Journal of Animal and Poultry Production

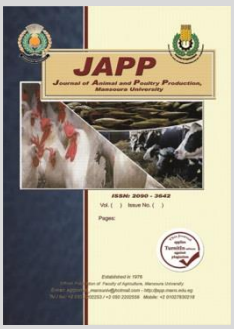
Journal homepage & Available online at: www.jappmu.journals.ekb.eg

Technical and Economic Assessment of Cattle Herds of some Experimental Research Stations in Egypt

Elsorougy, M. A.[1*]; M. A. I. Khalil[1]; Sahar A. Abd El-Rahim[1] and M. h. Yacout[2]

[1]Animal Production Systems Research Dpt., Animal Production Research Institute (APRI), Agricultural Research Centre (ARC), Ministry of Agricultural and Land Reclaimed, Dokki, Giza, Egypt.

[2]By-product Utilization Research Dpt., Animal Production Research Institute (APRI), Agricultural Research Centre (ARC), Ministry of Agricultural and Land Reclaimed, Dokki, Giza, Egypt.



ABSTRACT

This study was carried out as a beginning to evaluate cattle herds of experimental research stations belonging to Animal Production Research Institute (APRI) - Ministry of Agricultural to stand on constrains and reveals opportunities to improve productivity in view of economic aspect. The study targeted evaluation of cow and buffalo herds in *Sakha* and *Mahalat Mosa* stations in *Kafr El-Shaykh* governorate, *El- Serw I* and *El-Serw II* stations in *Damietta* governorate. Cattle herds differentiated local cow and *Friesien* (crossbred) at *El-Serw I* station, *Friesien* (crossbred) and *Angus* (crossbred) at *Sakha* station, buffalo at *Mahalat Mosa* and *El-Serw II* stations. Dairy cattle contributed 47% of the total herd size of the studied stations, meanwhile 39% for female calves and 10% for male calves. Milk yield recorded 3150 L per head per season for cow herd in *Sakha* station, followed by 3000 L, 2400 L and 1620 L for cow herd in *El- Serw I*, and buffalo herds in *El- Serw II* and *Mahalet Mosa* stations, respectively. Highest dairy outcome (10701 LE/ head /season) contributed by buffalo herd in *El- Serw II* station due to milk income and calving production generates buffalo as major dairy cattle to approach abundance price from livestock products. Cows were prominent for meat production; its calves sold at bargain prices as it offered municipal meat in local markets. Results of the study indicated importance to initiate semi-commercial dealing contributes to cover part of costs conducted for experimental researches and as well enlarge stations` income.

Keywords: Cattle herds, Experimental research stations, Profitability

INTRODUCTION

Livestock is considered fuel of the Egyptian agricultural national economy; it provides exploitation of natural and human recourses, and key for wages for producers of prevailing farming systems. Different roles of livestock have been highlighted in many studies given capitals, services, supply of agricultural activities and biological diversity (Ashley *et al*., 1999; Faye and Alary, 2001; Thornton, 2010). Faye and Alary (2001) mentioned that even as rule in sustainable economic growth and poverty reduction, livestock had limit interest from public governments and international communities.

Buffalo and cow are the predominant species of large ruminants reared under different farming systems of Egypt. Rapid growth in number of buffaloes and cows has been recorded over the last 60 years, reaching 3,476,396 buffaloes and 4,898,893 cows (FAO-STAT, 2019). Buffalo milk contributes 44% of the total milk production in Egypt, whereas it contributes 39% of the total meat production (FAO-STAT, 2014). Despite low milk production from buffalo in compared to exotic cattle breeds, they have longer productive life and produced milk with high fat ratio. Cow (baladi) are mostly raised for meat production because of low demand for milk from local cow. Galal (2012) reported that Baladi cows registered a decrease of their number over the period from 1961 to 2010; moreover, average contribution to milk supply did not exceed 17% from 2000 to 2006. There were no organizations to promote action preserve Baladi breed although its highly valued meat production, particularly in rural areas could be potential located market (Osman *et al*., 2016).

Experimental research stations describe production systems constraints as Technical: define production inputs and their assimilation; Financial: variable and fixed costs, farm budget and returns; Management: production inputs administrating, plan for enhancement and decision making and Environmental: interaction between livestock production systems and environment. Experimental research stations instructed to seeking applied research in livestock production to approach optimal utilization of agricultural and livestock resources, and dissemination of production systems perception to the concerned producers.

This study aims to analyze constrains and opportunities in order to improve productivity of Cow and Buffalo herds of *Sakha and Mahalat Mosa* Experimental Research Stations in *Kafr El-Shaykh* governorate and *El-Serw* in *Damietta* governorate belonging to Animal Production Research Institute (APRI), Ministry of Agricultural in Egypt concerning economic aspect.

MATERIALS AND METHODS

Case study

The study integrated four experimental research stations: *Sakha*, *Mahalet Mosa*, *El- Serw I* and *El- Serw II*

* **Corresponding author.**
E-mail address: muhammadelsorougy@gmail.com
DOI: 10.21608/jappmu.2022.140578.1039

located in delta region in *Kafr El-Shaykh* and *Damietta* governorates (Fig.1). Nile Delta farming systems convey mixed crop-livestock production systems inclusively lower and Upper Egypt, and around 76% of large ruminants' population (Tabana, 2000). Areas close to Nile valley distinguish farmyard household where livestock represents large ruminants (cow and buffalo), small ruminants (sheep and goat) and poultry. Farm size provides less than five feddans with high cropping intensity. Flock size contributed around 2–5 heads of large ruminants. Feeding systems mainly based on berseem in winter and green corn (*darawa*) in summer, crop residues and concentrates.

Fig. 1. Study targeted governorates (*kafr El-Shaykh* and *Damietta* governorates)

Data collection

Sampling method depended on official records of Buffalo herds in *Mahalat Mosa* and *El- Serw II* and Cow herds in *Sakha* and *El- Serw I* stations for the year 2021-2022. The idea was to get perceptive of herd productivity for each station based on qualitative and quantitative issues.

Questionnaire

Data gathered detailed information of: stations location and their area capacity in feddan (1feddan= 4200 m^2), herd structure and composition; herd reproductive related traits, herd productivity (milk, meat, manure production and offspring), animal selling (included monetary value upon herd dynamic), feeding systems, labor sort and stations income.

Farm income

Income criteria calculated by assessing total variable costs, total income and outcome (difference between total value of outputs and variable costs). This criteria was determined to realize farm budget, feature may increase income.

Statistical analysis

Chi-square test *(χ2)* was performed to investigate categorical variables. Linear model was designed to analyze the effect due to location (stations) and animal grade as following:

$$Yijk = \mu + Li + AGj + eijk$$

Where, Yijk is the total number of animal for each herd structure, μ is the general mean, Li is the fixed effect of the i^{th} studied stations, i= 1 to 4 (where: 1= *Mahalat Mosa*, 2= *El- Serw II*, 3= *El- Serw I* and 4= *Sakha*), AGj is the fixed effect of the j^{th} animal grade, j= 1 to 6 (where 1= adult females (lactating), 2= heifer > 1 year, 3= heifer < 1 year, 4= male calves > 1 year, 5= male calves < 1 year, 6= sire) and eijk is the random error assumed to be NID (0,σe).

RESULTS AND DISCUSSION

Farming systems

The studied stations established on area of 40 feddan for *Sakha*, 20 feddan for *Mahalet Mosa* and 12 feddan for *El- Serw (I, II)* stations. Research cadre represented 89%, 78% and 88%, meanwhile administrative staff represented 11%, 22% and 12% for *Sakha*, *Mahalet Mosa* and *El- Serw* stations, respectively (Fig.2). Animal labor distinguished milking and others daily animal farm operations (animal feeding, drinking, cleaning and help veterinarian for animal's treatment) (Fig.3). In a study of buffalo production systems in Delta and Upper Egypt, Fahim *et al.* (2018) reported that number of farm workers increases by growing of herd size. The main factor determined herd size was availability of animal feed (Debele and Verschuur, 2014).

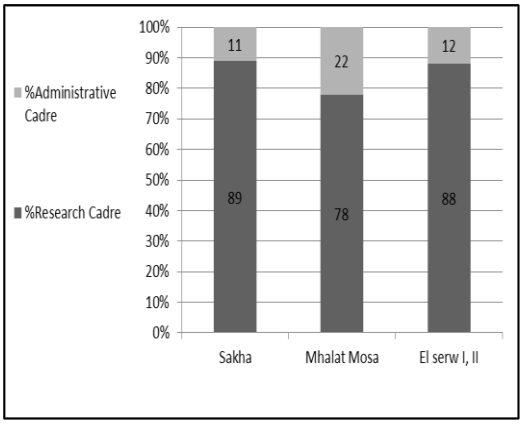


Fig. 2. Percentage of Research and administrative cadre of the studied stations

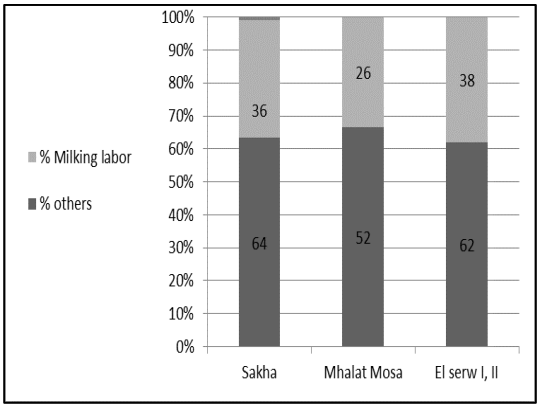


Fig. 3. Percentage of Animal labor of the studied stations

Milk production

Dairy production was the main component of cattle types raised at the studied stations. Local cows and *Friesien* (crossbred) were the species reared at *El- Serw I*, next to buffalo at *El- Serw II* station. *Friesien* (crossbred) and *Angus* (crossbred) were the types of cow reared at *Sakha* station. Buffalo were the main dairy animal raised at *Mahalet Mosa* station. Buffalo is characterized by well adaptive to humid climate (Das *et al*. 2017); they are resistance to diseases and parasites (El Nahas *et al*., 2013). Contribution of buffalo in milk and meat production declined in last decades requires studying buffalo production systems taking into account strengths and weaknesses in addition to perform strategies improve efficiency of these production systems. There has been no acute attempt to identify "*baladi*" among different located breeds (Galal, 2007). Economically, *Friesien* or crossbred cattle kept for dairy production regardless consumer preference towards "*baladi*" products due to poor production and high costs when raising "*baladi*" breed. It is worth noting that baladi cow's milk may be used to feed young calves because of high price of buffalo milk, often reserved to sale or processed. However, local cattle breeds comprise longer lifetime than foreign or crossbred in developing countries; explain their resistance to harsh conditions (Sraïri and Baqasse, 2000). Produced milk from the stations trade by a contract resultant determines the price of 1 kg (5.5 LE for cow milk and 9 LE for buffalo milk) by APRI. Fattening is not viable at the stations as male calve are selling by sorting.

Feeding

Animal ration is based on the APRI requirement, constituted protein percentage: 16% for dairy animals, 17% for starters. Purchase of concentrates feed is through a supplier according to requirements. Feed roughage included rice and wheat straws. Cultivating land is essential for availability of green forages which affects economic efficiency of present production systems (El Sorougy, 2018), indeed animal productivity, particularly for dairy animals, and their reproductive traits (El-Keraby *et al*., 1981). Feeding systems and resilience to feed price variability need to be renowned (Daburon, 2013).

Reproduction

Fertility percentage reached 80% of cow herd in *El-Serw I*, but 70% of buffalo and cattle herds in *El- Serw II*, *Mahalet Mosa* and *Sakha* stations, respectively. Grouping natural mating was the methodology followed within the cattle herds of the studied stations where sire inseminates female precise in the same group. Fertility obstacles were caused by Artificial Insemination (AI) due to insufficient qualities of equipment, labor and comprehensive- related technologies used in AI. Similar results were obtained by Mugisha *et al*. (2014) who accepted raise in number of producers using natural mating to availability factor. It was observed absence of guidance and extension service from agricultural institutes describing magnitude of AI expertise.

Veterinary care

Cattle herds weren`t registered any epidemic diseases, except for pathological symptoms of mastitis, lumpy skin disease (LSD), dystocia, milk fever and diarrhea of nursing calves; implies majority of sanitary term to infection by aforementioned diseases. Mortality rate didn`t exceed the percentage 5% for young calves or even adult animals. Vaccines are permitted in governmental immunization through veterinary authorities. Chronic diseases are treated by veterinarian assigned for each station.

Herd structure and composition

In table (1), data shows significant effect ($p< .0001$) of cattle graded age and gender located within the studied stations on number of animals for each herd structure. Dairy cattle represented high percentage (around 47%) of the studied herds. Female calves contributed around 39% of the total herd size, meanwhile 10% for male calves that confirms adoption of breeding systems of female calves to replacement for dairy production. Fattening wasn`t included production systems inside the stations that young calves traded on demand for occasions. Percentage of sire didn`t over 4%; they are only required for breeding (Fig.4). Herd dynamic differentiates the on-farm inputs and recourses, breeding systems, selling and purchasing theme. Producers rely to keep female stock to replacement and male calves for fattening or saving for surfacing events (Tabana, 2000 and El-Wardani *et al*., 2003).This is in accordance with Aboul-Ela *et al*. (2000) who reported that breeding female is the ordinary strategy applied in traditional farming systems in delta region of Egypt, donated 76% of the total buffalo herds. Dairy production is considered a part of traditional (mixed) – farming systems of Egypt with farms of around 5 feddans, breeding buffalo assorted with cattle herds by maximum 5 animals for one farm (Mansour, 1997). Due to shortages of cultivated land, accounted 3.5% of the total area of Egypt (around 8.5 million feddan) located in Nile Basin and Delta (FAO-STAT, 2011), dairy production illustrated source of income to offset gap between costs and revenue. Smallholders disseminated primarily of dairy production systems in Egypt supplying above 4.3 billion liters of fresh liquid milk (FAO, 2010). Producers` income is essentially from milk which sold raw or manufactured to increase farm return.

Table 1. Herd structure and composition of the studied stations

Item	Buffalo		Cow		Test	
	Mahalet Mosa	*El- Serw II*	*El- Serw I*	*Sakha*	*χ2*	*P-value*
Female						
No. Adult (lactating)	284(46.10)	88(40.18)	18(36.73)	137(53.10)		
No. Heifers (>1 year)	118(19.16)	68(31.05)	14(28.57)	43(16.67)		
No. Heifers (<1 year)	102(16.56)	58(26.48)	11(22.45)	34(13.18)		
Male						
No. Calves (>1 year)	23(3.73)	0(0)	2(4.08)	8(3.10)	*76.5041*	*<.0001*
No. Calves (<1 year)	52(8.44)	0(0)	2(4.08)	31(12.02)		
No. Sire	37(6.01)	5(2.28)	2(4.08)	5(1.94)		
% No. Sire/ Heifers (>1 year)	0.31	0.07	0.14	0.11		
% No. Sire/ Total Herd Size	0.06	0.023	0.041	0.019		
Total herd size	616	219	49	258		

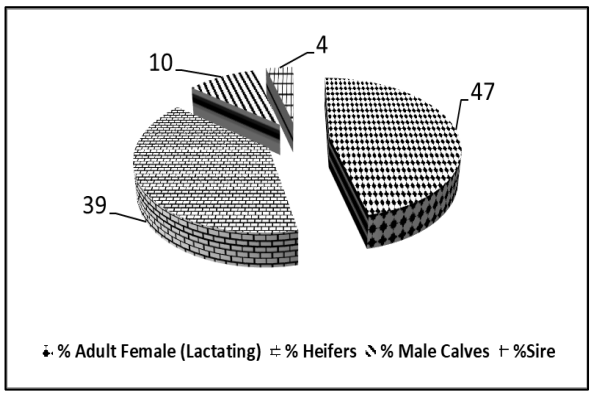


Fig. 4. Percentage of cattle unit of herds located in the studied stations

Monetary value was calculated for price of livestock unit in regard with total herd size for the fiscal year 2021-2022 (Fig. 5). Buffalo accounted 23.133 LE of *Mahalet Mosa* station of *Kafr El-Shaykh* governorate, and 24.580 LE of *El-Serw II* station of *Damietta* governorate. Cow accounted 22.193 LE of *Sakha* station of *Kafr El-Shaykh* governorate and 18.890 LE of *El- Serw I* station of *Damietta* governorate. This support validity of buffalo cattle adopted breeding systems practiced in the studied stations, however investment from concerned producers. Prevailing farming systems of Egypt where buffalo kept divided into: Extensive, semi-intensive and intensive farming systems (AnGR. 2003).

Buffalo is outstanding by high conversion rate allied feed efficiency. Buffalo milk sold at extremely price due to consumer preference and high fat ratio. With implementation of genetic improvement and crossing programs, buffalo reveals increase in production rate and profitability (Borghese, 2005). Local cow are common for breeding to meat production given low milk production, and consumer abstaining milk produced from cow; its milk processed to home consumption. Whilst historical site of local cattle as domesticated breed in Egypt since ancient, in terms of adaptability to local conditions and resistance to common diseases (Flori *et al*., 2015), genetic engineering and selection programs have not been included such species (Galal, 2012) except from experiments of crossing with foreign cattle. The foremost exotic cattle breed crossed with local cattle is "*Friesien*"; achieved notable increase in milk yield, but wasn`t sustainable as a result of poor management and inability to resist environmental trace. It has to search genetic assets of local cattle, conserve them by course that these assets abuse to improve animal productivity as well as farm income.

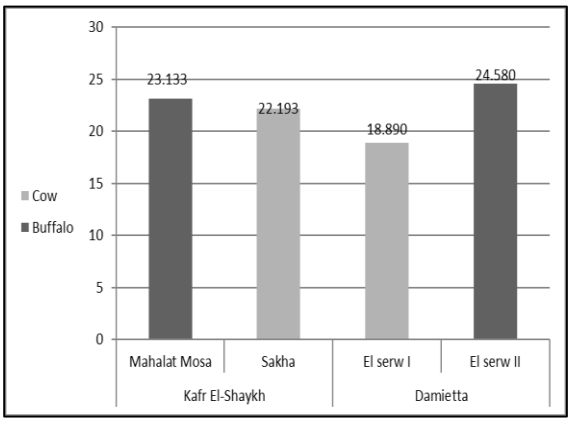


Fig. 5. Monetary values of buffalo and cow herds/LE/head

Dairy outcome

Milk production and outcome were calculated per head per season (Table.2). Milk production per head per day were 10 L and 10.5 L for cow herds in *El- Serw I* and *Sakha* stations, meanwhile 8 L and 9 L for buffalo herds in *Mahalet Mosa* and *El- Serw II* stations. Average milk production was 3150 L and 3000 L per head per season for cow herds in *Sakha* and *El- Serw I* stations for lactation length 300 days for both stations. While buffalo milk production were 2400 L and 1620 L in *El- Serw II* and *Mahalet Mosa* stations, lactation length for the two stations were 300 and 180 day.

Table 2. Dairy outcome (LE)/head /season of Buffalo and Cow herds in the studied stations

Item	Buffalo		Cow	
	Mahalet Mosa	***El- Serw II***	***El- Serw I***	***Sakha***
Milk performance				
AV. Milk production/L/head/day	9	8	10	10.5
AV. Lactation period/day	180	300	300	300
AV. Milk production/L/head/season	1620	2400	3000	3150
Costs				
Total concentrate cost/LE/head/season	8775	11700	13162	14625
Total roughage cost/LE/head/season	441	1440	1237	742
Total labor wage/LE/head/season*	1182	1160	1754	938
Total Vet. Cost/LE/head/season	704	466	400	728
Total costs/LE/head/season	11102	14766	16553	17033
Income				
Milk income/head/LE/season	14580	21600	16500	17325
Calving production/LE/season**	1800	3692	5000	2307
Manure output/head/LE/season	186	175	150	200
Total income/LE/head/season	16566	25467	21650	20147
Dairy outcome/LE/head/season	5464	10701	5097	3114

***Calculated for one labor salaried 1200 LE per month multiplies by the total number of animal labor**
**** Estimated upon current regional price of calf at birth**

Concentrate cost contributed the highest value of the total variable costs with an average over 12000 LE/head/ season. The lowest animal feed cost was for roughage didn`t exceed 1000 LE/head/season. The other portion of animal labor cost distributed highly amount of 1754 LE/head/season for cow herds in *El- Serw I* station. The lowest amount of animal labor cost was recorded in *Sakha* station (938 LE/head/season). Animal labor costs were recorded 1182 and

1160 LE/head/season for buffalo herds in *Mahalet Mosa* and *El- Serw II* stations. Veterinary costs represented by cow herd in *Sakha* and buffalo herd in *Mahalet Mosa* stations by 728 LE and 704 LE, meanwhile 466 and 400 LE per head per season in *El- Serw II* and *El- Serw I* station, respectively. Large amount of dairy outcome was contributed by buffalo herd in *El- Serw II* station (10707 LE) of *Damietta* governorate with milk income accounted 21600 LE, and 3692 LE for calving production per head per season. High price of buffalo milk (9 LE/L) added reasonable price of producing calves (an average 2746 LE/season) exposed superiority of buffalo as dairy animal integrated available recourses located in the studied stations. Cow are the prominent species for meat production explains high price of calves produced by cow (an average 3653 LE/season) represented as source of bovine meat in local markets.

CONCLUSION AND RECOMMENDATION

Largest dairy outcome accounted by buffalo herd in *El- Serw II* station of *Damietta* governorate (10701 LE per head per season) was proved by high income of milk production in addition to adequate price from producing calves validates buffalo as major dairy livestock to approach abundance price from livestock products hence improve profitability of production systems incorporated the studied stations. Cows were prominent for meat production. High price of calves produced from cows explain it being representative of municipal meat in local markets. Demonstrate fattening systems for produced calves enhance stations` income in parallel with income gained from dairy production. Providing capacity of land to cultivate green fodder to feed animals, particularly for dairy production, is of great importance to raise livestock profitability. It has to highlight productive aspectual of experimental stations to offset partial costs conducted for research studies. This requires initiate semi-commercial dealings to cover this part of costs, and as well enlarge stations` income.

AKNOWLEGEMENT

All appreciations and gratitude to Dr. Ahmed Ali, may Allah have mercy on him, the one who called to monitoring and evaluation of APRI`s experimental stations.

Grateful thanks to Dr. Alaa El-Tahan, head of APRI, for facilitating official procedures of the study progress.

Deep thanks to Dr. Maged Abdelhady, head of El-Serw station; Dr. Hamed Elshabrawy, head of El- Serw II station; Dr. Mohammad Awad, head of Sakha station; Dr. Tarek Ashmawy, head of Mahalat Mosa station, for their support on information during data collection step.

Thanks to Mr. Mohammad Taha, Department of Guidance and Planning at APRI, for his help on data- related inquiries of the studied stations.

REFERENCES

Aboul-Ela, M.B.; M.A. El-Wardani and H.Almahdy (2000). Characterization of management practices of buffaloes raised under traditional condition of small holding. Animal Production in the 21st Century Challenges and Prospects. Sakha, Kafr El-Shikh, Egypt. April 18-20, pp335–344.

AnGR (2003). First Report on the State of Animal Genetic Resources in the Arab Republic of Egypt. Food and Agriculture Organization of the United Nations and Egyptian Ministry of Agriculture and Agrarian Reform, Rome, Italy.

Ashley S., Holden S., and Bazeley P., (1999). Livestock in poverty-focused development. Livestock in development. Department for International Development, UK.

Borghese A., (2005). Buffalo production and research. REU technical series 67.

Daburon, A. (2013). Urban and Peri-urban Milk Producers of El Cairo City: an Efficiency Focus. M. Sc. Thesis, Annéeuniversitaire, Monpellier, France.

Das, G.C., Das, P.K., Deori, S., Mazumdar, H., Bhattacharyya, B. N., and Phookan, A. (2017). Seasonal Variation in the Characteristics of the Swamp Buffalo Semen of Northeast India. Buffalo Bulletin, 36(1), 215-219.

Debele, G., and Verschuur, M. (2014). Assessment of factors and factors affecting milk value chain in smallholder dairy farmers: A case study of Ada'a\ District, East Shawa Zone of Oromia regional State, Ethiopia. Afr. J. Agric. Res., 9(3), 345-352.

El-Keraby, F.; M.B. Aboul-Ela and L.H. Bedier (1981). The effect of diet on postpartum reproductive traits of buffaloes. Agricultural Research Review, 6: 1-13.

El Nahas, S. M., Vibras, M. A., and Taha, D. A. (2013). Genetic characterization of Egyptian buffalo CSN3 gene. J. Gene. Eng. and Bio., 11(2), 123–127.

Elsorougy, M.A. (2018). Analysis of animal nutrition systems for dairy production in the surrounding areas of Greater Cairo. Ph.D. Thesis, Ain shams University, Cairo, Egypt.

El-Wardani M.A., T.H. Shalaby and F.E. El-Keraby (2003). Herd dynamics of medium scale dairy farms under mixed farming system in the Nile delta region in: proceeding of the 6th International Livestock Farming Systems / Product quality bases on local resources and its potential contribution to improved sustainability, 26-29th August, Benevento, Italy, pp 363-371.

Fahim, N.H., S.A.M. Abdel-Salam, W. Mekkaw, Ahmed Ismael, S. Abou-Bakr, Manal El Sayed and M.A.M. Ibrahim (2018). Delta and Upper Egypt buffalo farming systems: a comparison survey. Egyptian J. Anim. Prod. (2018) 55(2):95-106.

FAO, (2010). Greenhouse gas emissions from the dairy sector: A life cycle assessment, by Gerber, P., Vellinga, T., Opio, C., Henderson, B. &Steinfeld, H. Rome, Food and Agriculture Organization of the United Nations (FAO), Animal Production and Health Division.

FAOSTAT | © FAO Statistics Division (2011).

FAOSTAT | © FAO Statistics Division (2014).

FAOSTAT | © FAO Statistics Division (2019).

Faye B. and Alary V., (2001). Les enjeux des productions animales dans les pays du Sud. *INRA Prod. Anim*., 14 (1) : 3-13.

Flori L., Moazami Goudarzi K., Lecomte P., Moulin C.-H., Thévenon M.- F., Alary V., and Casabianca F., *et al*., (2015). Adaptation of Mediterranean bovine livestock to climate constraints. Genetic diversity and breeding systems. In: Climate-Smart Agriculture, Global Science Conference, Corum, Montpellier, France, 16-18 March 2015.

Galal S., (2007). Farm animal genetic resources in Egypt: Factsheet. *Egypt. J. Anim. Prod.*, 44: 1-23.

Galal S., (2012). Dairy sector in Egypt: past and present development.In: Proc. Training Workshop Interdisciplinary Approach of Urban and Periurban Traditional Dairy Chain (Eds Alary V., Galal S., Tourrand J.-F.), Cairo, Egypt, 10-14 June 2012.

Mansour. H. (1997). Case study on cattle recording system in Egypt. International workshop on animal recording for smallholders in developing countries, Anand (India) 20 – 23 October. Technical Serious No. 1, P: 155– 164.

Mugisha, A., Kayiizi, V., Owiny, D., and Mburu, J. (2014). Breeding services and the factors influencing their use on smallholder dairy farms in central Uganda. Veterinary Medicine International. Article ID 169380, 6 pages.

Osman M.A., Alary V., Khalil M., Elbeltagy A., Tourrand J.-F., and Moulin C.-H., (2016). Adaptability and suitability of local cattle breeds in Egypt: Farmers and actors' perceptions and practices of the cattle value chain. *Rev. Elev. Med. Vet. Pays Trop*., 69 (3): 95-103.

Sraïri M.T., and Baqasse M., (2000). Evaluation du devenir et des performances de génisses laitières frisonnes importées au Maroc. *Livest. Res. Rural Dev*. (12) : 3. www.cipav.org.co /lrrd/lrrd12/3/sra123.htm.

Tabana, A.S. (2000). Development of a decision support system for individual dairy farms in mixed irrigated farming systems in the Nile Delta. Ph.D. Thesis, Wageningen University, Wageningen, The Netherlands.

Thornton P., (2010). Livestock production: recent trends, future prospects. *Phil. Trans. R. Soc*., 365: 2853-2867.

التقييم الفنى والإقتصادى لقطعان الماشية لبعض محطات البحوث التجريبية في مصر

محمد أنور السروجى[١]، مصطفى عبدالرازق إبراهيم خليل[١]، سحر أحمد عبدالرحيم[١] و محمد حلمى ياقوت[٢]

[١]قسم بحوث نظم الإنتاج الحيوانى ، معهد بحوث الإنتاج الحيوانى ، مركز البحوث الزراعية ، وزارة الزراعة وإستصلاح الأراضى ، الدقى ، الجيزة ، مصر.

[٢]قسم بحوث إستخدام المخلفات ، معهد بحوث الإنتاج الحيوانى ، مركز البحوث الزراعية ، وزارة الزراعة وإستصلاح الأراضى ، الدقى ، الجيزة ، مصر.

أجريت هذه الدراسة كبداية لتقييم قطعان الماشية لمحطات البحوث التجريبية التابعة لمعهد بحوث الإنتاج الحيوانى- وزارة الزراعة للوقوف على المعوقات وإستحداث الفرص لتحسين الإنتاجية بمفهوم إقتصادى. إستهدفت الدراسة تقييم قطعان الأبقار والجاموس لمحطات سخا ومحلة موسى بمحافظة كفر الشيخ, محطات السرو١ والسرو ٢ بمحافظة دمياط. تنوعت قطعان الماشية مابين الأبقار المحلية والفريزيان (الخليط) فى محطة السرو ١, الفريزيان (الخليط) و الأنجس (الخليط) فى محطة سخا, الجاموس فى محطتى محلة موسى والسرو ٢. مثل إنتاج الألبان ٤٧% من حجم القطعان للمحطات المدروسة, بينما ٣٩% للعجلات الإناث و ١٠% للعجول الذكور. سجل محصول اللبن ٣١٥٠ لتر للرأس / موسم لقطيع الأبقار بمحطة سخا, تبعه ٣٠٠٠ لتر, ٢٤٠٠ لتر, ١٦٢٠ لتر لقطيع الأبقار بمحطة السرو ١, الجاموس بمحطتى السرو ٢ ومحلة موسى, على الترتيب. أعلى ربحية من إنتاج اللبن (١٠٧٠١ جنيه/ رأس/ موسم) كانت لقطيع الجاموس بمحطة السرو ٢ تبعا للعائد من إنتاج اللبن وإنتاج العجول بما يدعم أهمية الجاموس كحيوان لبن أساسى للوصول إلى سعر مرتفع من المنتجات الحيوانية. كانت الأبقار هى النوع الممثل لإنتاج اللحوم حيث تباع العجول بأسعار مجزية كمصدر للحوم البلدية فى الأسواق المحلية. أظهرت نتائج الدراسة أهمية إدراج نشاط شبه تجارى يساهم فى تغطية جانب من التكاليف المخصصة للأبحاث التجريبية وأيضا زيادة دخل المحطات.

الكلمات الدالة: قطعان الماشية، محطات البحوث التجريبية، الربحية