Newly adopted dromedary husbandry systems and breeding practices in the Algerian northern Sahara

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Summary

Background: Traditional nomadic livestock farmers have adopted new lifestyles, management methods and husbandry practices to improve their livestock income and enhance the value of camel products, whose benefits are increasingly being recognized worldwide. Driven by a rising demand for camel products among urban consumers, these changes include a strong tendency for nomadic communities to settle near urban centers, the temporary stationing of part of the camel herd in urban and peri-urban areas, and the intensification of production in these areas. *Aims*: This paper aims to present the newly adopted dromedary husbandry practices, and discuss the products and services provided by dromedaries. *Methods*: Between September 2020 and March 2021, formal and informal interviews were carried out in three locations in the Algerian northern Sahara with 11 camel breeders, who held a total of 537 dromedaries (average 48.8 ± 4.36). *Results*: The study identified three types of dromedary farming systems: 70% of the farms were peri-urban, semi-intensive dairy farms established to meet the rising demand for camel milk, 23% were settled, intensive, peri-urban feedlot farms producing all categories of fattened dromedaries, especially young males, and 7% were settled, urban, and peri-urban dromedary racing farms dedicated to breeding dromedaries for racing and riding during local festivals, activities anchored in the traditions of the native population. The surveyed farms primarily generated income from the sale of milk and live animals, with manure and wool also contributing to their earnings. The food resources used for dromedaries were natural pastures, crop residues and harvest residues. *Conclusion*: The intensification of dromedary breeding appears essential to ensure the sustainability of this animal resource as it can improve reproductive potential, milk production, and the availability of young calves for fattening farms. The changes in practices identified in this study are enabling breeders, who are managing their livestock in guarded and semi-guarded camel production systems, to increase their income.

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■ INTRODUCTION

Dromedaries (*Camelus dromedarius*) are multipurpose animals that can be found across arid and semi-arid regions of the Middle East, Africa, Southwest Asia and Australia (Moretti, 2008). Their exceptional anatomical and physiological characteristics enable them to live, work, transport, reproduce, and provide meat, milk, wool and manure at a relatively low cost and in extremely harsh, hot, and arid environments. They can even survive droughts when other domestic livestock often do not (Yagil, 1982; Yousif and Babiker, 1989; Kadim et al., 2008; Abdalmula et al., 2018; Bedda et al., 2019).

Traditionally, pastoralist camel breeders relied on extensive nomadic livestock systems. They considered camel breeding a crucial activity, as dromedaries were essential for their survival and to diversify their sources of income. However, the effect of climate change on arid and semi-arid environments has caused profound changes in camel population dynamics and livestock production systems, particularly those reliant on pastoralism. These changes are part of an adaptation strategy to cope with the severity of recurrent droughts that have induced a decline in forage quantity and quality. In addition,

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increasing public awareness has contributed to growing urban demand for animal protein, notably camel products (milk and meat), which is leading to changes in the management of farming systems, with a trend to intensification of the production (Faye and al., 2012; Yosef and al., 2013; Wako and al., 2017).

Camel breeders are currently changing their practices, both in response to this rise in demand for camel products, and to increase the sustainability and productivity of traditional nomadic livestock practices. The present study was initiated to collect the information that is currently available on the new camel production systems and practices that have been adopted in southeast Algeria. There is growing interest in the camel sector, especially as the number of camel farms increases and as the dynamics of the activity lead to differences in terms of the size and composition of herds, the range of products available (meat, milk, wool), and management techniques.

■ MATERIAL AND METHODS

Study area

The study was conducted in 11 smallholder camel farms in the wilaya of Touggourt, a province located about 660 km southeast of Algiers (the capital city of Algeria). The wilaya was created in 2019 and formalized in 2021 (Figure 1), and is delimited by the wilayates of El M'Ghairto in the north, El Oued to the east and Ouargla to the west and south. Touggourt's urban area includes 13 communes, while its total area covers 17 428 km².

Touggourt has a hot desert climate (according to Köppen climate classification *BWh*), with long, extremely hot summers and short, cold winters. The average temperature of the warmest month (July) reaches a maximum of nearly 45°C, that of the coldest month (January) is 11°C. Characterized by drought, the average annual rainfall is around 55 mm. Rainfall is irregular during the year, but summers are especially dry.

Sample collection

Three rural areas, El-Hadjira, El-Allia and Blidet Amor, were chosen based the presence of dromedary breeders, regardless of the size, composition or purpose of their herds. These areas are inhabited by a nomadic population renowned for their camel breeding. In these regions, farmers depend primarily on sheep breeding for their livelihoods. The investigations were carried out with breeders owning smallholder farms where camels are kept in guarded and semi-guarded livestock systems.

Field investigation

The field investigations focused on 11 camel smallholders, taking into account the availability of camel drivers on site and access to reliable information. The investigations were carried out between September 2020 and March 2021, coinciding with the camel mating and calving seasons, using a socio-economic survey with a structured questionnaire. Individual interviews were conducted, followed up by a group meeting and direct observations of farm practices. The questions focused on farm animal management practices and on productive and reproductive performances.

Statistical analysis

The questionnaire gathered quantitative and qualitative data that was recorded and categorized to create tables presenting the results. The quantitative variables used were herd size, number of adult females per breeding male, and calving rate, while the qualitative variables were ownership of herds, acquisition of herds, and management practices (feeding animals, marketing products).

■ RESULTS AND DISCUSSION

Camel breeders surveyed

Breeding dromedaries is traditionally a male activity in the study area, where dromedaries are individually owned and are either inherited (82%) or purchased (18%). Within the culture and traditions of breeders, dromedaries are highly appreciated as prestigious social livestock. Used when needed to meet their owners' financial requirements, dromedaries represent a symbol of wealth; as such, breeders take pride in the number of animals they own.

Breeding dromedaries serves as a secondary source of income for the farmers interviewed. Their main professional activities include

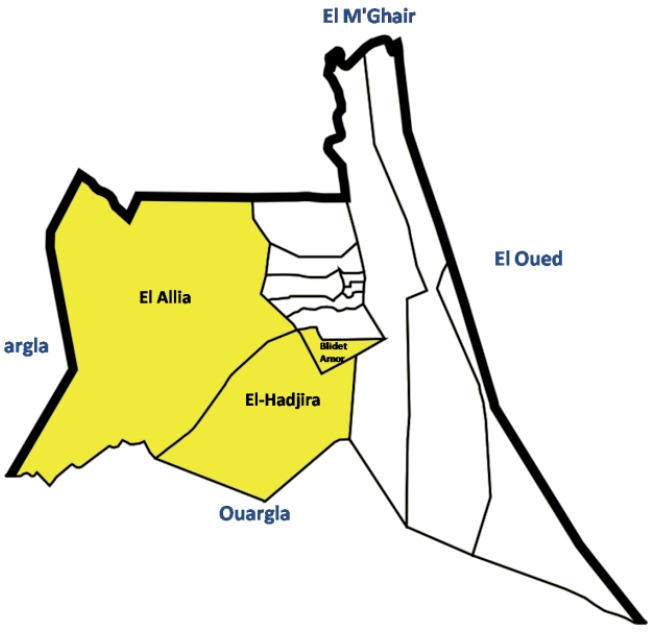

Figure 1: Study area /// *Localisation de la zone d'étude*

small ruminant breeding (18%), mixed crop-livestock production (18%), crop production (37%) and working in the local administration (27%). Their main activities provide the dromedary owners a regular, permanent income to cover their household needs.

The average age of the dromedary owners interviewed was 49 years, ranging from 25 to 85 years. All of the breeders have been rearing dromedaries for over 10 years, so they have extensive experience in herding dromedaries, and rich indigenous knowledge about traditional camel health care, reproductive performance and camel production potential. They had gradually acquired proficiency and knowledge through observation, training, and practice. Information on the breeders interviewed is summarized in Table I.

Herd structure and size

According to the wilaya's agricultural services, the total population of dromedaries in the study area was estimated at 6,577 heads. The dromedary herds are managed in extensive systems and are scattered over a wide area as they frequently need to be moved to graze and find water. However, due to a growing market demand for dromedary products driven by increasing recognition of their value and health benefits, there is a trend towards raising some dromedaries on smallholder farms in smaller herds while the rest are dispersed in pastoral areas.

The dromedary farms surveyed have herd sizes ranging from 21 to 89 heads. The overall total consisted of 537 heads, 67% of which were she-camels. The structure of the herds was highly variable (Table II).

The predominance of females in the herds reflected the owners' focus on increasing the number of animals in their possession through in-herd reproduction. In fact, the majority of cameleers do not sell their she-camels; these are kept for the renewal and reconstitution of their herds. Moreover, the Algerian authorities prohibit the slaughter of she-camels under the age of 15 years, except for those deemed unproductive. Our results regarding the predominance of females in the camel herds resembled those reported in Ouargla by Bedda (2020), in El Oued by Harek et al. (2022), and in Ethiopia by Mirkena et al. (2018).

She-camels also are kept for their milk production, which is commonly known in arid and semi-arid areas as 'white gold'. They can produce a large quantity of milk even when exposed to heat stress and water deprivation (Bekele et al., 2011). Due to the increasing interest in camel's milk as a cure for certain diseases, the sale price of camel milk is high. In most countries where camel milk is produced, it is sold at a price that is two to three times higher, or more, than that of cow milk (Faye et al., 2014; Konuspayeva et al., 2022). Yosef et al. (2013) stated that camels are important sources of cash for Somali pastoralists from the sale of milk, milk products, and surplus male and unproductive camels.

Table I: Socio-professional information about investigated camel breeders /// *Informations socioprofessionnelles sur les éleveurs de dromadaires enquêtés*

Farm ID	Locality	Age of breeder(years old)	Main profession	Acquisition of herds
1	Blidet Amor	44	Veterinarian	purchase
2		36	Crop production farmer	inheritance
3		30	Small ruminants' breeder	inheritance
4		52	Teacher	purchase
5		40	Crop production farmer	inheritance
6	El-Hadjira	85	Small ruminants breeder	inheritance
7		25	Administrative assistant	inheritance
8	El-Allia	45	Mixed crop-livestock farmer	inheritance
9		65	Crop production farmer	inheritance
10		60	Mixed crop-livestock farmer	inheritance
11		57	Crop production farmer	inheritance

Table II: Structural diversity and performance of studied camel herds /// *Diversité structurelle et performance des troupeaux de dromadaires étudiés*

Farm ID	Total heads/herd	Proportion of she-camels	Proportion of calves	Proportion of males	Location
1	65	83.07 %	15.38 %	1.53 %	peri-urban
2	60	65 %	33.33 %	1.66 %	peri-urban
3	50	68 %	30 %	2 %	peri-urban
4	55	52.72 %	45.45 %	1.81 %	peri-urban
5	32	62.5 %	31.25 %	6.25 %	peri-urban
6	26	50 %	23.07 %	26.92 %	urban and peri-urban
7	41	48.78 %	48.78 %	2.43 %	peri-urban
8	21	57.14 %	38.09 %	4.76 %	peri-urban
9	27	51.85 %	44.44 %	3.70 %	peri-urban
10	89	75.28 %	22.47 %	2.24 %	urban and peri-urban
11	71	84.50 %	14.08 %	1.40 %	peri-urban

The breeders interviewed mentioned that dromedary calves were separated from their mothers 21 days after birth and kept in enclosures nearby. They were allowed to suckle only during milking time to stimulate milk let down. Once weaned, female calves were kept, while male calves were either kept or sold at a young age (with or without fattening). A similar observation was reported by Faye (2015) and Mirkena et al. (2018) that male camels were usually sold early as pack animals or for slaughter.

In the region studied, only a few males (4%) are kept by breeders, mostly for mating and racing, or to be slaughtered for meat before the age of three. In each herd studied, there was one active tethered dromedary bull for 25±6 females (19 males for 362 she-camels), practicing 3 to 6 mountings par day. The reproductive males were selected based on their body conformation, health condition and reproductive performance. The breeders surveyed frequently hand mate females. Due to their professional experience and indigenous knowledge, breeders were able to detect pregnancy within two weeks after mating. After mating, the pregnant she-camels were released into pastoral areas far from the settlement area to graze freely alongside the dry livestock (non-productive females, males, and growing calves).

Breeders declared that calving occurred between September and March, and that the interval between two successive births was about two years.

Diversity of dromedary farming systems

Established to satisfy the local demand for camel products in nearby cities, the camel farms surveyed were based on the settlement of a small number of dromedaries, for a period of time, depending on the orientation of the herd. The animals were kept in groups in enclosed spaces with sand-bedded areas, and were subject to intensive and semi-intensive feeding practices using different types of feed. They were located in urban and peri-urban areas within the surveyed region.

Three types of dromedary farming systems were recorded in the studied region, classified by their purpose and with varying levels of profitability between different farms. These were peri-urban semi-intensive dromedary dairy farms (70% of farms), settled intensive peri-urban feedlot farms (23%), and settled urban and peri-urban dromedary racing farms (7%).

Peri-urban semi-intensive dromedary dairy farms

Dromedary dairy systems commonly have more than one pen for housing animals. The dairy farms were mostly divided into three breeding pens, one for housing lactating she-camels, another for calves, and a third for mature receptive females, while the dromedary bull was tethered. During the lactation period, dairy she-camels were stabled on the outskirts of the surveyed area, along national road N°3 on the El Alia-Touggourt axis leading into urban areas. This allows for a better presentation of raw dromedary milk to passing customers, and is closer to nearby urban markets.

Reared under semi-intensive management, the composition of the animals' feed included a combination of limited grazing on natural vegetation around the settlement area, with the provision of supplementary feed. The herds were grazed during the day on communal rangelands located within a 10-kilometer radius around the settlement area, then kept at night in protected homesteads made with wire fences. After grazing, animals were supplemented with a formulated concentrate ration made of locally available feeds and were given free access to water. Breeders suggested that she-camels and mature receptive females had to be supplemented because feed supplements have a positive effect on the lactation curve of dairy she-camels and the fertility of reproductive herds.

Dromedary's milk represented the most important commodity exploited in the surveyed region, mainly due to its nutritional properties and therapeutic potential. Produced under the traditional pastoral system, the sale of camel milk was considered taboo a few decades ago. Available only in the most remote regions, the product was long excluded from the market. The main part of a dromedary's milk production consequently was consumed by the owner's family, or offered as a gesture to their guests (Faye and Corniaux, 2024). One of the major changes in camel milk production in recent decades has been the emergence of intensive dairy farming systems (Konuspayeva et al., 2022). The development of dairy production systems is related to the increasing demand in dromedary milk, used as a treatment for a range of diseases by urban consumers.

A daily yield of 4 liters of raw dromedary milk per female, over a long lactation period (184 to over 450 days), was considered very acceptable by the cameleers surveyed, in comparison to the average milk yield of 2 liters per day from Maghrebi she-camels on traditional extensive farms (El-Hatmi et al., 2004). Under more favorable conditions, milk yield is even greater; it can range between 6 to 12 liters/day (Hammadi et al., 2006; Ayadi et al., 2009; Abdalla et al., 2015). The milk yield of Saudi Arabian camels can be as high as 5,310 liters in 6–19 months under intensive conditions (Musaad et al., 2013), which indicates that lactating she-camels can produce impressive amounts of milk under favorable conditions.

She-camels were milked twice a day, in the morning before going to graze, and in the evening on their return to the settlement area. The product was sold directly, in situ, from the udder to the consumer, and in urban shops for 600 dinars/liter (4.11 euros/liter). Laameche (2013) reported that the feed cost of producing one liter of camel milk was only about 76.7 dinars/liter (0.53 Euros/ liter).

The health benefits of camel milk may enhance the product's marketing value despite its price being twelve times higher than that of subsidized raw cow's milk (50 dinars/0.35 euro). Camel milk is reported to be used in the treatment of a range of diseases, such as certain cancers and diabetes (Magjeed, 2005; Agrawal et al., 2007; Quan et al., 2008), and is consumed by children who are allergic to bovine milk (El-Agamy et al., 2009).

Dromedary milk in semi-intensive production system is therefore an economic opportunity for breeders. A she-camel could generate 441,600 dinars (3,023.93 euro) to 1,096,800 dinars (7,510.53 euro) in a lactation period ranging between 184 and 457 days. For the breeders surveyed, the sale of camel milk covers over 60% of their total herd and household needs.

Settled intensive peri-urban feedlot farms

Raised under a guarded intensive production system, animals are kept all year in housed stables to manage their feeding needs. A settled dromedary feedlot farm supplies young males to satisfy local butchers' demand for dromedary meat. After being sold, weaned male calves are restricted to a housing system and fed a mixture of concentrate, forage, grains, and various crop residues. This combination constitutes over 95% of their diet, allowing calves to grow and gain weight as quickly as possible and maximizing feed efficiency.

After the fattening period, ranging between 3 to 6 months, fattened dromedaries are sold for slaughter at between 10 to 24 months of age, depending on the grade of meat they are being raised for: *Hwar* (non-weaned calve), *Hachi* (weaned calve less than 1 year old) or *Makhloul* (more than 1 year old). The respondents declared that young slaughtered animals provide the best meat, one that is tender, easy to cook, and with less inter and intramuscular fat. A similar result was found by Suliman et al. (2020), who reported that camel meat is considered healthier than that of other animals due to its lower fat and cholesterol content, as well

as being a good source of minerals, vitamins, bioactive compounds, and essential fatty acids.

The cost of a live dromedary depends on the age and the carcass weight of the animal, ranging between 60,000 (410.86 euro), 80,000 (547.74 euro) and 120,000 dinars (821.61 euro), respectively for *Hwar*, *Hachi* and *Makhloul* dromedaries. The meat of young dromedaries is sold for 1,200 dinars (8.22 euros) per kilo, while the meat of older dromedaries, considered tough and less in demand by consumers, is sold for 900 dinars (6.16 euro) per kilo. Meat without bones is sold for 1,800 dinars (12.32 euros) per kilo, and was more expensive than meat with bone and fat. Consumers primarily purchase meat with bones due to its affordable price.

In Algeria, camel meat represents 3% of the country's red meat production. The development of settled feedlot farms was essentially due to the income generated by this type of farming management. The demand for camel meat has increased due to health reasons, as it has less fat, less cholesterol and relatively high poly unsaturated fatty acid content compared with other animal meats (Dawood and Alkanhal, 1995; Kadim et al., 2013; Abdelhadi et al., 2015) and higher protein quality (Raiymbek et al., 2015).

Settled urban and peri-urban dromedary racing farms

Alongside their productive and reproductive functions, dromedary bulls are also used as tourist attractions for racing and riding during local festival and folklore events. Dromedaries used for racing were traditionally kept in a sedentary manner, with owners keeping small herds (1 to 4 heads) at their home residence or on farms situated on the outskirts of cities. Reviving this local traditional heritage, dromedaries selected for racing and riding are chosen based on sex, age and body conformation.

In the study region, camel racing is a popular social practice and a festive heritage, particularly in El-Hedjira, where dromedaries are trained from as early as 2 years of age, as their muscles and bones are not yet fully developed. The white ecotype, which belongs to the Targui population, was described as a good riding animal.

A highly nutritious feed is offered to racing dromedaries twice daily, in the early hours of sunrise and at sunset. The feed rations are divided into a basal ration and a complementary ration. The usual manufactured dromedary feed consists of 4 kg/head of a forage mixture made up of Alfalfa (*Medicago sativa*) and wheat straw, and 3 kg/head of a concentrate mixture based on wheat bran and subsidized grain barley. The animals also are given free access to permanent, clean water. This ration is designed to ensure optimum body growth and bone formation while meeting the high energy requirements of racing and training animals. On the other hand, Abazi et al. (2023) reported that the diet of Meharis camels in Ouargla region is composed of fresh alfalfa (*Medicago sativa*), dry bread, wheat bran, wheat straw, subsidized barley, beets, carrots, turnip, orange, olive oil and goat's milk. This suggests that feeding management depends on the financial situation of the owners. Dromedary racing takes place during the cold months between October and April.

The sale of manure and wool also provides extra income. Dromedary wool, commonly known as *oubar*, is an important camel product that fetches a high market price (12,000 dinars, or 82.16 euros, per kg) in southern Algerian wilayas. The burnous (long cloaks) made of *oubar* are highly appreciated and expensive thanks to their excellent heat insulation and water resistance, especially when made with the hair of young dromedaries. According to Ghribi and Rabia (2023), the *oubar* from young dromedaries was prized more than that of adults.

The main expenses associated with dromedary breeding in the study area were for feeding and veterinary services (purchase of veterinary drugs, which is subsidized by the government).

■ CONCLUSION

To maintain the productivity of their herds, reduce costs, and ensure sustainable breeding, dromedary breeders have decided to modify their production practices. This decision also was prompted by the growing demand for camel products, particularly meat and milk, in nearby urban markets. The recent establishment of intensive and semi-intensive dromedary breeding systems in the Northern Algerian Sahara has improved the production, growth and reproductive performance of dromedaries.

New husbandry practices have had a positive impact on the household economy of herders. One dairy she-camel, producing 4 liters of milk per day, can provide a daily income of 2,400 dinars (16.43 euro). The lactation period of the dromedaries is longer than any other dairy animal kept under the same harsh environmental conditions, and the cost of the feed needed to produce one liter of camel milk is about 76.7 dinars (0.53 euro). Moreover, the commercial orientation of the new breeding systems provides employment opportunities and contributes about 45 to 60% of the household income of breeders, with the average monthly per capita income at about 34,000 dinars (232.79 euro).

Although there is potential for the commercialization of camel products, the value chains are not formally structured and lack technical, commercial and institutional support. At the technical level, there is a shortage of veterinarians with expertise in camel diseases, and there is no veterinary health care program focused on the diet and nutrient requirements for different types of camel breeding. The marketing of camel milk also is haphazard; the milk is packaged in plastic bottles by the producers themselves, usually without any agreement or inspection of the camel milk. The continuity of the activity is related to the presence of a stable market for camel products.

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Conflicts of interest

The authors declare that there is no conflict of interest.

Author contributions

HB: data collection and interpretation; writing – original draft; writing – review and editing; IH, BB, YB and AA: critical review of the manuscript.

Ethics approval and informed consent

All respondents were informed of the objectives of the study and of the need for anonymity during data collection. This work was not the subject of a specific request to an ethics committee.

Data Availability

The data were not deposited in an official repository. The data that support the study findings are available from the authors upon request.

Declaration of Generative AI in the writing process

The authors did not use any artificial intelligence-assisted technologies in the writing process.

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Résumé

Bedda H., Hamdi I., Babelhadj B., Benbessisse Y., Adamou A.
Nouveaux systèmes et pratiques d'élevage de dromadaires adoptés au Sahara septentrional algérien

Contexte : Les éleveurs traditionnellement nomades ont adopté de nouveaux modes de vie, de nouvelles méthodes de gestion et de nouvelles pratiques d'élevage pour améliorer leurs revenus et accroître la valeur des produits camelins, dont les avantages sont de plus en plus reconnus dans le monde entier. Motivés par une demande croissante en produits camelins de la part de consommateurs urbains, ces changements ont inclus l'installation de communautés nomades à proximité des centres urbains, le stationnement temporaire d'une partie du troupeau de dromadaires dans les zones urbaines et périurbaines, et l'intensification de la production dans ces zones. *Objectifs* : L'objectif de cet article était de présenter les nouvelles pratiques d'élevage du dromadaire en relation avec les produits qu'il fournit et les services qu'il offre. *Méthodes* : Des entretiens formels et informels ont été menés entre septembre 2020 et mars 2021 avec 11 éleveurs de dromadaires dans trois localités du Sahara septentrional algérien, détenant un total de 537 dromadaires (moyenne 48,8 ± 4,36). *Résultats* : L'étude a identifié trois types de systèmes d'élevage de dromadaires : 70 % des exploitations étaient des fermes laitières périurbaines semi-intensives établies pour répondre à la demande croissante en lait de chamelle, 23 % étaient des fermes d'engraissement sédentaires, intensives, périurbaines produisant toutes catégories de dromadaires engraissés, en particulier les jeunes mâles, et 7 % étaient des fermes sédentaires, urbaines et périurbaines dédiées à l'élevage de dromadaires pour les courses et l'activité de bât lors des festivals locaux, des activités ancrées dans les traditions de la population autochtone. Les exploitations enquêtées tirent principalement leurs revenus de la vente de lait et d'animaux sur pied, le fumier et la laine contribuant également à leurs revenus. Les ressources alimentaires utilisées pour les dromadaires étaient les pâturages naturels, les résidus de culture et les résidus de récolte. *Conclusion* : L'intensification de l'élevage du dromadaire semble indispensable pour assurer la durabilité de cette ressource animale, en améliorant son potentiel reproductif, sa production laitière et la disponibilité de jeunes veaux pour les élevages d'engraissement. Les changements de pratiques identifiés dans cette étude permettent aux éleveurs, qui gèrent leur bétail dans des systèmes de production camelin gardés et semi-gardés, d'augmenter leurs revenus.

Mots-clés : Camélidés, lait de chamelle, viande cameline, filière élevage, viabilité économique, Algérie

Resumen

Bedda H., Hamdi I., Babelhadj B., Benbessisse Y., Adamou A.
Nuevos sistemas y prácticas de cría de dromedarios aplicados en el Sáhara septentrional argelino

Contexto: Los ganaderos tradicionalmente nómadas han adoptado nuevas formas de vida, nuevos métodos de gestión y nuevas prácticas de cría para mejorar sus ingresos y aumentar el valor de los productos procedentes de los camélidos, cuyos beneficios se reconocen cada vez más en todo el mundo. Estos cambios, motivados por una creciente demanda de productos de dromedario por parte de los consumidores urbanos, incluyen la instalación de comunidades nómadas cerca de los centros urbanos; el estacionamiento temporal de una parte del rebaño de dromedarios en las zonas urbanas y periurbanas, y la intensificación de la producción en estas zonas. *Objetivos*: El objetivo de este artículo es presentar las nuevas prácticas de cría del dromedario en relación con los productos que proporciona y los servicios que ofrece. *Métodos*: Se llevaron a cabo entrevistas formales e informales entre septiembre de 2020 y marzo de 2021 a once criadores de dromedarios en tres localidades del Sáhara septentrional argelino, que poseían un total de 537 dromedarios (media de 48,8 ± 4,36). *Resultados*: El estudio identificó tres tipos de sistemas de cría de dromedario: el 70 % de las explotaciones eran granjas lecheras periurbanas semiintensivas establecidas para responder a la creciente demanda de leche de camella; el 23 % eran granjas de engorde sedentarias, intensivas y periurbanas de todas las categorías de dromedarios, en particular machos jóvenes, y el 7 % eran granjas sedentarias, urbanas y periurbanas dedicadas a la cría de dromedarios para carreras y actividad con albarda durante los festivales locales (actividades arraigadas en las tradiciones de la población autóctona). Las explotaciones encuestadas obtenían principalmente los ingresos de la venta de leche y de los animales en pie; el estiércol y la lana contribuían asimismo a sus ganancias. Los recursos alimenticios utilizados por los dromedarios eran los pastos naturales, los residuos de cultivos y los residuos de recolección. *Conclusión*: La intensificación de la cría del dromedario parece indispensable para garantizar la durabilidad de este recurso animal, mejorando su potencial reproductivo, su producción lechera y la disponibilidad de ejemplares jóvenes para las granjas de engorde. Los cambios en las prácticas identificados en este estudio están permitiendo a los ganaderos, que gestionan su ganado en sistemas de producción de camellos vigilados y semivigilados, aumentar sus ingresos.

Palabras clave: Camélido, leche de camella, carne de camello, systema pecuario, viabilidad económica, Argelia