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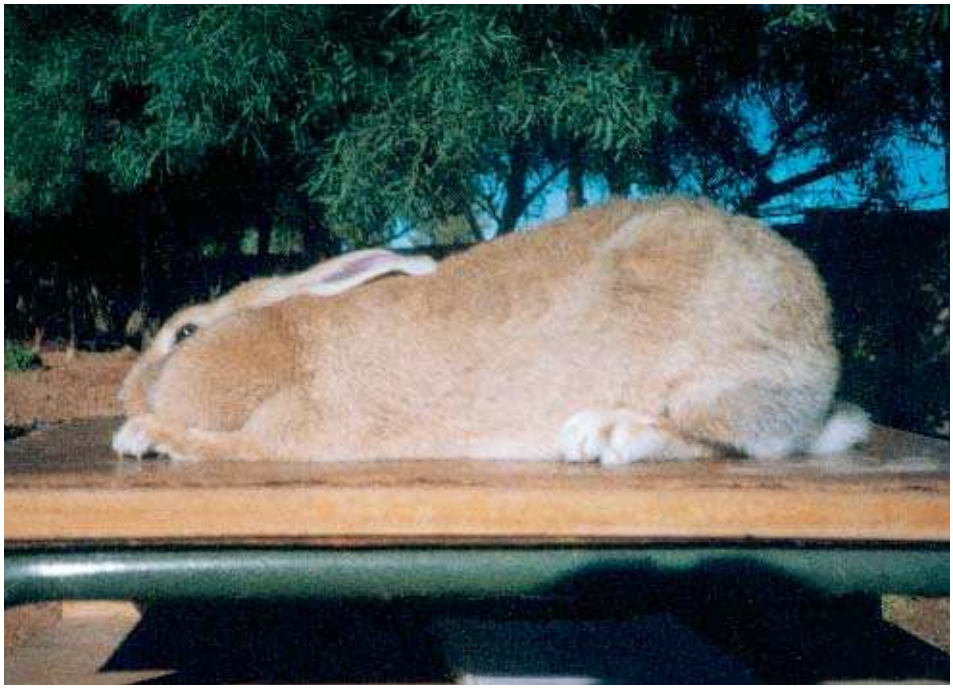
Male Tadla



Female Tadla

# The Tadla Rabbits (Morocco)

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**SUMMARY –** In order to characterise performance traits of the Tadla rabbits, two field investigations, in 59 farms of three counties of the Tadla region, and an experimental trial, conducted at the Institut Technique Agricole of Fkih Ben Salah, were carried out. The investigations concerned phenotypical description, performances, stress resistance and farming. The preliminary results showed that rabbit farming is undertaken by women (52% of the farms visited).

**Key words:** Tadla, description, performances, resistance, farming, genetics.

***RESUME –*** *"Les lapins Tadla (Maroc)". Afin de caractériser les aspects concernant les performances des lapins Tadla, deux études ont été menées sur le terrain, dans 59 fermes de trois districts de la région de Tadla, ainsi qu'un essai expérimental, conduit à l'Institut Technique Agricole de Fkih Ben Salah. Les investigations ont porté sur la description phénotypique, les performances, la résistance au stress et l'élevage. Les résultats préliminaires indiquent que l'élevage du lapin est mené par des femmes (52% des fermes visitées).*

***Mots-clés :*** *Tadla, description, performances, résistance, élevage, génétique.*

## 1. Breed name

(i) *Breed name synonyms:* Tadla.
(ii) *Strains within breed:* none.

## 2. General description

### 2.1. Population data

*2.1.1. Population size and census data:* >42,000

(i) Total number of females being used in purebreeding: 160.
(ii) Total number of females being used in crossbreeding: 100.
(iii) Percent of females being used pure: 37%.
(iv) Total number of males used for breeding: 13.

Source of data: estimates from field work and experimental data (Rarhai, 1994; Bouajaja, 1995; Bouzekraoui, 1995).

*2.1.2. Herd sizes*

The following herd sizes, given in Table 1, were taken from experimental data and field work investigations.

*2.1.3. Origin of the breed*

In the beginning of 1994 field work (Rarhai, 1994) was carried out in order to gather information about the dominant rabbit population in the Béni Mellal province, and to identify the main constraints for the development of rabbit farming in the region.

Table 1. Herd sizes in governmental and small scale farms

| | Governmental | Small scale farms |
|---|---|---|
| Mean | | |
| Adult animals | 50 | 5 |
| Young animals | 770 | 16 |
| Range | | |
| Adult animals | 40-53 | 2-49 |
| Young animals | 615-815 | 31-755 |

There is no data about whether the native stock of rabbits in Tadla was in contact with exotic breeds at the time of the colonisation of Morocco by France and Spain (1912).

In 1995, experimental work was carried out at the Institut Technique Agricole of Fkih Ben Salah, to further study and evaluate the zootechnical parameters of the Tadla rabbit populations (Bouajaja, 1995). Another experimental study is now in progress.

*2.1.4. Situation with regard to danger of extinction*

There is no danger of extinction since the total number of breeding rabbits is over 42,000.

## 2.2. Use of the breed in a descending order of product importance

The Tadla breed is of small size and raised for meat production.

## 2.3. Colour

See photographs.

## 2.4. General type

*2.4.1. Body parts* (Table 2)

Table 2. Body measurement (cm) in adult animals

| Trait | Mean | Range |
|---|---|---|
| Body length† | 41.2 | 37-44 |
| Chest circumference | 31.7 | 26-38 |
| Loin width | 9.5 | 9-12 |
| Thigh circumference | 15 | 13-18 |

†The head is included when body length was measured.

The data reported in Table 2 indicate that Tadla rabbits are of medium body length. Chest circumference is relatively similar to that of Zemmouri rabbits, but loin appears to be relatively narrow in width which may impair meat production. The hips are fairly strong.

*2.4.2. Head:* convex

*2.4.3. Eyes:* grey

*2.4.4. Ears:* erect

*2.4.5. Feet and legs:* medium in length (22.5 and 12.8 cm respectively)

*2.4.6. Tail:* curly (the extremity pointing upwards)

**2.5. Basic temperament:** moderately nervous

**2.6. Special characteristics of the breed**

The Tadla rabbits are well adapted to hot weather (40°C in summer). They have resistance to some diseases (fungal infections) but are more sensitive to viral haemorrhagic disease (VHD).

**2.7. Nest quality:** pooled (not scattered)

## 3. Pattern

### 3.1. Climate

*3.1.1. Elevation and topography:* the Tadla rabbits are adapted to various geographical areas (mountains, valley, flat land and elevated flat land)

*3.1.2. Favourable climate:* temperatures between 3.5°C and 44°C and humidity between 5-90%

### 3.2. Main features of farming

*3.2.1. Socio-management system:* extensive rearing, free range system (old houses) and underground cells or deep wells (El Gaour)

*3.2.2. Mating method:* natural

*3.2.3. Nutrition*

(i) *Concentrates:* pelleted feed (governmental farms), local sub-products of farm (small scale farms).
(ii) *Water:* free access throughout the year in governmental farms and not required when the main nutrition is based on greens and vegetables as in the small scale farms.
(iii) *Seasonality of nutrition:* grains and cereal sub-products (straw, hay) and household vegetable waste throughout the year. Greens in winter and spring, and also in summer in irrigated areas.

*3.2.4. Housing*

(i) *Cages:* wired cages and indoor rabbitries in governmental farms. Several traditional housing systems [wood, mud mixed to straw (good isolation in summer and in winter), stones or bricks in small scale farms]. Free range (old buildings), underground cells, deep wells (El Gaour).
(ii) *Photoperiod:* adopted photo-period of 16 h light/day in governmental farms. No particular photo-period program is used in small scale farms.

### 3.3. Common diseases and parasites

Coryza (pasteurellosis), viral hemorrhagic disease, coccidiosis and external parasites (fungal parasites of the legs and ears).

## 4. Performance

### 4.1. Reproduction (Tables 3 and 4)

Table 3. Information of sexual maturity

| Trait | Mean | Range |
|---|---|---|
| Age of buck at first service (months) | 6 | 3-8 |
| Age of doe at first mating (months) | 6 | 3-8 |
| Age of doe at first kindling (months) | 7 | 4-9 |
| Weight of buck at first service (g) | 2600 | 2000-2400 |
| Weight of doe at first mating (g) | 2145 | 1650-2500 |

Table 4. Fertility and fecundity traits

| Trait | Mean | Range |
|---|---|---|
| Conception rate (%) | 67 | 33-100 |
| Kindling interval (days) | 65 | 37-91 |
| Litter size at birth (total born) | 6.2 | 4-9 |
| Litter size at weaning (5 weeks) | 4.6 | 3.9-5.4 |
| Litter weight at birth (g) | 314 | 202-457 |
| Litter weight at 5 weeks (g) | 2492 | 2081-2902 |

The parameters shown in Table 3, indicate an early age of sexual maturity in Tadla rabbits. Since the main parameters were obtained from field investigations, they need to be further studied in controlled experiments. It appears that body weights at first service for both male and female are quite high.

The conception rate and the kindling intervals are almost similar to those of Zemmouri rabbits, but lower when compared to exotic breeds (Californian and New Zealand White). Litter size and weight at birth and at weaning (5 weeks) are relatively lower than those of Zemmouri rabbits.

### 4.2. Prenatal mortality per litter

The available data concerning percentage of stillbirths (mean: 9.2, range: 7-11) indicate a low value in the Tadla rabbits.

### 4.3. Milk yield traits

The number of teats has a mean of 8.9 and range between 8 and 10, figures higher than in Zemmouri rabbits. Other different parameters referring to milk production are still to be investigated.

### 4.4. Lifetime production per doe

The mean number of litters per year of the Tadla doe seems to be normal, since the way of farming in the Tadla region is mainly extensive. However, doe longevity for such a system appears short (Table 5).

Table 5. Lifetime production per doe

| Trait | Mean | Range |
|---|---|---|
| Number of litters per year | 4 | 2-10 |
| Doe longevity (years) | 3 | 1-6 |

### 4.5. Pre-weaning food utilisation per litter

Daily feed intake per litter (0-5 weeks) for Tadla rabbits is about 210 grams, with a range of 157-299 grams (Bouajaja, 1995). Accordingly, daily crude protein per litter during this period is about 32.1 grams.

### 4.6. Post-weaning body weight, gain and food utilisation (Tables 6 and 7)

Table 6. Post-weaning growth traits of body weights and gains (g)

| Trait | Mean | Range |
|---|---|---|
| Weight at weaning (28 d) | 423 | 220-610 |
| Weight at weaning (35 d) | 540 | 390-695 |
| Weight at 6 weeks | 681 | 531-836 |
| Weight at 8 weeks | 963 | 814-1119 |
| Weight at 10 weeks | 1245 | 1096-1401 |
| Weight at 11 weeks | 1387 | 1237-1542 |
| Daily gain 5-8 weeks | 20.2 | 19.6-26.7 |
| Daily gain 8-11 weeks | 20.2 | 19.6-26.7 |

Table 7. Post-weaning food utilisation per young

| Trait | Mean | Range |
|---|---|---|
| Daily feed intake (g) | | |
| 5-6 weeks | 52.4 | 50.6-54.8 |
| 6-7 weeks | 64.2 | 62.2-72.2 |
| 7-8 weeks | 78.0 | 75.8-85.0 |
| 8-9 weeks | 87.3 | 85.0-94.4 |
| 9-10 weeks | 96.4 | 91.2-99.5 |
| 10-11 weeks | 105.5 | 98.4-114.6 |
| Feed conversion (g intake per g gain) | | |
| 5-11 weeks | 4.0 | 3.8-4.3 |

According to the results reported in Table 6, all the following parameters are relatively low comparatively to the Zemmouri rabbit population: body weights at 4, 6, 8, 10 and 11 weeks, and daily gains between 5-8 and 8-11 weeks.

### 4.7. Hair and fur traits

The hair length in Tadla rabbits (Table 8), appears shorter for both down and guard hairs than in Zemmouri rabbits.

Table 8. Hair traits

| Trait | Mean | Range |
|---|---|---|
| Length of down hair (mm) | 21.1 | 16.5-25.6 |
| Length of guard hair (mm) | 30.3 | 24.0-36.6 |

## 5. Physiological reaction to climatic stress

Under air temperatures of 13°C, Tadla rabbits showed average values of 38.4°C, 34.1°C, 35.8°C, 33.1°C and 34.2°C for temperatures of the body, skin, abdomen, hair and ear lobe (Table 9). It seems that Tadla rabbits stand the high environment temperature better than other rabbit populations and the improved breeds. However there are no data available so far concerning experimental induced temperature stress.

Table 9. Physiological parameters characterising responses of adult Tadla rabbits to environmental stress

| Trait | Mean | Range |
|---|---|---|
| Hair temperature (°C) | 33.1 | 30-35 |
| Ear lobe temperature (°C) | 34.2 | 30.8-36.0 |
| Pulse rate | 237 | 204-264 |
| Respiration rate | 120 | 114-126 |

## 6. Genetic improvement

### 6.1. Genetic parameters

No data is available.

### 6.2. Selection for economic traits

The first experiment carried out in 1995 by Bouajaja and the one now in progress were intended to study zootechnical parameters of economic importance in Tadla rabbits (litter size at birth and weaning, body weight gains and live weight at 77 days).

On the other hand, attempts were made in order to adapt local Tadla rabbits to intensive rearing methods, wire cages and pelleted feed.

### 6.3. Crossbreeding of Zemmouri rabbits with improved breeds

No work has been undertaken to investigate whether the economic traits of the Tadla rabbit populations can be improved by crossbreeding with exotic breeds such as New Zealand White or Californian.

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