Diagnosis and Improvement Prospects of Cattle Breeding in the Ouarsenis Region (Tissemsilt, Algeria)

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Abstract

The aim the present work is the general diagnosis of cattle farming from the perspective of the breeder, the operation and management practices adopted, constraints, the prospects for improvements and development of this activity. The Thirty cattle farms visited are spread across seven (07) districts and ten (10) municipalities located in the Tissemsilt province such as: Tissemsilt, Khemisti, Ammari, Theniet El Had, Ouled Bessam, Laayoun, Bordj Emir Abdelkader, Malaab ,Lardjem and Beni Lahcen. The sample reached farms that differ in their geographical structures steppe, highlands, forested, and mountainous to ensure a diversity of breeding practices (reproduction, quality of breeders, feeding, type of production, breeds used...) and to gather constraints and study the prospects of cattle farming in the Tissemsilt region. Cattle breeding in the wilaya of Tissemsilt presents a significant diversity, which is mainly due to the breeding methods followed, the food resources, the structure of the farms, the size of the herd, as well as the reproductive management followed and type of production targeted. The average age of the surveyed breeders is 49 years and the majority these breeders rely on family labor (66%).The average experience of farmers is 22 years, with 52% having less than 20 years. The breeding method is oriented towards extensive farming, with 48% due to the geographical characteristics of the region. The production of the surveyed farms is mixed (meat - milk) at 80% with the absence of milking machines means that 64% of the milking is done manually. For the feeding of cattle, we found the existence of two periods; the first period is the grazing period during the spring and summer, the second period is the stabling period from autumn to winter. The reproduction is based on natural mating (57%). Finally ,we can conclude from our investigation that cattle breeding at the wilaya of Tissemsilt can be developed and progressed if there is a combination of all efforts of breeders and state.

Keywords : Tissemsilt, cattle farming, general diagnosis, management practices, breeding method, reproduction, feeding, breeds.

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1. Introduction

In Algeria, Ruminant's farming plays an important role in the Algerian agricultural economy; however, it faces a multitude of constraints that hinder its development. It contributes to meeting

national needs for animal protein as well as creating jobs in rural areas [1, 2, 3]. The cattle population remains low, with 1.7 million heads, representing only 6% of the total livestock, of which 58% are dairy cows). The evolution of cattle farming in Algeria from 2017 (1,843,930 heads) to 2022 (1,738,340 heads) [4]. Regarding the structure of the cattle herd, it consists of 54% dairy cows, 22% young females, 14% young males, and 10% breeding bulls [5]. Cattle farming faces a multitude of constraints that primarily depend on the environment, animal resources, and state policy since independence [6].The issue is therefore to manage and develop cattle farming in Algeria to best supply the population with animal products and provide a steady income for farmers .Thus, the development of dairy and meat production in Algeria must be approached with the perspective of sustainable agricultural development [3]. Cattle breeding specialization in the Algerian context is rarely practiced, and mixed production (milk-meat) dominates the production system due to this diversity of production systems. With the exception of fattening farms that only focus on finishing young bulls. For the distribution of livestock, cattle are exploited in favorable regions (plains, tellian region) but also in areas lacking in rainfall and food resources (high plains, foothills, and mountains) [7]. In terms of location, the cattle population is found in the coastal plains as well as in the high plateaus, particularly in the Eastern region, which accounts for 53% of the total, while the Central and Western regions together only make up 47% of the cattle population. According to the data corresponding to the latest recording date by [4], the national livestock was estimated in 2022 to consist of 31,192,020 heads of sheep and 1,738,340 heads of cattle, distributed across the territory. Cattle farming holds an important place in the Tissemsilt province, with a cattle population of 19,400 heads in 2019, representing 4% of the total livestock, of which dairy cattle account for 51%. However, this activity faces several technical and structural issues that affect the performance and profitability of the farms. Few research studies have been conducted in the Tissemsilt province on the performance of cattle farming.The aim of our work is the general diagnosis of cattle farming from the perspective of the breeder, the operation and management practices adopted, constraints; the prospects for improvements and development of this activity.

2. Materials and methods

2.1. The methodology

The choice of locations was made based on the accessibility of the farms and the availability of the breeders. Contacts with breeders have been established in collaboration with private veterinarians. The survey covered thirty livestock farms in the Tissemsilt province; a questionnaire was developed targeting breeders and private practitioners to gather as much data as possible, identify the issues hindering the development of this activity. The questions and observations primarily focused on: the breeders, the livestock buildings, the herd (size and breed), breeding methods, feed (ration and type of feeding), reproduction (artificial insemination), production (dairy, meat), sanitary hygiene (vaccination, treatment), and the diseases encountered.

2.2. Characteristics of cattle farms

For this survey, 30 questionnaires were selected, and the farms visited are spread across seven (07) districts and ten (10) municipalities located in the Tissemsilt province such as: Tissemsilt, Khemisti, Ammari, Theniet El Had, Ouled Bessam, Laayoun, Bordj Emir Abdelkader, Malaab ,Lardjem and Beni Lahcen . The sample reached farms that differ in their geographical structures

steppe, high plateaus, forested, and mountainous to ensure a diversity of practices (breeding, reproduction, quality of breeders, feeding, type of production, breeds used...) and to gather constraints and study the prospects of cattle farming in the Tissemsilt region.

2.3. Descriptive parameters of the surveyed cattle farms

The first part of our questionnaire focused on the main actor (the breeder) in livestock farming and the production chain, as they have a direct or indirect impact on the productivity of livestock farming, either positively or negatively. Therefore, the study was based on the following criteria: legal status, age of the breeders, education level of the operators, their experience in the field of livestock farming, training and type of training, and type of labor, breeding buildings, breeding method, cattle numbers and breeds, animal feeding, reproduction, hygiene and prophylaxis.

3. Results

3.1. The Age of Farmers

According to our sampling, cattle farming in the wilaya of Tissemsilt is practiced by both older and younger individuals. Our results show that the average age of farm managers is 49 years, ranging from 25 to 85 years. Almost half of the farmers, 47%, are between 30 and 50 years old, while only 6% are under 30, particularly the youth benefiting from livestock projects under programs like ANSEJ and CNAC. Finally, the older farmers, who represent 47%, are over 50 years old. This is a significant number, as older farmers have been practicing traditional farming for a long time, especially small-scale family farming in the wilaya of Tissemsilt.

3.2. Level of education of breeders

The level of education of breeders has a great importance in monitoring livestock and production. (dairy, meat). Our survey shows that 30% of farmers are illiterate. Furthermore, 17% of the respondents have a primary education, while it is noted that almost the same number of breeders, 30%, have an intermediate level of education, 20% have a secondary level, and there is only one university-educated breeder in our sample, representing 3%, who practices breeding as a secondary activity. It is reported that a considerable number of breeders (22%) have undergone specialized training in the management of dairy cattle farming, especially for young investors.

3.3. The workforce

The surveyed breeders rely on family labor, with 66% of farms (including women and young children) involved in tasks for cattle farming (milking, feeding, cleaning the buildings). 34% of farms use paid labor for large-scale modern dairy cattle farming, of which 11% is permanent and 23% is seasonal, to carry out tasks during certain times of the year (summer, etc.), such as haymaking and others.

3.4. Experience of breeders

The majority of breeders have experience in the field of breeding, which ranges from 5 to 50 years, and the average experience of breeders is 22 years. Some breeders have been engaged in this activity since their young age, as breeding is a hereditary activity in certain families, alongside agriculture. We note the highest number of breeders is eight (08) for the period (5-10) years or 26% and the same result for the period of (10-20) years.

3.5. Breeding buildings

The majority of breeding buildings are traditional barns or (Zriba) (fig. 01) that do not meet hygiene and health standards, especially for the breeding of local breeds or in areas practicing extensive farming. The percentage of buildings constructed as simple, solid barns is 67%, and it is noteworthy that 18% of farms have two buildings, one old and the other new. The walls are made of concrete blocks or solid materials; 26% are simple metal sheds and 7% are modern barns for the breeding of imported dairy cattle and improved breeds (fig. 02). For the state of cattle breeding establishments: 60% average, 18% excellent, and 22% poor. Types of livestock buildings in the Tissemsilt province that are far from compliance standards.

Figure 01: Traditional livestock building Figure 02:Modern livestock building

3.6. The breeding and stabling method

48% of farmers practice extensive farming, especially. Local dairy cattle (BLL) 37% practice semi-intensive farming and 15% use intensive methods, generally for the breeding of BLM (Modern dairy cattle). The breeding method varies according to the geographical area of the farms and also the availability of feed. It is reported that the type of animal housing differs from one farm to another. 48% of livestock breeders practice hindered stabling due to lack of land, 30% semi-hindered and 22% free stabling.

3.7. orage production

SAT (Total Agricultural Area) for the thirty surveyed breeders covers 432 hectares, including a SAU (usable agricultural area) of 361.5 hectares and 70.5 hectares of fallow land. Only 4 farmers, or 13%, engage in forage production (such as oats and sorghum), while 16 farmers or 87%, practice cereal cultivation (barley, wheat) and use the straw for their animals. Among the fodder productions, there are 03 breeders or 10% who produce oats, 1 breeder produces sorghum 3%.

3.8. Cattle Identification

Cattle identification plays a vital role in the census of our livestock, the monitoring of livestock at the level of livestock farms, facilitates the control of production and reproduction but unfortunately at the level of the wilaya of Tissemsilt and according to our questionnaire, we found that 67% of cattle livestock is unidentified. The remaining 33% of the livestock are identified, they are represented by imported animals (BLM : Modern dairy cattle) and animals identified by veterinary services in the case of screening for brucellosis, tuberculosis, foot-and-mouth disease,

artificial insemination, heat synchronization and livestock adhering to the milk collection program.

3.9. Cattle numbers

For the 28 breeders, the average size of cattle herds is estimated at 13 heads, varying from 6 to 50 heads (table 01). Dairy cows represent 52% of the size of dairy cattle herds, almost half, with numbers ranging from 1 to 19 heads. The share of heifers is 7% of the heads. While 13% and 17% are female and male calves respectively. These are intended either for fattening or for sale after weaning. It is also noted that 19% are bulls and 17% are bull calves, which are intended for fattening or breeding

Table 01 : structure of dairy cattle farms surveyed.

Herd composition	Number of heads			Min	max	%
	BLM	BLA	BLL			
Dairy cows	99	42	41	01	19	52
	182					
Heifers	26			01	06	7
Male calves	61			01	08	17
Female calves	45			01	10	13
Bulls	19			01	03	6
Young bull	17			01	04	5
Total	350			06	50	100

BLM: Modern dairy cattle (imported), BLA: Improved dairy cattle (from crossbreeding), BLL: Local dairy cattle (local breeds)

3.10. The exploited breeds

For this point on the breeds exploited, our results show that most of the breeders in our survey raise cattle belonging to the Montbeliarde breed at a rate of 34%, followed by Holstein at 8% and brown of Alps at 8%. It is noted that breeders prefer the Montbeliarde and Fleckvieh breeds due to their mixed productivity (milk and meat), adaptability to the farming conditions in the region, and resistance to diseases; on the other hand, the Holstein breed is a good milk producer but is sensitive to farming conditions, and its production capacity decreases after one or two calvings among the 30 breeders surveyed. 02 breeders exploiting the Holstein breed are losing their livestock. For fattening livestock, there are two breeders among the 30 breeders who focus on meat and mixed breeds, especially bulls (Charolais, Limousin, Montbeliarde, Fleckvieh, and the fattening of local breeds…). 54% of dairy cattle are BLM, and according to the survey results, 23% are local breeds (Brown of the Atlas, Chelfienne, Guelmoise, Djerba) and 23% are improved

breeds. We notice that the percentage of BLL equals BLA, which explains the improvement of local breeds in terms of production after crossing with imported breeds or the use of AI.

3.11. Orientation of Farms

Most farmers primarily focus their operations on dairy farming, with fattening as a secondary (mixed) activity, representing 80% of our respondents. 13 % are dedicated solely to dairy farming, while 7% are oriented towards fattening.

3.12. Dairy production

For our survey, there are 182 dairy cows whose milk production varies according to the breed (BLM, BLA, BLL). The milk production for (BLL) ranges between 5 to 10 liters, while (BLM + BLA) ranges from 15 to 30 liters. The quantity varies according to the amount and nature of the diet, the amount of water, and the seasons. 8 farmers participating in the collection program represent 28%, 19 farmers use the milk for self-consumption, which is 68%, and only one farmer, or 4%, is oriented towards direct sales. The presence of milking machines in farms is very important. Out of 10 farms, 35.71% have acquired milking machines and tanks, while 18 farms or 64.28% practice manual milking.

3.13. The raised calves

Among the 30 breeders, two practice fattening for the municipalities (Tissemsilt, Bordj Emir Aek) using local breeds such as the brown of Atlas and imported breeds (Charolais, Montbeliarde, Fleckvieh). For 28 dairy cattle breeders, the majority raise the calves born from calving, with 82%. 18% sell them directly on the market, usually after 3 to 4 months. The breeders keep one or two for the natural breeding of females. It is noted that 23 breeders have calves in their farms and 5 breeders do not have calves.

3.14. Feeding practice

3.14.1. Watering

Among all the breeders surveyed, the animals were watered once during winter periods, and twice during hot periods (summer). The quantities vary (40-100L) depending on the period and the breeds.

3.14.2. Feeding practice

The practice of feeding cattle shows a difference among the thirty farmers in the surveyed farms, varying based on: the presence of agricultural land and forage areas, the breed, the type of production, the weight, the sex, and the nature of the available food resources. These also differ depending on: the region and the season. The feeding of dairy cows is carried out in two distinct periods:

A. The grazing period: during two seasons: summer and spring.

For farmers who own agricultural land. The ration is based on pasture grass or cultivated meadows (sorghum) in spring and stubble in summer. The forage is to be harvested and then distributed to

the cows in the barns, or directly grazed in the pastures. We have 23 farmers, which is 78%, who practice pasture feeding for both seasons. with the addition of its concentrate, straw, and barley in some dairy cattle farms with low quantities.

B. The period of stabling: during two seasons: winter and autumn.

The ration is based on hay harvested from the meadow. (alfalfa, oats). Straw is also used as a staple feed, along with bran for certain livestock, barley, and silage. We have 7 breeders, which means 22% keep their livestock in the buildings throughout the year. For example, a single farmer practices feeding in the building (silage, cattle feed, alfalfa and concentrate), which results in very good milk production according to the farmer. And for a breeder who raises cattle for fattening, the compound feed (corn, wheat bran, barley, straw and concentrate) yields good results according to the breeder. It is reported that the farmers from the surveyed farms use concentrate as a supplementary feed, with the amount distributed varying from one farm to another, ranging from 3 kg to 15 kg per day depending on the breeds.

3.15. The practice of reproduction

In the overall surveyed farms, 57% of the breeders use natural mating (NM) as their method of reproduction. Artificial insemination (AI) is practiced in 3% of the studied farms (due to the absence of bulls and breed improvement), and 40% of farmers use both methods simultaneously. For natural breeding, farmers use bulls from their own farm 55.17% of the time, 20.68% use bulls from other farms or due to the absence of a breeding bull on their farm, and 24.13% use a mixed approach to ensure product diversity.

3.16. Building hygiene

During our surveys, the majority of buildings are disinfected. 27 breeders or 90% use quicklime, bleach and disinfectant to clean their buildings especially after the onset of foot-and-mouth disease. The majority of breeders use quicklime once a year. In addition, 02 breeders or 7% use only water for cleaning and only 01 breeder uses biocide as a disinfectant representing 3%.

3.17. Prophylaxis

Vaccination of animals is carried out either by state veterinarians or private practitioners for the various vaccines. We have 27 breeders which represents 90% vaccinate their livestock, 03 breeders missed the vaccination campaign or 10%. All the breeders in our sample bring the veterinarian in the event of a health problem where he presents himself by the call of the breeders.

3.18. Diseases

For our survey, the veterinarian is present on the farms in case of diseases, for the thirty farms, 3 farms or 10% affected by foot-and-mouth disease, the 3 herds are not vaccinated against the disease and one farm affected by tuberculosis 3%. It is reported that dangerous diseases except for mastitis disease, which occurs in certain dairy cows, placental retention, digestive problems and lameness, do not affect the majority of the farms.

4. Discussion

Cattle breeding in the wilaya of Tissemsilt presents a significant diversity, which is mainly due to the breeding methods followed, the food resources, the structure of the farms, the size of the herd, as well as the conduct of the reproduction followed and type of production targeted.

According to our results, the average age of the surveyed breeders is 49 years. This indicates that aged farmers, with a significant percentage of 47% being over 50 years old, practice livestock farming in the Tissemsilt region. This result is lower than that of [8] in the Bouira province, which was 65% being over 50 years. our results are lower than those of Attia,k in 2019 wilaya of EL-Tarf (60%) > 50 years. [9] reported that the breeding of the local cattle breed in the wilaya of Tlemcen is practiced only by men because of the aggressiveness of the animal. For [10 in the Wilaya of M'sila reported that the majority of farms are old and they belong to the age group > 40 years with a percentage (83.9%) of which (38.7%) > 50 years

The majority of farmers rely on family labor (66%), while (34%) create salaried jobs, the same result was reported by [10] and [11].

Regarding the education level of breeders, it is generally 30% illiterate and 70% at other levels (30% primary, 20% middle, 17% secondary), and lastly, the university level is low at 3%, with cattle farming being practiced as a secondary activity. Our results are lower than that of [11] in the wilaya of EL-Tarf (80%) of breeders have a primary level. On the other hand, the results of [10] (Wilaya M'sila) (58.06%) of breeders are illiterate and the other levels (12.9% Secondary, Primary 19.35%), the university level always remains the lowest with (9.68%).22 % of breeders have specialized training within the framework. (ANSEJ, CNAC), this result is lower than the results of [8] in the Bouira province, which is 48%.

The average experience of farmers is 22 years, with 52% having less than 20 years. This increase is the reason for the financial investment projects by the state. (ANSEJ.CNAC). 74% of the farmers in our survey have more than 10 years of experience, which is higher than the results of [8], 50% in the Bouira region. Also higher than that of [11] wilaya of EL-Tarf (5%).for [10] wilaya M'sila (12.90%) of farms have received agricultural training which means that the state's effort in this area is almost negligible.

For the SAU (agricultural area used), The average size of cattle farms varies from 02 to 50 ha and as a note we have 24% of breeders who do not own land but rent land and resort to purchasing fodder.(24%) of farms have a small surface area <5 ha. [10] (Wilaya M'sila) found the same result for the class < 5ha (25%).

For forage production, the SAT (Total Agricultural Area) is 432 hectares, with the SAU (agricultural area used)being 361.5 hectares and 70.5 hectares fallow.87% of our farmers only practice cereal cultivation, which characterizes the wilaya of Tissemsilt, and they use straw for feeding cattle. Forage production (oats, sorghum) is low, representing 13% (4 farmers). Our results are higher than those of [12] whose cereal cultivation represents (51.5%) and those of [10] , with 61.28% for cereal cultivation. which explains why the breeders of this area are developing this culture.

For livestock buildings, a simple medium-quality structure generally represents 60% for surveyed breeders. 7% of the buildings are modern, which is superior to that of [11], only (2.2%) of the livestock buildings were built in a correct way for the BLM.

The breeding method is oriented towards extensive farming, with 48% due to the geographical characteristics of the region: 65% mountainous and 20% forested. This approach aims to address the high cost of feed and the lack of forage areas and the confined housing represents 48%, which confirms the lack of space. According to [11] (wilaya of EL-Tarf) the semi-extensive mode is applied by the majority of breeders, (10%) for the intensive system. (82.8%) of the farms have a semi-tied stabling mode and (11.1%) tied. for [12] in the wilaya of Setif the intensive system represents (30%). [10] (Wilaya M'sila) contrary to our result the semi-intensive mode represents 93.54%, the intensive mode is low 6.45% and the absence of extensive mode.

For the identification of herds, 67% remain unidentified, while the 33% identified represent the imported BLM, the cattle identified for artificial insemination and synchronization, and the breeders participating in the collection or currently undergoing disease screening (brucellosis, tuberculosis) by veterinary services. The result is higher than that of [12] (54%) in the Wilaya of Setif. The issue of food supply accompanied by the water problem. 15% of farmers use only drinking water from public networks, and 63% use drinking water from public networks combined with well water. The results of the use of groundwater resources in [12] show 43%, while [8] report 51.25%, which is lower than our survey. There are additional costs since the water consumption for dairy cows is 100 liters per head per day.

We can deduce that the size of the cattle herd increases with the size of the farm. Dairy cows represent 52%, which is 182 cows in the herd size, with the breeds utilized being 54% BLM, 23% BLA, and 23% BLL. This result is higher than that of [12] at 48% in the Setif region and lower than the result reported by [8] in the Bouira province at 66.25%.increase in the number of BLM through the importation of pregnant heifers. [11] declared that (90%) of the cattle population is local breeds.

Our survey results on exploited breeds (BLM) show that the dominant breed is Montbeliarde at 34%, followed by Holstein at 8%, and Brown of the Alps at 8%, with 50% exploiting three breeds. (Flechveih , Normande , Holchtein, Brown of the Alps). This result was also reported by [12] in the region of Setif at 87.09% and by [8] in the Wilaya of Bouira at 30%. [10] reports that the exploited breeds are distributed (79.03% BLM, 8.62% BLA, 12.10% BLL) for the BLM (44.82%) Holstein to increase their milk production capacity and (29.31%) Montbéliarde. The local breeds present are Djerba, Guelmoise, Brown of the Atlas, and Chelfienne.

The production of the surveyed farms is mixed (meat - milk) at 80% for [10] has found 77.42% for milk production, 22.58% (mixed), 0% (meat). The milk production varies according to the BLL breeds. 03 to 10 L/day, BLA+BLM 15 to 30 L/day, the breed specialized for milk production is Holstein breeds according to the survey, but it is sensitive to the farming conditions (mortality of Holstein cattle in 2 farms). The farmers participating in the milk collection program represent 28% (low compared to the number of farmers).

The absence of milking machines means that 64% of the milking is done manually; the same result (63%) applies to [8] in Bouira province. [12] in Setif region 2012) 64.37%. [10] Wilaya declares that manual milking is used with (22.58%), (77.41%) for mechanized milking

83% of farmers keep the calves from their dairy cattle breeding and due to the lack of feed, 17% of farmers sell their calves directly (sources of income). Breeders keep 1 or 2 bulls for the

reproduction of animals. (natural mount). There are 2 breeders who practice fattening, and the weight varies between 200 and 800 kg depending on the breeds and the availability of feed.

For the feeding of cattle, there are two periods: (In spring and summer) the high cost of food forces farmers to feed their animals on pastures (green forage) and on stubble in summer. The animals from these studied farms receive green forage in spring and summer, depending on the availability of irrigated land and the distribution of (straw, hay, oats, and grass from the meadows), sometimes with a small amount of bran and concentrate in the stables. For the second period (autumn and winter), It's a period of confinement. The feeding of dairy cattle is based on straw, oats, and alfalfa, with a basic ration supplemented by the distribution of concentrates, special dairy cattle feed, and bran. According to the survey, the quantity varies from 3 to 15 kg. Therefore, the practice of feeding depends on the availability of food and land. It should be noted that cattle farming in forested and mountainous areas (Theniet el Had) involves cattle feeding on grasses and trees in the forest. These feeding practices are relatively similar to those described by [12] in the Setif region and [9] in the region of Tlemcen. [10] reports that breeders practice a diet that varies according to the season.

The mode of reproduction, natural mating is practiced by 57% of the surveyed breeders, while 3% use artificial insemination (AI), and 40% employ both methods simultaneously. The percentage of natural mating in our survey is higher than that of [12] in the Setif region (24%), and it is equal to the results of [8] in the Bouira province at 51%. Regarding natural mating, the surveyed breeders either use the farm's bull (55.17%) or breeders from other farms, which increases the risk of transmitting genital diseases. (brucellosis).

The age of the first breeding of heifers for the 30 breeders, 27% at the age of 18 months. 33% > 18 months (18-24 months) and 40% < 18 months (12-18 months) for some farms. The age of first breeding for heifers is not controlled, especially for the extensive farming method of local breeds. We conclude that 40% are less than 18 months, which causes dystocias. For [11], the average age of the first mating of the heifer is 24 months for all farms. [10] reports (13 to 15 months) 54.83%, (15 to 18) months (32.25%).

Regarding hygiene and disinfection practices through sludge scraping and the products used for disinfection (water, bleach, quicklime), it has been reported that 3% of farmers use biocides. [10] reports that only (12.5%) of breeders disinfect their buildings.

For food hygiene, 70% of the food is stored in rooms or areas within the breeding buildings to prevent moisture that promotes the growth of microorganisms. Regarding prophylaxis, the results of our survey show that 10% of farmers did not benefit from the foot-and-mouth disease vaccination campaign. On the other hand, the results from [12] show that all farmers vaccinate their livestock against rabies, and all farmers consult veterinarians in case of diseases, whether for curative or preventive treatments. For our survey, 23% of breeders benefit from dairy cows (BLM) of (6-10) cows through investment projects within the framework of (ANSEJ, CNAC). The absence of professional networks for the organization of cattle breeding activities in the Tissemsilt province. All the breeders in our survey are looking for profitability in this activity to compensate for the money spended (the high cost of food, drinking water supply, land rental and means of transport) and this is achieved through increased production of (meat and milk) and the sale of calves and also resorted to extensive farming. Therefore, the farmers are looking for significant

investments (modernizing the barns, milking equipment, agricultural machinery and forage autonomy).

5. Conclusion

The cattle breeding is practiced by older breeders with good experience, most breeders practice the extensive mode to reduce the problem of high cost, unavailability of feed and lack of agricultural land and fodder areas. The majority of farms are oriented towards mixed production (milk-meat), the exploited breeds BLM (Holstein, Montbeliarde, Flackvieh, Normande, Brown of Alpes), BLL (Djerba, Guelmoise, Brown of Atlas, Chelifienne), BLA by the use of artificial insemination or crossbreeding with imported cattle. The critical problem for all breeders is food, the quantity and quality of food distributed according to availability, not according to the animal's needs. The lack of training and low technicality affect the performance of the livestock also the loss of a significant number of animals for technical, financial, social and administrative reasons. We can conclude from our investigation that cattle breeding at the wilaya level can be developed and progressed if there is a combination of all efforts of breeders and state.

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