

# **RESEARCH ARTICLE**

# TYPOLOGY AND FECUNDITY OF DAIRY CATTLE FARMS

# K. Seme<sup>1,2</sup>, A.Y. Djagba<sup>2</sup>, M. Lamboni<sup>3</sup>, K.A. Kossoga<sup>4</sup>, L.K. Koumessi<sup>5</sup>, G.K. Somenutse<sup>2</sup>, S. Boma<sup>6</sup> and W. Pitala<sup>1,7</sup>

- Higher School of Agronomy, Department of Animal and Veterinary Sciences, University of Lomé, ESA/UL, Agroressouces and Environmental Health Research Laboratory (LARASE),01Po Box: 1515 Lomé 1-Togo.
- 2. Togolese Institute for Agronomic Research, Kolokopé Station of the Wet Savannah Agronomic Research Center(CRA-SH), Togolese Institute for Agricultural Research (ITRA), Togo, 220 Po Box01 Anié-Togo.
- 3. Higher Institute of Agricultural Professions of the University of Kara (ISMA UK), Po Box 404. Kara Togo.
- 4. Togolese Institute for Agricultural Research, Avétonou Station of the agricultural research center for Forest area(CRA-F), Togolese Institute for Agricultural Research (ITRA), Togo, Po Box 1163 Lomé.
- 5. Togolese Institute for Agricultural Research, Glidji Station of the Coastal agricultural research center for Forest area(CRA-L), Togolese Institute for Agricultural Research (ITRA), Togo, Po Box1163 Lomé.
- 6. International Center for Research and Development on Breeding in the Subhumid Zone (CIRDES Bobo-Dioulasso), 01 Po Box454 Bobo-Dioulasso.
- 7. Regional Center of Excellence on Avian Sciences, University of Lomé, CERSA/UL, Po Box: 1515 Lomé, Togo

# Manuscript Info Abstract Manuscript History A study on typology and fertility is carried out in 81 cattle farms in the Maritime region of Togo for six (06) years from 2015 to 2020. The

Received: 10 March 2023 Final Accepted: 14 April 2023 Published: May 2023

*Key words:-*Breeding System, Fertility, Cows, Milk, Reproduction A study on typology and fertility is carried out in 81 cattle farms in the Maritime region of Togo for six (06) years from 2015 to 2020. The typology of these farms gives the traditional type, traditional improved and that of rent with respectively 39.4%, 38.2% and 22.4% of representativeness. The zebu is the most representative group of bovine species in these farms including the Goudali breed. In these farms, a bull can protrude an average of 38 cows with  $4.7 \pm 0.5$  years as the age at first calving and  $21.30 \pm 2.58$  months as the calving-calving interval. The average daily milk production per cow is  $1.78 \pm 0.87$  liters over a lactation period of  $8.4 \pm 0.5$  months. Based on clinical signs, breast, respiratory and genital pathologies were suspected with prevalence rates of 6.17%, 11.11% and 4.94% respectively. Finally, this study offers real possibilities forgenetic improvement of milk production through artificial insemination.

.....

Copy Right, IJAR, 2023,. All rights reserved.

# **Introduction:-**

In West Africa, livestock is mainly developed in the Sahelo-Sudanian zone where it is at the heart of the production systems of rural households. Livestock products (milk, meat) are sources of income and protein for food security (Kulo and Abalo, 2011). In Togo, dairy cattle farming is essentially of the traditional type characterized by a low level of production. This production is estimated in 2010 at about 9,600 tonnes and covered only 28% of milk and milk products needs (DGSN, 2010). However, in recent decades, Togolese have been orienting their diet towards a diet increasingly rich in animal protein (Adanlehoussi and Adomefa, 2004). To meet this growing demand, the Togolese State uses significant imports that increased from \$3 million to \$9 million between 2000 and 2011 (FAO,

# **Corresponding Author:- K. Seme**

Address:- Higher School of Agronomy, Department of Animal and Veterinary Sciences, University of Lomé, ESA/UL, Po Box: 1515 Lomé, Togo.

2013). In its investment and food security plan, Togo plans to move from an annual growth rate of 3% to 6.4% in order to achieve a coverage rate of 70% of national needs for milk, eggs and meat (PNIASAN, 2017). To cope with the policy of intensifying milk production, one of the possibilities for achieving the results is the introduction of artificial insemination in dairy cattle farms to improve genetic progress. It is with this in mind that this preliminary study consisted in highlighting the typology of dairy cattle farms in the Maritime region as well as the fecundity of cows in order to practice artificial insemination.

# Materials and Methods:-

# Study environment

The present study is conducted in dairy cattle farms in four prefectures (Avé, Golfe, Vo and Zio) in the Maritime region located in South Togo (Figure 1). Geographically, Togo is a coastal country in West Africa located between the <sup>6th</sup> and 11th degree north latitude and between 0° and 2° east longitude. The Maritime region, the survey area, enjoys a subequatorial climate with two rainy seasons whose duration is very variable ranging from March to mid-July for the main rainy season and from mid-September to November for the small rainy season. Rainfall ranges from 800 mm to 1,600 mm of rain per year with an average temperature ranging from 20°C to 35°C (FAO, 2013).



Figure 1:- Map of Togo indicating study cattle farms.

# **Farms surveyed**

The study is carried out on sedentary cattle farms where milk production is one of the main sources of income, especially for the farmers' wives. In addition, these farms have a workforce of at least thirty heads of animals and have been raising at least for five years in the area, recognized by the chief cattle herders of the locality.

# Measuring equipment

The material used to quantify the volume of milk milk is a graduated plastic cup with a capacity of 1 liter.

#### Sampling

A retrospective exploratory pre-survey with the structures in charge of livestock farming, namely the Directorate of Livestock (DE), the Togolese Institute for Agricultural Research (ITRA), the Institute of Advice and Technical Support (ICAT) and private veterinarians, made it possible to identify the different dairy cattle breeding areas of the Maritime region in Togo. Out of 109 farms existing in 2014 in the four prefectures identified namely Avé, Golfe, Vo and Zio, meeting the criteria of this study, 81 breeders agreed to provide information on their farms. The data collected covered the livestock system, milk production and animal health. Additional data on milk productivity and cow fecundity were also collected from a random sample of 105 suckler cows on these farms, namely 35 zebu, 35 taurines and 35 mestizos.

# Conduct of the study

The study was conducted for six (06) years from 2015 to 2020. A monitoring and data collection sheetwas developed and filled in monthly in the mornings before the animals left for grazing. Given the diversity of data to be collected by exchange withfarmers and by observation, description, counting and measurement, at most the data from two farms, in the best case, are filled in per day. The contribution of the resource persons in this case the veterinarians and the Chief CattleMen has given confidence to these breeders and has facilitated this work.

#### Typologies of cattle farms encountered

The typology of these farms in traditional, traditional improved and rent or commercial is obtained on the basis of the classification of Dao (2013) during the study on the formulation of the program of detailed actions for the development of the milk sector in the WAEMU zone (Dao, 2013). In this classification, traditional livestock farming is characterized by the non-existence of the barn, exclusively pasture feeding, medical care under the full responsibility of the breeders and a low average daily milk production (no more than 10 liters). While the traditional improved is characterized by the existence of livestock buildings, pasture feeding supplemented by the intake of minerals and vitamins, medical care devolved to the breeders with the intervention of the veterinarian at times and a daily milk production of between 10 and 30 liters. The annuity is fundamentally distinguished from the first two by the full responsibility of veterinarians for medical care and a high daily milk production of at least 30 liters. The dominant breed in this type of breeding is the Zebu Goudali.

# Milk production and fertility parameters studied

The amount of milk milked per day per cow (QL) and the duration of lactation (DL) are the milk productivity parameters measured. In addition to these parameters, the average income per total sale of cow's milk per day and per lactation time was calculated by the following formulas:

# **RMJ** (F CFA) = **QL** $\mathbf{x}$ **PV**

# **RMDL** (F CFA) = **QL x DL x PV**

RMJ = average daily income per total sale of a cow's milk; RMDL= average income per total sale of a cow's milk throughout the lactation period; QL (Liters)= amount of milk milk per day per cow; DL (months) = duration of lactation; PV (F CFA)= average selling price of cow's milk

Fertility parameters such as age at first calving (VPA) and calving-calving interval (IVV) were also determined. Apart from the amount of milk milked per day and per cow (QL) measured during the survey, the other parameters are taken from the individual animal monitoring sheets or provided by the breeders and/or veterinarians in charge of animal health in these farms. In the absence of reliable information, the lactation rank and the number of postpartum days of the suckler cows studied were not taken into account.

# Prevalence of pathologies encountered

The pathologies encountered in these farms on the basis of clinical signs are grouped by organ or apparatus affected in the absence of additional examinations of their confirmation. Thus, the prevalence of these groups of pathologies is calculated by the following formula:

 $Prevalencerate (\%) = \frac{\text{Number of cattle farms (outbreaks) showing symptoms of the disease x 100}}{\text{Total number of cattle farms (outbreaks) surveyed}}$ 

# Data analysis

The statistical software SPSS 21 was used for the data analyses. The "General Linear Model" (GLM) for the multiple comparisons of parameters (birth weight, milk production and mortality rate) was applied. Tukey's multiple-rang test was performed to test the difference among quantitative values. The results were expressed as a percentage and as a mean  $\pm$  standard deviation and the differences were considered significant at the probability threshold of  $P \le 0.05$ .

# **Results:-**

# Livestock systems

# Typology of dairy cattle holdings

The animals of these farms are mainly fed on pasture with the exploitation of natural rangelands, fallow land and surface water for watering. The exploitation of the herd is made in such a way that the animals belong to the owners and the milk returns to the cattle herders, in addition to its estimated monthly remuneration of  $15,000 \pm 4,500$  CFA francs. Milking is manual and is carried out by all the cattle herders on the farm every morning. 75.31% of these farms have more than two owners. In the typology, farms differ in traditional type (39.4%), improved traditional (38.2%) and rent or commercial (22.4%) (Table 1).

Results of the survey	Number of farms concerned	Percentage (%)	
Existence of barns			
Yes but Traditional Improved (1)	7	8	
Yes but Traditional (2)	3	4	
No	71	88	
Composition of the food ration			
Exclusively on pasture (4)	14	17	
In addition to mineral supplementation (5)	62	77	
In addition to mineral supplementation +	5	6	
agricultural by-products (6)			
Responsible for veterinary care			
Breeders (7)	40	49	
Veterinarians at times (8)	23	29	
Veterinarian only (9)	18	22	
Existence of Zebu cows			
No (10)	22	27	
Less than 20 (11)	24	30	
20 and over (12)	35	43	
Average daily quantity of milk produced (liters)			
10 and under (13)	13	16	
Between 10 and 30 (14)	41	51	
30 and over (15)	27	33	

Table 1:- Classification of Dairy Cattle Farms.

The analysis of Table 1 shows that 88% of farms do not have a barn, 77% give mineral supplementation to their animals, 78% of medical care is carried out by breeders, 73% have zebu cows and 51% have an average daily milk production of between 10 and 30 liters. In addition, animals are grazed mainly during the day with an average time/day of 10 hours (Table 2).

<b>Results of the survey</b>	Daily frequency of driving animals to pasture					
	Once Twice		Twice			
	During the day		During the day of which once in the night		of which once in the night	
Time taken	7h to 9h of	10h of	10h of	11 hours of time and more		
	time	time	time			
Number of farms affected	24	18	16	13	10	
Percentage (%)	29.63	22.22	19.75	16.5	12.35	
		42		28		

Table 2:- Frequency of driving animals to pasture.

The frequency of driving animals to pasture seems identical. Thus, 42% of farms take 10 hours of time to graze while the others stay 7 to 9 hours (30%) and more than 11 hours (28%). In addition, these farms are subject to transhumance which lasts on average  $4 \pm 2.4$  months in the year with all the socio-economic impacts it generates.

#### Groups of bovine animals encountered

These farms include three groups of cattle: bulls (Bos taurus), zebu (Bos indicus) and mestizos from crosses between bulls and zebu. A significant difference ( $p \le 0.05$ ) is observed between the three groups of cattle at the level of the prefectures surveyed. These different groups belong to the taurine breeds Somba, Lagunaire, Borgou and N'Dama. As for the Sahelian zebu, they are represented by the white fulanipeulh, the M'bororo zebu, Goudali, etc. In total, 8,142 head of cattle are counted in the 81 farms surveyed, an average of 100 head of animals per farm with extreme values of 59 to 423 per farm. The dominant group of cattle species on these farms is zebu (Figure 2).



Figure 2:- Percentage of different groups of cattle encountered by prefecture.

# Livestock demography

The categorization of these animals by age group and sex shows on the one hand, that the number of calves and calves are on average the same and represents 10% of the total number and on the other hand, that the number of females in the herds is much higher than that of males with 78.8% representativeness (Figure 3). No significant differences (p>0.05) were observed between the three groups of cattle in the proportions of the different age and sex categories of the animals.



Figure 3:- Percentage of different age and sex categories by bovine species group.

The current trend in these farms is the mating of taurine cows (55%) by zebu bulls (3.80%). Considering farms with a population of at least 100 heads, representing 61% of the farms surveyed, the ratio of number of cows to number of bulls shows that a bull can reasonably protrude during a breeding season on average 38 cows with extreme values of 31 to 43 cows.

# **Calf management**

During the entire period of driving animals to pasture, calves are separated from cows and they suckle only when they return. For the duration of the night until dawn, they are separated from their mother again. And it is during the milking period, very early in the morning, that they are left to suck for one to two minutes in order to stimulate the excretion of milk before milking. The age of grazing of calves depends on the position of the park in relation to the place of grazing, the areas reserved for fields and the humid areas, areas of predilection for parasites. Calves are taken to pasture, in about 57% of farms, between 2 and 4 months, the age at which the calf can move and graze easily. But cases of precocity and delay in grazing are found in about 15% and 28% of farms respectively (Table 3).

Table 3:- Age of	of placing calves	on pasture.
------------------	-------------------	-------------

Results of	Age of placing calves on pasture			
the investigation	Less than two months	Between 2 to 4 months	More than 4 months	
Number of farms affected	12	46	23	
Percentage (%)	14.81	56.79	28.4	

The precocity of the conduct of calves to pasture is observed at the level of farms with parks located next to fields and / or next to wetlands prone to parasitism, while the delay in driving is observed at the level of parks located far from fields whose calves can already graze around parks not prone to parasitism. These different periods of grazing calves are generally conflict prevention measures, the main cause of which is the destruction of crops by livestock.

# Park maintenance

The maintenance of the parks is done in 60.49% of cases and consists of sweeping and picking up the dung. The dung obtained is used mainly to fertilize soils in market gardening and food crops (87.75%). Its use as fuel to set fire to parks in order to warm them or to hunt flies and / or parasites is also noted in the prefecture of Zio (12.25%). Breeders who do not maintain their parks (39.51%) are those who periodically eat from the park or rent the animals to farmers for the fertilization of their soil during the dry season.

#### Milk production

# Parameters of milk production and fecundity of cows

The average daily milk production per cow is  $1.78 \pm 0.87$  liters with extreme values of 0.5-4 liters over a lactation period of  $8.4 \pm 0.5$  months. Zebu cows whose Goudali breed gave better milk productivity ( $2.15 \pm 1.3$  liters) compared to other breeds (Table 4). The age at first calving is  $4.7 \pm 0.5$  years with a calving-calving interval of  $21.30 \pm 2.58$  months with extreme values between 15 and 26 months (Table IV). Breed does not influence lactation duration (DL) and calving-calving interval (IVV) (p>0.05); while milk production (QL) and age at first calving (VPA) of taurine cows differ significantly from other cattle groups (P $\leq 0.05$ ).

Bovine groups	Milk production		Fertility		
	*QL	DL* (months)	VPA* (years)	IVV* (months)	
	(Liters)				
Zebus	2.15 ± 1.3a	$8.3 \pm 0.76a$	$4.5 \pm {}^{0.2a}$	$20.95 \pm 1.13a$	
Bulls	$1.2 \pm 0.12b$	$8.7 \pm 0.23a$	$5 \pm 0.86$	$21.51 \pm 1.08a$	
Mestizos	$1.88 \pm 0.13a$	$8.2 \pm 0.56a$	$4.6 \pm 0.5a$	$21.4 \pm 5.54a$	
Average	$1.78 \pm 0.87$	$8.4 \pm 0.5$	$4.7 \pm 0.5$	$21.30 \pm 2.58$	

Table 4:- Parameters of milk production and fertility.

Mean values on the same m column topped by the different letters a and b are significantly different ( $p \le 0.05$ ).

\*QL= amount of milk milk/day/cow; DL= duration of lactation; APV= age at first calving; IVV= Calving-calving interval

#### Circuit and average milk sales income per cow

The sales channel of milk is short due to the short shelf life of milk. The actors involved in this circuit are the milking cattle herders, the women of the cattle herders, the collectors, the processors of milk into derived products, the resellers of dairy products and the consumers in this case those of the city of Lomé, capital of Togo.

Taking into account lactating cows representing on average 36% of the total cows in the herd during the IP (1 377 head), 3140 liters of milk is produced daily on these farms, i.e. 94 200 liters/month. The self-consumption of milk milk is  $2\pm 1.5$  liters / day / farm or  $60\pm 45$  liters / month / farm with extreme values of 0.5 to 6 liters / day.

These milks are usually eaten raw, fresh, curdled or processed into traditional cheeses commonly known as "wagashi".

The selling price of a liter of fresh milk on production or curd milk is  $250\pm25$  F CFA with extreme values of 200 to 400 F CFA. That of a traditional cheese ball oscillates between 500 and 1,000 FCFA depending on the size.

The farmer then achieves an average income of 570 F CFA / cow / day or 143,640 F CFA / cow / lactation duration per total sale of milk milk.

#### Animal health

In these farms, 92.60% of breeders do internal and external deworming, 83.95% treat their animals at least three times a year against trypanosomiasis. But the execution of all these treatments is under the responsibility of the breeder in 78% of cases. Thus, despite these health and medical prophylaxis, certain pathologies exist and frequently lead to the death of animals. Depending on the organ and/or apparatus affected, they are divided into skin (17.28%), digestive (71.60%), mammary (6.17%), genital (4.94%), ocular (17.28%) and digestive (11.11%) pathologies (Table 5).

Pathologies	Clinical signs	Farms	Percentage
encountered		concerned	(%)
Skin	Hairless plates; peeling followed by scratching; cleft hooves		
	followed by abundant blood flow; large pimples on the body that	14	17.28
	would crack afterwards		
Digestive	Bleeding from the oral mucosa as a result of scraping the soil;	58	71.60
	diarrhea of calves; belly bloating		
Mammary	Swelling of the udders and appearance of granules and blood in	5	6.17
	milk		
Genital	Metritis, vaginitis followed by non-delivery, late abortions	4	4.94
ocular	Abundant lacrimation followed by high fever	14	17.28
Respiratory	Intense and frequent coughs	9	11.11

Table 5:- Pathologies encountered.

# **Discussion:-**

The choice of the Maritime region for the conduct of the survey was motivated by a study conducted by FAO jointly with the Togolese Institute for Agricultural Research (ITRA) on the formulation of the program of detailed actions for the development of the milk sector in the WAEMU zone. According to this report, it appears that semi-modern livestock systems concern 5 peri-urban parks in the city of Lomé (Dao, 2013). In addition, the livestock of this region represents only 5% of the national workforce according to the results of the <sup>4th</sup> National Census of Agriculture (RNA) Togolese (FAO, 2013). And it is 37.63% of this workforce that was counted during this survey.

The animals of these farms being together in the park and grazing without sex separation, the ride is not controlled and only the dominant bull, imposes its genotype and phenotype on the offspring. The seasoning of reproduction is, therefore, less marked in these farms; because calves resulting from inter-breed variability (crossing) or intra-breed variability (selection) are born all year round (Chicoteau, 1989). Indeed, these variabilities should necessarily be an asset in these farms if the breeding were controlled, because they would increase the average phenotypic values of animal populations (Laminou, 1999). The ratio of number of cows to number of bulls equal to 38 is between 30 and 50 cows, corresponds to the values of Mallard and Mocquot (1998). This ratio could increase by about 30% if cows were presented to the bull only when they were in heat (Mallard and Mocquot, 1998).

Despite the use of the same methodology for the typology of these farms, the proportion of each type of livestock found is different from that obtained by research on the improvement of the dairy sector throughout Togo conducted jointly by the Togolese Institute for Agricultural Research (ITRA) and the International Research and Development Center on Livestock in Subhumid Areas (CIRDES) in 2004. Indeed, it emerged from their typology that 96% of cattle farms were traditional, about 2% traditional improved and 3 to 4 farmers in the prefectures Avé, Zio and Golfe were breeding for rent or commercial (Adanlehoussi and Adomefa, 2004). This difference is explained on the one hand by the fact that the present study is conducted only in prefectures with semi-modern farms and meeting the selection criteria and on the other hand, a possible improvement of dairy farms within a decade.

The age at first calving of  $4.7 \pm 0.5$  years ( $1718 \pm 182$  days or 56.4 months) is greater than  $4 \pm 0.5$  years ( $1373 \pm 180$  days or 48 months) corresponding to the values of Alkoiret and Gbangboche (2005) in a study on the fecundity of the lagoon cow by using data from individual animal monitoring sheets from 1987 to 2003 at the Samiondji farm in Benin. This age is 36-39 months and 65.5 months corresponding to that found by Adanlehoussi et al. (2003) during the study on the performance of the Somba taurine breed respectively in station and peasant environment in the cantons of Nadoba and Warango located between Togo and Benin. This age at first calving is higher than that found by Tellah et al. (2015) cows of four local cattle breeds in the peri-urban area of N'Djamena in Chad estimated at 47.41  $\pm$  9.92 months. The average calving-calving interval observed at these farms is 21.30  $\pm$  2.58 months with extreme values of 15 to 26 months. This interval is lower than the values found by Bouyer (2006). Indeed, he had found that this interval was 24 months in traditional breeding and 15 months in station in Gobra zebu while it was respectively 18 to 24 months and 14 to 15 months in N'Dama bulls (Bouyer, 2006). On the other hand, this interval is greater than that found by Adanlehoussi et al.(2003) which was 18.49 months and 15.3 months for Somba taurine breeds in peasant and station areas respectively. It is also greater than 14  $\pm$  2.8 months (426 $\pm$ 85 days) corresponding to the values of Alkoiret and Gbangboche (2005).

The daily milk production per cow estimated at  $1.78 \pm 0.87$  liters with a lactation duration equal to  $8.4 \pm 0.5$  months  $(252 \pm 15 \text{ days})$  is almost equal to that found by Adanléhoussi and Adomefa (2004) in Togo. Indeed, according to their study, the daily amount of milk per cow after deduction of the share drunk by calves oscillated between 0.3 and 2.5 liters with an average lactation time of 240 days 8 (months). In addition, Kouamo et al. (2009) had found in Sub-Saharan Africa and Senegal in particular 2009 that this production oscillated between 1 to 4 liters per day. Finally, the best daily milk production yield per cow (zebu) is estimated at  $2.15 \pm 1.3$  liters whose Goudali cow is well below their production potential which is of the order of 4.5 liters over 244 days (8.13 months) of lactation (Kouamo et al., 2009). The low milk productivity observed in these farms seems to be the same in almost all African farms. This would justify the fact that although Africa has 16.5% of the world's livestock, milk production is only 4.6% of world tonnage (FAO, 2013). This low milk productivity is explained on the one hand by the poor dairy performance of the breeds used and on the other hand by the lack of pasture and the low use of food supplementation, especially in the dry season.

The genital, respiratory and mammary pathologies encountered in these farms require additional confirmatory examinations of brucellosis, tuberculosis and mastitis. Nevertheless, on the basis of suspicions, comparisons were made with previous studies whose results of these pathologies were confirmed. Indeed, the prevalence rates of genital and respiratory pathologies of these farms are lower than those found by Hamidouet al. (2004). Indeed, they had found for brucellosis 13.2% in dairy farms in Ouagadougou, 18.3% in Niger and 22.5% in Togo in extensive farms while that of tuberculosis was 27.7% in intra-urban dairy farms in Ouagadougou in Burkina Faso (Konte, 2003; Bouyer, 2006). In addition, since the 2000s, brucellosis research has become more systemic in order to reveal the potential danger posed by peri-urban cattle farms, producing milk for the needs of the surrounding or urban population. Most of this work was carried out in Senegal, Gambia, Guinea and Guinea Bissau (Unger et al., 2003 and 2011), in Benin (Koutinhouin et al., 2003), in Burkina Faso (Traoréet al., 2004), Ghana (Mensah et al., 2001; Kwasi et al., 2011), Nigeria (Megid et al., 2010; Hezekiah et al., 2003; Cadmus et al., 2006), Cameroon (Shey-Njila et al., 2005). They indicated that the prevalences were relatively high (on average 8.8% in Côte d'Ivoire, 21.9% in Ghana, 25.8% in Mali, 6.20 to 15.2% in Benin, 30% in Niger, 15% in The Gambia, 83.3 to 94.1% in Guinea, 13.2% in Burkina Faso) in these "dairy basins", hence the dangers they represent for farmers and consumers of fresh milk. The persistence of certain pathologies in these farms is explained on the one hand, by the traditional habits of breeders to self-medicate limiting the possibilities of successful treatments and on the other hand, the movement of animals in search of water or pastures, sometimes entering inveterate reservoirs of certain infectious diseases: tick reservoirs for cowdriosis, glossin areas for trypanosomiasis, swampy areas where arbovirus-carrying arthropods abound (Abiola 2005).

# **Conclusion:-**

This study made it possible to characterize dairy cattle farms located in the Maritime region of Togo. Indeed, 22.4% of these farms are semi-modern with the dominant species type the zebu including the Goudali breed with good dairy performance. In terms of reproduction, a bull of average fertility can protrude an average of 38 cows with  $4.7\pm0.5$  years as the age at first calving and  $21.30 \pm 2.58$  months as the calving-calving interval. The average daily milk production per cow is  $2.28 \pm 0.86$  liters over a lactation period of  $8.4 \pm 0.5$  months and 33% of these farms have a daily production of 30 liters and more. Compared to animal health, 92.60% of farms do internal and external deworming and 83.95% do at least three times a year the treatment of their animals against trypanosomiasis. Based on clinical signs, it was noted, despite these prophylaxis, the presence of mammary, respiratory and genital pathologies with respective prevalence rates of 6.17%, 11.11% and 4.94%. Finally, this study offers real possibilities for introducing insemination into these farms with the aim of improving milk production.

# Acknowledgements:-

Our thanks go to the breeders and livestock technicians and veterinarians who accompanied us in this study.

# **References:-**

1. KuloE. A., Abalo K.M. (2011) Fresh cow's milk sector in the city of Lomé. J.Rech.Sci.Univ.Lomé (Togo), 14(2):29-39.

**2. Abiola F.A.** (2005)Quality of anthelmintics and trypanocides in Cameroon (preliminary study by a limited survey). Expert report, 13p.

**3.** Adanlehoussi A., Adomefa K. (2004) Report of the workshop for the results of research report on the improvement of the dairy sector in Togo, ITRA and CIRDES, 27p.

**4.** Adanlehoussi A., Bassowa H., Defly A., Djabakou K., Adomefa K., Kouagou N'T. (2003) Morphological and zootechnical characterization study of the Sumba taurine breed in peasant environments. Tropicultura, 21(3), 135-141

**5.** Adesokan E.K., Alabi P.I., Pile J.A., Cadmus S.IB. (2013) Knowledge and practices related to bovine brucellosis transmission amongst livestock workers in Yewa, south-western Nigeria. JS Afr Vet Assoc6; 84(1):E1-5.Doi: 10.4102/jsava.v84i1.121.

**6.** Alkoiret T.I., Gbangboche A.B. (2005) Fecundity of the Lagunaire cow in Benin. Age at first calving and interval between calving. Rev. High. Med. Vét. Country too. 58(1-2): 61-68.

**7. Bouyer B. (2006)** Assessment and analysis of the use of artificial insemination in genetic improvement programs for dairy breeds in Sudano-Sahelian Africa. ThesisofVét.Méd., Lyon,71p.

**8. Cadmus S.I.B., IjagboneI.F., Oputa H.E., Adesokan H.K., Stack J.A. (2006)** Serological Survey of brucellosis in livestock Animals and Workers in Ibadan, Nigeria. African Journal of Biomedical Research, 9: 163-168.

**9.** Chicoteau **P.** (1989) Physiological adaptation of the sexual function of Baoulés cattle in tropical Sub-Sudanian environments. Thesis 3rd cycle, University of Paris XIIe, 174p.

**10. Dao D. (2013).** Study on the formulation of the program of detailed actions for the development of the milk sector in the WAEMU zone. Annex 8: Togo report, 22p.

11.DGSN(2010) Directorate General of National Statistics of Togo. Report on food security in Togo, 59p

**12.** FAO (2013)4<sup>th</sup> National Census of Agriculture 2011-2014. Ministry of Agriculture, Livestock and Fisheries (MAEP), Directorate of Agricultural Statistics, Informatics and Documentation (DSID), final document, 51p.

**13. ITRA (1999)**Togolese Institute of Agronomic Research. Study of constraints to the introduction of artificial insemination in rural areas, 31p.

14. Konte M. (2003) Study of the prevalence of mastitis in mestizo and local cattle in the semi-intensive production systems of Kaolack and Fatick. In: Proceedings of the workshop to present the results of the PROCORDEL project in Senegal, Dakar, 22 December 2003: 44-46pp.

**15.** Kouamo J., Sow A.; Leye A., Sawadogo G.J., Ouedraogo G.A. (2009)Improving the production and reproduction performance of cattle through the use of artificial insemination in Sub-Saharan Africa and Senegal in particular: state of play and prospects, RASPA Vol.7N03-4, 139-148

16.Koutinhouin B., Youssao A.K.I., HouehouA.E, AgbadjeP.M. (2003) Prevalence of bovine brucellosis in the traditional breedings supported by the PDE (Projet pour le Développement de l'Elevage) in Benin. Rev. Med. Vét., 154(4): 271-276.

**17.** Kwasi AddoK., Mensah G.I., Nartey N., Kwasi NipahG., Aning K.G., Smits H.L. (2011)Knowledge, Attitudes and Practices (KAP) of Herdsmen in Ghana with respect to milk-Borne Zoonotic Diseases and the safe Handing of Milk J. Basic. Appl. Sci. Res., 1(10): 1556-1562.

**18. Laminou I.M. (1999)**. Genetic improvement through biotechnology of artificial bovine insemination: assessment and prospects: case of PAPEL in Sénégal. ThesisofVét.Méd., EISMV, Dakar, 83p.

**19. Mallard J., Mocquot J.C. (1998)** Insemination and dairy cattle production: the repercussions of biotechnology on a production chain, Prod. Anim.,1(11):33-39p.

**20. Megid J., Mathias L., Robles C. (2010)**Clinical Manifestations of Brucellosis in Domestic Animals and Humans. The Open Veterinary Science Journal, 4:119-126.

**21. Mensah G.I., Kwasi AddoK., Aning K.G., Nartey N., Kwasi Nipah G., Smits H.L. (2001)**Brucella Abortus Antibodies in Raw Cow Milk Collected from Kraals within the coastal Savannah Zone of Ghana J. Basis. Appl. Sci. Res., 1(8): 942-947.

22. PNIASAN (2017) National Agricultural Investment and Food Security Program initiated by the Togolese State to improve the living conditions of its population. Final document, 155p.

23. Shey-Njila O., Daouda N. E., Zoli P.A., Walrvens K., Godfroid J., GeertsS. (2005) Serological Survey of Bovine Brucellosis in Cameroon, Rev. Elev.Med Vet. Country too. 58 (3): 139-143.

**24. Traore A., Tamboura H.H., Bale Bayala, B., Rouamba, D.W., Yameogo, N., Sanou, M. (2004).** Overall prevalence of major pathologies related to bovine milk production in intra-urban livestock farming in Hamdallaye (Ouagadougou). Biotechnol. Agron.soc.Approx.8(1): 3-8

**25.Unger, F., Forester, E., Goumou, A., Zessin, K.H., Münstermann, S., (2011)** Selected results of surveys on brucellosis in small ruminants and cattle in traditional farming systems in regions of The Gambia and Guinea, the associated public health risk and perception of farmers and stakeholders. In: 2nd International Food Safety and Zoonoses Symposium VPHCAP, VFM CMU, July: 21-22p

**26.** Unger F., Munstermann S., Goumou A., Apia C.N., Konte M. And Hempen M. (2003) Risk associated with bovine brucellosis in selected study herds and market places in four countries of West Africa. Animal Health Working Paper 2.ITC Banjul, The Gambia, 37. pp. 3.

**27. Tellah M., Mbaindingatoloum F.M., MopateLogtene Y., Boly, H. (2015)** Age at first calving and calving interval of four cattle breeds in the peri-urban area of N'Djamena, Chad. Africa SCIENCE 11(3) (2015) 229- 240 229 ISSN 1813-548X.