantenido a estos animales por afición o para autoconsumo (fabricación de chacinados).

Dentro de la tarea de un estudio racial completo nuestro equipo está planeando llevar a cabo la caracterización morfológica de estos animales y su estudio genético, en orden a determinar la distancia entre esta raza y otros miembros del Tronco Mediterráneo.

También son analizados los parámetros productivos y las condiciones de explotación más favorables para obtener productos de alta calidad en sistemas sostenibles que hacen rentables a las áreas más desfavorecidas.

## INTRODUCTION

The race to obtain the typical yields from animal breeds of developed countries has led to the demise of many local productive breeds even though these are often better adapted to the environment, leading to a decline in local agro-biodiversity (GTZ, 2000;

Hickman, 1981). Even so, entering the XXI century developing countries possess most of the animal biodiversity. According to FAO (2001) they have altogether almost two thirds of the cattle, 60 percent of pigs, more than half of the sheep and around 95 percent of the goats. Taking into account milk and meat yields, nearly 60 percent of the production comes from the developing countries and 40 percent from developed countries, although production efficiency is greater in the latter (FAO, 1997; FAO and PNUMA, 2000). But, the production level of the cattle from the developing countries provides better nutrition income and possibilities of work for the families of millions of homes, and a more balanced way to practice agriculture (Poto, 2002; Rodríguez Alcaide *et al.*, 1998).

Genetic improvement programmes have typically only been undertaken in developed countries and many of the comparisons between the yield of local and imported breeds have taken place in the industrialized countries, whose main criteria are based on high levels of production, rather than in the conditions present in the developing countries (Telo da Gama, 2002). This has been aggravated by the limited technical documentation available for making decisions about the best management of zoogenetic resources in such environments (Delgado *et al.*, 2001). Although the local communities usually have ample knowledge of the observable characteristics of their animals, the information documented of most of the productive species is insignificant, (Benítez and Sánchez, 2001; Castro and Fernández, in press; Warsi, 2002).

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Uruguay is typical in this respect, it does not base its production on local zoogenetic resources (LZR), although it does preserve them, in spite of the lack of interest shown by the national producers. These LZR are excluded from the local productive systems mainly due to the lack of knowledge of their characteristics, and to the food adaptation of the imported breeds (Fernández, 2000; Rodríguez, 1995).

This is also the situation with the UWP. In spite of its persistence, it has never been paid any attention, although the present economic situation and problems in the local pork sector make the search of productive alternatives necessary.

The UWP is characterized by its hanging appendages at the base of the neck called wattles. Wattles are an associated morphologic characteristic of ancestries of the Iberian pig (Spanish and Portuguese) and to breeds of the Mediterranean trunk, being uncommon in animals of the Celtic trunk (Castro *et al.*, 2002; Díaz, 1953; Jaume and Alfonso, 2000; Laguna, 1998). This makes the investigation of the UWP interesting, in order to increase the knowledge of its origin, historical evolution and possible kinship with its Mediterranean ancestors.

### MATERIAL AND METHODS

Within the framework of a global strategy (the complete racial study of the UWP and its productive appraisal) and following the directives of the Global Strategy for the Management of Farm Animal Genetic Resources for FAO (Cardellino, 2002; FAO, 1999;

Hammond, 1996) the Uruguayan group from the Ibero American Network on the Conservation of the Biodiversity of the Local Domestic Animals for the Sustainable Rural Development (CYTED Programme, Spain) formed a multidisciplinary team with investigators of the Areas of Animal Genetic Improvement, Genetic and Pig production (Faculty of Veterinary Sciences of Uruguay). This team aims to establish the technical skills required to fortify future activities as well as scientific exchange with other groups that have developed similar experiences. A census of producers based on such experience was carried out to establish the present situation, the origin and the historical evolution of the UWP.

A survey for each breeder was designed but afterwards discarded due to the reluctance of many of the breeders to give data that would be recorded. This was substituted by a personal interview in the farm and complemented with observation of the breeding unit.

### RESULTS

PRELIMINARY INFORMATION INDICATES THE FOLLOWING SITUATION

- *Stock*. The number of animals places the UWP in the category of *Critical population* (11 females, 3 males and 85 animals altogether) according to FAO (less than 100 females, 5 males or 120 animals altogether) and locates them as a *Preservable Zoogenetic Resource*. All the breeders declared to have maintained the animals by the peculiar presence of wattles, to which they name *perillas*.

**Table I.** Geographical distribution of the Uruguayan Wattle Pig. (Distribución geográfica del cerdo Mamellado Uruguayo).

Province	Establishments
Río Negro	3
Rocha	2
Artigas	1
Canelones	1
Colonia	1
Durazno	1
Florida	1
Paysandú	1
Treinta y Tres	1
Total	12

- *Number and location of the farms.* 12 farms widely distributed geographically from the south-eastern zone (border with Brazil) to the coastal west (border with Argentina) were detected (**table I**).

- *Type of production.* Pig production was secondary to other farming activities. In most of them a complete cycle was made, only 2 of them they were dedicated to piglet breeding.

- *Size, earth tenure and labour.* All the farms had less than 30 hectares and the ratio between total area and the area dedicated to the porcine activity varied among them. In regards to the earth tenure preponderance of ownership and partnership was found over leasing. With the exception of one farm the work was carried out by the family members, without contracted labour.

- *Marketing.* Commercialization was carried out by intermediaries who afterwards made the final transaction. Marketing of live animals to abattoirs was not considered. Also a high

incidence of home made sausages for self-consumption was observed.

- *Age of the farmers.* A high average age of farmers was recorded (49 years old) which is in agreement with the general aging of the Uruguayan agrarian population.

- *Facilities for pig production.* The facilities are rustic, located in the fields and built up from materials found in the zone, such as woods, sheet, straw, rushes and mud (**figures 1 and 2**).

- *Nutritional resources used in pig production.* All of the farms utilized residues from the local food-farming industries and harvest residues, as the basic diet for the animals. The use of concentrates was limited to susceptible categories such as piglets and lactating sows.

The information obtained shows that the UWP is produced as a complementary agricultural activity, but has a great social meaning, constituting an important economic and nutritious source for the familiar nucleus of the small producer.

## DISCUSSION

We should consider that the true value of the genetic diversity may not be adequately reflected in the present options and their pertinent technologies, since animals that are fed on poor valued hays are often better able to survive in difficult or poor environments compared to animals selected for more industrial production environments.

As a result and in spite of the little attention that has been paid to the local

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**Figure 1.** Typical farm of Uruguayn Wattled Pig. (Explotación típica de cerdo Mamellado Uruguayo).

pig zoogenetic resources in Uruguay, a detailed study (morphological, genetic and productive characterization) as well as an evaluation of their potential productiveness can contribute to:

- The design of scientific studies towards the identification and utilization of their important characteristics (for example resistance to certain diseases) or better capacity to assimilate food of lower quality and thus not competing with food destined for human consumption.

- Diversify products and create opportunities for the farmer's economical improvement (for example the production of high quality meat products).

- Reduce dependency of external foods and to properly weigh the total cost of the foreign genetic materials.

- Maintain the ecosystem maximizing the effective use of the resources and the environment, making more stable and sustainable agricultural systems.

- Increase the empowerment of farmers and people from the community, encouraging them to participate in research activities and incorporating the local knowledge to the technicians.

The future activities of the Team were fortified by the discovery of UWP in an establishment belonging to the Police of Montevideo which represents an important institutional support for the study, utilization and protection of



**Figure 2.** *Adult male of the Uruguayn Wattled Pig. (Macho adulto de cerdo Mamellado Uruguayo).*

this LZR. An Agreement of Work between the Police of Montevideo and the Red XII-H CYTED was signed up

in order to establish a Recovery Centre of the UWP and delineate a Conservational Programme.

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