

UNE RACE TRYPANOTOLERANTE MÉCONNUE: LA BORGOU

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RESUME

Le Borgou possède des qualités intéressantes d'adaptation et de productivité en milieu infesté de glossines. Localisée principalement au nord du Bénin et au nord-ouest du Nigéria, cette race trypanotolérante est cependant menacée par un métissage accru avec du sang zébu. Dans le cadre de la promotion et du développement du bétail trypanotolérant dans la lutte contre la trypanosomose animale, les capacités d'élevage de ce type de bétail devraient inciter les organismes régionaux et internationaux à mettre en place un programme de conservation de ce patrimoine génétique.

SUMMARY

The Borgou breed offers interesting potentialities because of its adaptation and its productivity to an environment infested by tse-tse flies. Mainly located in north Benin and northwestern Nigeria, this trypanotolerant livestock was however threatened by an increasing breeding with zebu cattle. Within the framework of the promotion and the development of trypanotolerant breeds against animal trypanosomiasis, Borgou's potentialities should prompt regional and international institutions to implement a conservation of this genetic resource.

1.0 ORIGINE DE LA RACE

DOUTRESOULLE (1947) classe la race Borgou parmi les taurins issus d'un croisement entre les races N'Dama et Lagunaire.

Compte tenu de la morphologie des animaux et de la présence d'un cheptel Zébu important dans l'aire de distribution de la race Borgou, FAULKNER et EPSTEIN (1957) et EPSTEIN (1971) définissent plutôt cette race comme un produit de métissage stabilisé de Zébu Fulani blanc et de taurins à courtes cornes, en particulier les produits N'Dama/Muturu. Suivant DOMINGO (1980), ces taurins seraient le Lagunaire ou le Somba, car le N'Dama et le Muturu ne sont guère rencontrés dans la zone de distribution du Borgou.

Les travaux de NDIAYE et al (1977) sur les groupes sanguins des taurins du Golfe du Bénin, permettent de rattacher le Borgou à ce groupe.

2.0 DESCRIPTION DE LA RACE ET DES CARACTERES ETHNIQUES

DOMINGO (1980) regroupe sous le terme générique de Borgou deux types d'animaux morphologiquement différents. D'une part, ce qu'il appelle le "vrai Borgou" et d'autre part le "Borgou-Zébu" qui se distingue du précédent par une taille plus grande, une bosse plus marquée et une localisation plus septentrionale dans l'aire de distribution.

Ce second type doit être considéré comme un croisement Borgou x Zébu. Nous ne retiendrons que le premier type décrit par cet auteur.

D'allure harmonieuse et fine, le bovin Borgou présente un profil rectiligne quoiqu'une légère bosse soit observée. La hauteur au garrot atteint 110 cm. La robe est claire, généralement blanche et mouchetée. Des robes pies noires, rouges ou noires sont couramment rencontrées. Les muqueuses sont foncées. La taille et la structure de cet animal lui permettent d'atteindre un poids moyen de 240 kg sur pâturages naturels. Le dimorphisme sexuel est peu accusé.

La tête est longue avec un front plat. Le chanfrein est rectiligne. Les oreilles de taille moyenne sont portées horizontalement. Les extrémités (oreilles et museau) sont généralement noires. Les cornes sont courtes à moyennes, elles s'écartent latéralement en demi-croissant à partir d'un chignon rectiligne.

L'encolure est courte et caractérisée par une légère bosse, fine chez la vache alors qu'elle se confond avec le renflement musculaire chez le mâle.

Le fanon est peu développé. Le dos est long, droit et étroit. Il est prolongé par un rein droit et une croupe légèrement inclinée vers l'arrière. Les cuisses sont plates. La poitrine et les côtes sont étroites. Les sabots sont foncés. Les aplombs réguliers. La peau est fine et souple. Le poil est ras.

Chez les femelles, la mamelle est peu développée avec des trayons de taille moyenne.



3.0 PARAMETRES ZOOTECHNIQUES

Peu de données concernant les performances de la race Borgou existent. Elles proviennent essentiellement d'observations conduites en milieu traditionnel.

Race à trois-fins, le Borgou est un bon animal de trait apprécié pour sa docilité. Les principaux paramètres (reproduction et production) peuvent être résumés ainsi:

Age au premier vêlage : 3,5 ans

Intervalle de vêlage : 18 mois Taux de fécondité : 65 p.100

Durée de vie sexuelle : 11 ans

Nombre de vêlages : 4 à 5 Poids à la naissance : 18 kg Age au sevrage : 5 à 7 mois

GQM (0-1 an) : 200 g

Taux de mortalité (0-1 an) : 20 à 35 p.100

Age adulte : 4 ans

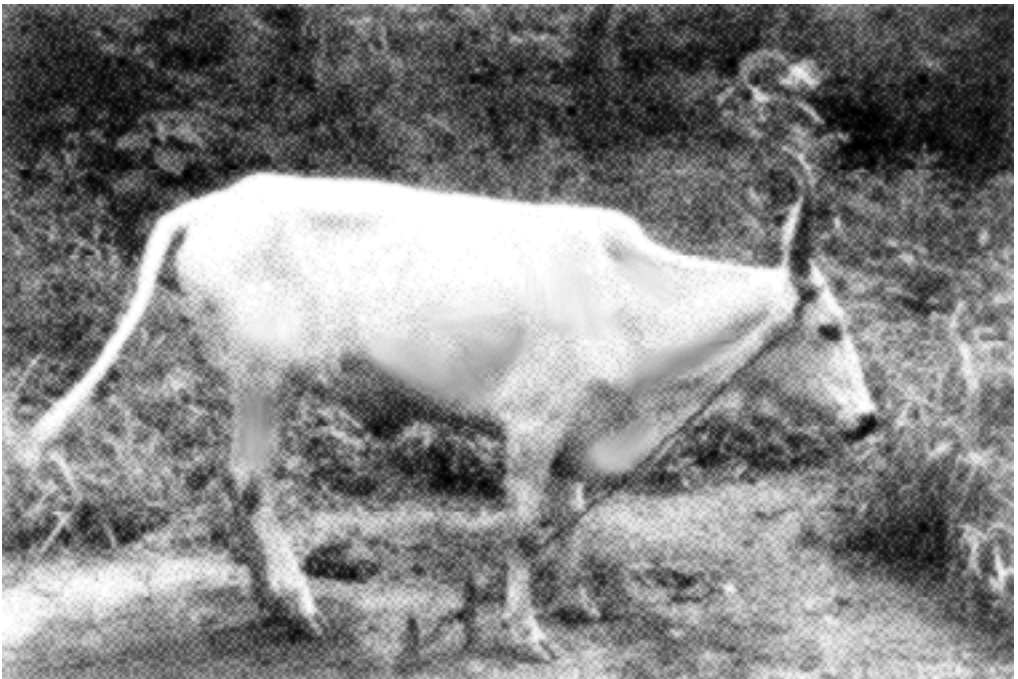
Poids moyen : 230-260 kg

Production laitière : 535 kg

Production laitière par jour : 21

Durée de lactation : 250 jours

Rendement à l'abattage : 45 à 50 p.100



4.0 REPRODUCTION

La fécondité des femelles est caractérisée par l'âge au premier vêlage, l'intervalle entre mises bas et le taux de fécondité. La race est réputée rustique.

Nos observations en milieu traditionnel (DEHOUX et HOUNSOU-VE, 1993) ont montré un âge au premier vêlage variant de 3 à 4 ans, avec une moyenne de 3,5 ans. Ces résultats sont confirmés par d'autres auteurs (P.P.E.A., 1991; AUER et AUER, 1982). On peut estimer que le Borgou est un animal peu précoce. Ces vaches, à partir du premier vêlage, donnent un veau tous les 18 mois.

Le taux de fécondité est de 65 p.100. Ce taux peut atteindre exceptionnellement 85 p.100 en milieu villageois. Les troupeaux brucelliques ont un taux de 35 p.100.

La carrière productive d'une vache Borgou dure 10 à 11 ans pour 4 à 5 vêlages. Les naissances ont lieu toute l'année, avec néanmoins, un maximum à la reprise des pluies et en début de saison sèche.

5.0 CROISSANCE ET MORTALITE

La croissance se poursuit jusqu'à 5 ans. Le GQM du veau de la naissance à un an est de 200 g/jour. Le veau pèse 90 kg à un an.

SINTONDJI (1986) a testé l'aptitude à l'engraissement des boeufs Borgou élevés sur pâtures naturelles, au ranch de Samiondji (Zou, Bénin). Le GQM a été de 266 g pour une durée d'un an. Dans des conditions semblables, les taureaux lagunaires ont eu un GQM de 117 g.

En milieu traditionnel, la mortalité moyenne est de 7,5 p.100. Le taux de mortalité des adultes est de 3,1 p.100 et celui des veaux (0-1 an) de 23,1 p.100.

6.0 PRODUCTION LAITIERE

La production laitière des vaches Borgou est estimée à 2,3 litres par jour (OGODJA et al, 1993).

La durée de lactation fluctue de 8 à 10 mois. La sécrétion lactée est minimale au premier vêlage. En milieu traditionnel, la production moyenne est de 535 kg par lactation. Avec supplémentation (un kg de graines de coton par an et par vache), cette production atteint 625 kg en 240 jours.

Le sevrage des veaux s'effectue vers 4 à 6 mois.

7.0 RENDEMENT EN VIANDE

Un rendement global de 49,2 p.100 est obtenu sur des Borgou adultes d'un poids variant de 210 à 300 kg. Pour un poids vif de 250 kg, il faut compter 125 kg de carcasse et 31 kg d'abats et d'issues (TYC, 1988).

8.0 POPULATION, DISTRIBUTION GEOGRAPHIQUE ET MODE D'ELEVAGE

Le bovin Borgou est principalement concentré dans le nord du Bénin bien qu'il ait tendance à se développer sur l'ensemble du territoire béninois. On le retrouve également au nord-est du Togo, au sud-est du Burkina Faso et au nord-ouest du Nigéria, où il prend le nom de Keteku (F.A.O., 1980).

L'effectif du cheptel Borgou au Bénin serait de 400000 borgou purs et d'autant de borgou métissés de zébus. L'effectif dans les autres pays (Borgou purs et métissés) serait de 200000 têtes au Nigéria et de 70000 têtes au Togo, soit près d'un million de bovins Borgou purs ou métissés de sang zébu (Fulani, MBororo et Gudali) ou taurin (Lagunaire, Somba et Muturu).

Dans toute sa zone de distribution, le métissage s'accroît, surtout avec les différentes races de zébu. Près de 65% des troupeaux du nord-est du Bénin ont un reproducteur de sang zébu ou métissé de zébu, à tel point que l'on peut s'interroger sur le devenir de cette race à long terme.

Aux mains de l'ethnie Peulh essentiellement, l'élevage du Borgou est de type agropastoral

naisseur. Le mode d'élevage du Borgou est caractérisé par deux systèmes d'exploitation des pâturages naturels. D'une part, le système transhumant, 80% des troupeaux du nord Bénin, caractérisé par une grande mobilité et un faible lien avec l'agriculture, et d'autre part le système sédentaire où l'élevage associé à différentes cultures (d'autosubsistance et de rente) occupe les zones situées aux alentours des villages. Les mouvements de transhumance sont de faible amplitude n'excédant pas 300 kms. Sous la surveillance des enfants, les animaux vont au pâturage 6 à 10 heures suivant la saison. Les veaux restent près du campement jusqu'à l'âge de 4 mois tandis que le reste du troupeau pâture.

La taille moyenne des troupeaux est de 40 à 60 têtes. Les vaches sont dominantes (40% de l'effectif). Une compétitivité s'installe entre l'homme et le veau pour le lait.

La castration est une pratique peu courante en élevage borgou. Les mâles sont mis très tôt à la reproduction (2 à 3 ans).

Le facteur alimentaire est le principal facteur limitant la productivité des Borgou. Les contraintes sanitaires sont nombreuses. La peste bovine et la péripneumonie contagieuse sont bien contrôlées par des vaccinations annuelles. Périodiquement, le cheptel est confronté à une épizootie de fièvre aphteuse. Les parasitoses gastro-intestinales compliquent avec la trypanosomose, l'état de sous-nutrition lactée des veaux et permettent d'expliquer le taux de mortalité élevé dans cette classe d'âge. La brucellose est une dominante pathologique des troupeaux.

Les récents travaux de DOKO (1991) confirment que la race Borgou est une race trypanotolérante au même titre que la race des Lagunes ou la race N'Dama.

9.0 CONCLUSION

Le Borgou est un animal d'élevage extensif adapté à son milieu naturel et obtient une productivité semblable à celles des autres races trypanotolérantes.

Face au métissage accru de cette race, il est regrettable de constater que les stations d'élevage sont peu efficaces et obtiennent des paramètres zootechniques désastreux inférieurs mêmes à ceux des troupeaux élevés traditionnellement. Ces stations pourraient jouer le rôle de fournisseurs d'animaux Borgou de "retrempe" pour le milieu villageois.

Alors que de nombreuses races trypanotolérantes sont menacées d'extinction, l'effectif du cheptel Borgou est suffisamment important pour justifier que cette race soit mieux utilisée et mieux connue pour augmenter la production de viande dans les pays infestés par la glossine.

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EGYPTIAN SHEEP RESOURCES

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SUMMARY

Local Egyptian breeds of sheep, though considered small to medium size, have the desirable qualities of continuous breeding throughout the year and hardiness. Increasing the flock owners income may be through:

1. Higher productivityby accelerated lamb production of the valley and delta Ossimi and Rahmani breeds and improving the natural resource situation for the adapted desert Barki breed.
2. Establishing a simple grading system for the local coarse wool to improve marketing and encourage its use in small scale industries, hence rural development of the area.

RÉSUMÉ

Les races locales de mouton égyptiennes, bien que de petite taille, possèdent les qualités recherchées de reproduction non saisonnée et de rusticité. L'accroissement des revenus des éleveurs passe par:

1. une productivité accrue par une accélération de la production d'agneaux pour les races Ossimi et Rahmani dans la vallée et dans le delta, et par une amélioration des ressources naturelles pour la race Barki dans le désert.
2. la mise en place d'un système simple de classement pour la laine brute pour améliorer la commercialisation et encourager son utilisation dans de petites unités locales, et ainsi promouvoir le développement rural de la zone.

1.0 INTRODUCTION

Three main local coarse wool breeds are raised: Barki (B), Ossimi (O) and Rahmani (R). They are fat tailed that mainly produce lambs and that their wool is processed into low quality woolens, carpets and floor coverings. A minor coarse wool breed raised in upper Egypt, Saidi (S), is thin tailed that is adapted to hot temperatures.

Ewes of local breeds could breed throughout the year, hence their ability to breed more than once per year, good ability to rear their lambs and good lamb livability. Total sheep population of 3671895 is distributed, where 42.9, 34.1, 19.7 and 3.2 percentages are in middle and upper Egypt, delta, coastal zone of the western desert and other desert areas, respectively (Ministry of Agriculture, 1991). However, a sizeable number is being exported to the Gulf countries. Different studies are being directed towards increasing productivity of local sheep to meet the requirements of both local and export markets.

2.0 ORIGINS AND PRESENT SITUATION

2.1 Barki sheep

Barki sheep are distributed along a belt on the Mediterranean sea coast of the western desert for a length of about 500 km with a depth of about 25 km. Sheep is considered the main contributor to livestock population in the area, where the annual rainfall ranges from 150 to 180 mm. A recent survey showed that total number of Barki sheep was 722660 heads (Ministry of Agriculture, 1991).

Animals graze natural vegetation during a limited grazing season which extends from November to March. Rain fed barley is cultivated and consumed by both inhabitants and their animals especially during the long dry season which extends from April to November. 2.2

GHANEM (1980) described Barki sheep, where the body is white with a brown or black head; few individuals may have a white head. Legs are usually coloured or spotted. The colour on the head may extend to cover the neck. Males are horned whereas ewes are usually polled. The tail is triangular with higher fat at the top than that of the thinner at the bottom, with a twisted end that does not reach below the hocks. It represents 1.1-2.8 percent of live weight.

Barki sheep are considered smallest of the Egyptian breeds of sheep. Wool, with its open staple type, covers the body apart from those of the head, legs below the hocks and belly.

2.3 Production

Barki sheep produce lamb and wool. The milk production of ewes is low and is hardly sufficient for lamb suckling. It was reported (EI-Shahat, 1970) that Barki ewes produced an amount of 40.6 kg of milk, in a lactation period of 18 weeks, using the hand milking technique, with averages of 5.1 and 5.4 of fat and protein percent, respectively.

In a survey of some Barki flocks, in the north western coastal zone, ABOUL-NAGA et al (1985) reported that only 26% of flock owners milk their ewes, at 3 months post lambing, for 1.6 months. Ewes when milked are mostly once daily to give an average daily milk yield of 0.3 kg.

FAHMY et al (1969) reported (Table 1) different weights of Barki sheep from birth to the yearling age under semi-arid conditions.

TABLE 1.
Means (kg) and standard errors of weights, daily gains (g) and greasy fleece weight (kg) of Barki sheep raised under semi-arid conditions.

Birth	Weights		Daily gains		Weight Fleece (16 month)
	Weaning (120 days)	Yearling (365 days)	Pre-weaning	Post-weaning	
3.41	18.16	33.39	122.33	58.66	3.29
±	±	±	±	±	±
0.01	0.11	0.75	3.34	2.74	0.14

MOKHTAR et al (1991) studied growth pattern up to maturity (Table 2). They reported that mature size was 41.11 kg at 983 days (2.7 yr) for ewes and 54.38 kg at 1166 days (3.2 yr) for rams.

TABLE 2.
Least square means ± standard errors for weights (kg) of Barki sheep at different ages (weeks).

Factor	Birth	16 (wk)	32 (wk)	52wk	96(wk)	108 (wk)	144 (wk)	192(wk)
General								
mean	3,59±0.02	17.99±0.20	25.28±0.32	31.92±0.52	41.20±0.51	43.87±0.84	47.50±1.21	45.25±1.44

BEDIER et al (1992) showed that the highest production in terms of kilogram weaned per ewe lambing was for ewes ranging in weight from 46 to 50 kg. However, the biologically most efficient Barki ewes in the flock weighed 41-45 kg as judged by gram weaned per kg metabolic body weight of ewe joined ($\text{GW/kg}^{0.75}$) and gram weaned per kg metabolic body weight of ewe lambing ($\text{GW/kgL}^{0.75}$).

Wool produced in semi-arid conditions makes a relatively higher contribution to sheep production revenue than that in intensive systems.

Barki sheep has a white fleece of coarse wool type (Tables 3, 7) with varying proportions of kemp fibres, that are known to be objectionable to the wool industry. GUIRGIS and GALAI (1972) showed a highly significant correlation of kemp score with birth and weaning weights, indicating an association with body vigour. GUIRGIS et al (1982) reported heritability estimates of 0.16, 0.21 & 0.43 for staple length, greasy fleece weight and kemp score, respectively. They suggested selection for fleece weight, but with a ceiling on yearling weight to prevent the great increase in mature size which is not advisable under the prevailing semi-arid conditions, where natural pasture is available for only 3-4 months.

Barki wool is processed into low quality woolens and blended with other types of wool. However, through a simple grading system, taking into account staple length and kemp content (GUIRGIS,1973), Barki fleece wool was subdivided into three grades;11% fine, 58% medium and 31% strong, suggested for the use in knitted goods, sportswear and carpet manufacturing.



Barki ewe and lamb



Ossimi ram



Rahmani ram



Saidi ewes

TABLE 3.
Least square estimates ± standard errors of some wool traits of Barki sheep.

Classification	Fleec weight (kg)	Staple length (cm)	Fibre diameter (cm)	Clean yield (%)	Kemp score
Mean (1)	2.52±0.091	11.52±0.154	35.71±0.527	41.89	
(2)	2.21±0.103	10.95±0.366			1.56±0.086

(1) GUIRGIS, R.A. (1980) (2) GUIRGIS, R.A. et al (1982)

2.4 Reproduction

Different authors studied different reproductive traits of Barki sheep under desert conditions (Table 4). BEDIER (1987) reported that weight of ewe constituted a highly significant effect on all traits studied. The yearling weight of the ewe had a highly significant influence on total life-time number of kilograms weaned.

ABOUL-NAGA et al (1985) surveyed some Barki flocks in the North costal belt and reported that conception rate averaged 88 percent. Twinning percentage averaged 110 lambs/100 ewes lambing, indicating lower prolificacy compared to valley local breeds.

TABLE 4.
Least square means ± S.E. of some reproductive traits of Barki sheep raised under desert conditions

Classification	NC	ECEJ	ELEJ	LBEJ	LWEJ	KGWJ	TLB	TLW	TKW
Overall									
mean	1	1.34±0.07	0.67±5	0.63±5	0.59±5	11.08±1.03	3.07±0.18	2.54±0.17	39.9±3.3
	2	0.64±2.0	0.65±2	0.54±2	7.36±0.23				
	3	1.28±0.09	0.79±0.07	0.81±0.08					
	4	1.30±0.02	0.77±0.02	0.70±0.02	0.59±0.02	11.39±0.34			

(1) BEDIER, N.Z. (1987) (2) AHMED, A.M. (1990) (3) MABROUK, M.M.S. (1970) (4) BEDIER, N.Z. (1978).
NC.: Number of services per conception; ECEJ: Number of ewes conceived per ewe joined; ELEJ: Number of ewes lambed per ewe joined; LBEJ: Number of lambs born per ewe joined; LWEJ: Number of lambs weaned per ewe joined; KGWJ: Kilograms weaned per ewe joined; TLB: Total life-time number of lambs born; TLW: total life-time number of lambs weaned; TKW: Total life-time number of kilograms weaned.

3.0 ORIGINS AND PRESENT SITUATION

3.1 Ossimi sheep

The white coarse woolled Ossimi is the most widely distributed breed. It is raised mainly in the southern part of the Delta as well as in mid and upper Egypt, under intensive cropping systems. They graze stubble and follow cattle and buffaloes in green fodder fields.

Ossimi has a wider range of adaptability, which is more generally adapted to variable conditions in the valley, than that of the Barki, specifically adapted to desert conditions and that of the Rahmani, specifically adapted to the north delta conditions (ABOUL-NAGA, 1977).

3.2 The breed characteristics

Ossimi has a narrow, shallow body with relatively long legs. The breed has a white colour with brown or dark brown head and legs, the dark colour of which may extend to the neck and

shoulders with some spots on the body. The head has slightly convex profile with semipendulous medium size ears. Rams are often horned. Horns are of medium size with backward downward curvature. Ewes are often polled. Ossimi has a fat tail that is heavy and twisted, terminating abruptly in a thin end piece, the main part of which is round or oval in shape. The tail weighs 2.5-4 percent of live weight. The fleece is of the open type, coarse and often lustrous. The head, legs and belly are bare (GHANEM,1980).

3.3 Production

Average milk production of Ossimi ewes is 42-65 kg during the first 4 months, with averages of 6.3 and 16.9 percent fat and total solids, respectively (GHANEM,1980).

Production of lambs is recorded (Table 5). Males are fattened at about 8 months old, with an initial weight of about 30 kg, for 4-8 weeks gaining daily 90-110 g. Average carcass weight 15-17 kg with dressing percentage 43 to 48 percent. ABOUL-NAGA (1977) reported the performance of lambs from the three local breeds of sheep raised at 6 different locations in Egypt. He showed that Ossimi lambs performed best when raised in Middle Egypt. The performance of Rahmani lambs was better in the northern Delta, whereas Barki lambs performed better in the western desert coastal zone. When the three breeds were raised at the mid-Delta location (Table 6) breed differences were generally small and not statistically significant.

TABLE 5.
Lamb performance of the three local breeds of sheep raised under Nile-Valley conditions.

Classification (kg)	Birth wt (B) B-W	Daily gain (kg) (kg)	Weaning wt (W) B-Y	Daily gain (kg) (kg)	One year wt (Y)
Ossimi lambs					
Overall mean ±SE	2.95±0.02	0.147±0.001	20.72±0.11	0.094±0.001	37.52±0.23
Rahmani Lambs					
Overall mean ±SE	2.70±0.02	0.152±0.001	21.04±0.11	0.108±0.001	42.22±0.24
Barki lambs					
OverallL mean ±SE	2.73±0.03	0.148±0.002	20.60±0.02	0.097±0.001	38.55±0.49

Overall means are under Nile valley (Delta and upper Egypt) conditions for Ossimi and Rahmani. For Barki overall means represent both mid Delta and Western Desert (ABOUL-NAGA,1977).

TABLE (6).
Performance of lambs of the three local breeds kept at one location (mid-Delta).

Breed (kg)	Birth wt (B) B-W	Daily gain (kg) (kg)	Weaning wt (W) B-Y	Daily gain (kg) (kg)	One year wt (Y)
Ossimi	3.10±0.02	0.144±0.001	20.58±0.11	0.089±0.001	35.54±0.23
Rahmani	2.66±0.02	0.144±0.001	20.27±0.11	0.095±0.001	37.57±0.24
Barki	3.18±0.02	0.143±0.002	20.59±0.20	0.092±0.001	36.84±0.45

For wool production, (Table 7), the greasy fleece weight ranges from 1.4 to 2.8 kg with an average staple length of 12-20 cm and an average fibre length of 16-25 cm. The mean fibre diameter ranges from 31 to 37.8 um and kemp content of 2.9-4.0 percent (GHANEM,1980).

TABLE 7.
Average parameters of some local wool.

Breeds	Barki (1),(2)	Ossimi (3), (4)	Ossimi (5)	Rahmani (6), (7)	Saidi (8)
Greasy fleece					
weight (kg)	2.52±0.091	1.64±0.21	2.12±0.01	2.0	1.64±0.098
Clean fleece					
weight (kg)	1.06	1.39±0.18	1.59±0.04	1.42±0.084	
Staple length (cm)	11.52±0.154			8.3-18.2	16.45±0.273
Fibre length (cm)		17.6±1.54	14.81±0.38	8.5-17.0	20.98±0.204
Fibre diameter µ	35.71±0.527	32.4±1.51	34.71±0.42	293-36	34.08±1.61
Fibre type %					
Fine	62.90±0.006	94.1±2.25			85.97
Medullated	26.20±0.006	4.0±1.95			1023±0.977
Kemp	8.60±0.006	1.9±0.89		12-15	3.80±0.657
S/P ratio	3.20±0.06	4.98±1.98		3.8	3.69±0.22

(1) GUIRGIS, R.A. (1980) (2) GUIRGIS, R.A. (1973)
(3) EL-SHERBINY, A.A. et al (1979) (4) EL-SHERBINY, A.A. et al (1979)
(5) ASHMAWI, G.M. et al (1984)
(6) GHANEM, Y.S. (1980)
(7) ABD EL-AZIZ, N.M. and EL-MASRY, S.A. (1989).
(8) EI-HOMMOSI, F.F. (1973)

3.4 Reproduction

For the reproductive traits of Ossimi, ewes cycle all year-round, with an average age at puberty in the ewes of 8-10 months. Age of ewes at first lambing 15-22 months. twinning rate is 10-20 percent (GHANEM,1980). ABOUL-NAGA and ABOUL-ELA (1985) and MOKHTAR (1991) reported some reproductive traits.

TABLE 8.
Reproductive performance of Egyptian local breeds of sheep under the management system of one crop/year (c/year) and three crops/2 years (3c/2 year)

Classification	Conception rate	Lambs born/ewe joined	Lambs weaned/ewe joined	Lambs born/ewe lambded	Lambs weaned/ewe lambded	Kg weaned/ewe lambded
Ossimi (1)						
Overall mean ±SE						
C/year	0.83±0.01	0.95±0.01	0.83±0.01	1.14±0.01	0.99±0.01	22.8-±0.17
3C/2 year	0.73±0.01	0.88±0.01	0.71±0.01	1.22±0.01	0.99±0.01	18.8-±0.28
Rahmani (1)						
Overall mean ±SE						
c/year	0.86±0.01	1.06±0.01	0.93±0.01	1.23±0.01	1.08±0.01	24.6-±0.19
3C/2 year	0.77±0.01	1.01±0.02	0.80±0.02	1.33±0.02	1.10±0.02	22.7±0.28
Barki (1)						
Overall mean ±SE						
C/year	0.88±0.01	0.92±0.01	0.83±0.02	1.05±0.05	0.94±0.01	20.6-±0.26
3C/2 year	0.71±0.02	0.76±0.02	0.66±0.02	1.07±0.01	0.93±0.02	18.2±0.32
Saidi (2)						
Overall mean ± SE						
c/year	0.67±3	0.85±4	0.56±3	1.24±4	0.84±4	10.1±0.98

Overall means under Delta and valley conditions for Ossimi and Rahmani.
Overall means under both Delta and North Coastal zone of the Western desert for Barki. (1) ABOUL NAGA, A.M. and ABOUL ELA, M.B. (1985).
(2) MOKHTAR, M.M. (1991).

4.0 ORIGINS AND PRESENT SITUATION

4.1 Rahmani sheep

The breed is named after Rahmania in Beheira governorate in the north of the Nile Delta. It is distributed in the north and middle of the Nile Delta, where the weather is mainly Mediterranean with an annual rainfall of 60-100 mm. Sheep feed on crop residues and on Berseem after cattle during winter.

4.2 The breed characteristics

The largest of the Egyptian breeds, brown in colour which fades with age to light tan and that there are rarely white spots on the head or the tail end. Rams have large horns but ewes are polled. The head often has a Roman nose with small ears that are quite often vestigial. The breed has a large tail, with a broad fat base leading abruptly to a sigmoid part ending in a fine spiral, that represents about 4 percent of live weight. The fleece is long-stapled and that the head, legs below knees and hocks are bare. The belly may have very short wool. Rams weight 55-70 kg and ewes 45-55 kg (GHANEM,1980).

4.3 Production

Milk production ranges from 45 to 65 kg during 3-4 months, with percentages of 6.6-7.8 and 17.2-18.0 of fat and total solids, respectively.

Production of lambs is reported (Table 5). Fattening of males is carried out at 8 months of age at an initial weight of 22 kg for 20 weeks to an average final weight of 45 kg. Dressing percentage ranges from 42 to 47.5 percent (GHANEM, 1980). Rahmani wool (Table 7) is of the coarse type.

4.4 Reproduction

Rahmani ewes cycle as year-round. Ewes reach puberty at 8-12 months and that the age at first lambing ranges from 15 to 22 months. Rahmani (Table 8) has a relatively high twinning rate of 12-40 percent, with proper feeding, indicating its potentiality for intensive lamb production (GHANEM,1980).

5.0 ORIGINS AND PRESENT SITUATION

5.1 Saidi sheep

The breed is found in upper Egypt south of Assiut and is considered the oldest of the Egyptian breeds.

5.2 The breed characteristics

Saidi sheep are mostly dark brown in colour, some individuals have cream white colour or a mixture of the two colours. The fleece is of the open long stapled coarse wool type. Belly, legs and also sometimes the forehead are covered with wool. Rams often have horns whereas ewes are usually polled. The sheep have Roman nose and a dewlap under the neck. The ears, hanging down, are medium to large. The tail is long, thin and covered with wool. (GHANEM,1980).

5.3 Production

Milk production averages 260 g/day in the first 12 weeks, fat 7.6 percent, solids not fat 10.9 percent and protein 5.8 percent (ABD EL-HAFIZ and EL-HOMMOSI,1976).

Averages of birth weight 3.4 kg, at weaning (16 weeks) 15-17 kg, dressing percentage 53 to 56 percent, daily gain of 67 to 94 g/day with 28 kg initial weight.

Weight of rams 65 kg and that of ewes 40 kg, (GHANEM,1980).

Saidi wool (Table 7) is locally processed into some famous rugs and blankets.

5.4 Reproduction

Ewes cycle all year-round. Age of ewe at first conception 359.6 ± 8.9 days (EL-HOMMOSI and ABD EL-HAFIZ,1982). MOKHTAR (1991) concluded that though Saidi ewes showed a low productive performance, due to low conception rate of ewes and a slow growth rate of lambs, ewes had a reasonable twinning rate. (24 percent; range 17-36 percent).

6.0 CONCLUSION

The low productivity encountered of the majority of local breeds in Arab countries was reported by YOUNIS (1977). However, ewes of Egyptian breeds have good ability to rear their lambs and good lamb livability (ABOUL-NAGA and ABOUL-ELA,1985). YOUNIS (1977) recommended different items for increasing fertility of local breeds which include possibilities of early breeding, reducing barrenness, increasing twinning and increasing frequency of lambing.

In the Ministry of Agriculture (ABOUL-NAGA and ABOUL-ELA,1985) a trial was started in 1970, to utilize the potentiality of local breeds to breed at different times of the year, for producing a crop of lambs each 8 months. Annual lambs born per ewe joined was increased by 32.5, 35 and 21.6 percent for Ossimi, Rahmani and Barki sheep, respectively, in comparison with the system of one crop/year. The accelerated lambing induced an increase in production costs of 20 percent, hence it was recommended for Ossimi and Rahmani valley and delta breeds and not for Barki desert breed.

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