Questionnaire study of main problems and difficulties that faces the buffalo breeding in the middle of Iraq

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Abstract. The current study was conducted in the middle of Iraq during the period of 21/8/2017 to 30/4/2018 to determine the most important problems that faced buffalo breeding. Ninety questionnaires forms including 21 important questions were distributed to the best 90 breeders selected from buffalo breeders in two locations, 1st location is Um-khashim region which located in AL-Najaf province while the 2nd location was AL-Mehanawia region which located in AL-Qadissya province. The total number of buffalo in herds that studded was 2160 head with average number is 24 head / breeder. Chi-square test was used to determine the significant differences depending on the breeders answers. The results showed that a significant difference (P<0.01) and (P<0.05) in breeders answers for all questions in this study except the answer about the herd size which came convergent with no significant difference. Most of answers of breeders in this questionnaire study came harmonious with previous studies and showed that the general performance is decline in Iraqi buffalo compared with the standard performance and the answers provides us a clear indicator to a real and complex problems which prevent the improving of Iraqi buffalo.

1. Introduction
Buffalo is the main dairy animal in many countries around the world especially in Asia because more than 95.8% of the world population of buffalo are kept in Asia [1]. Generally, there are 74 breeds of water buffalo around the world [2]. In Iraq, buffalo is domesticated before Christ and it present the most productive animal since it domestication [3]. Iraqi buffalo widespread in south region where rivers and marshes and is characterized with high milk fat percent [4]. Total number of buffalo in Iraq during the year 2008 was about 285537 head and 60% of totals number is distributed mainly in six provinces : 20.2, 17.3, 8.5, 7.5, 4.1 and 2.4% in Basra, Thi-Qar, Maysan, AL-Njaf, AL-Qadissya and AL-Muthana respectively [5].

Many studies referred that the number of buffalodecreased continuously because of multiple factors such as the wild behavior of this animal, bad management, deficiency of food, absence of genetic improving and prevalence of diseases [6]. Reproductive problems of buffalo such as silent estrous or abortion rate it'scontribute with decadence of buffalo breeding in this country. All of these reasons make the buffalo breeders quitclaimed of this animal and trend to cow or sheep breeding instead of buffalo. The major aim of this study is to highlights on the problems and difficulties that faced buffalo breeding through a
questionnaire survey and use the answers as a guidelines or indicators to improve the performance under farming conditions.

2. Materials and methods:
The current study was conducted in the period of 21/8/ 2017 to 30/ 4/ 2018. Ninety questionnaires forms including 21 important questions (Table-1) were distributed to the best 90 breeders selected from buffalo breeders in two locations, 1st location is Um-khashim region which located in AL-Najaf province while the 2nd location was AL-Mehanawia region which located in AL-Qadissya province. The two regions are likely the same in environment circumstances, farming types and social mores. The total number of buffalo in herds that studded was 2160 head with average number is 24 head / breeder.

The answers of breeders were fixed with high accuracy and the data were analyzed statistically by [7] computer program and Chi-square test was used to determine the significant differences depending on the breeders answers (Table 1).

Table 1. The questions and answer types of buffalo breeders.

| Question                  | Answer                        |
|---------------------------|-------------------------------|
| Herd size                 | Big (40head)                  |
| Rate of milking buffaloes | Less than 20%                 |
|                           | Middle (20-39 head)           |
|                           | Small (20 head)               |
| Possession of farm        | Yes                           |
| Pastures available        | Yes                           |
| Veterinary clinics        | Yes                           |
| Periodicity vaccination   | Yes                           |
| Purpose of herd           | Milk production               |
| Governmental support      | Yes                           |
| Economical income         | High                          |
| Fitness of food price     | Yes                           |
| Using of modern methods   | Yes                           |
| Problems about food       | Yes                           |
| availability              | No                            |
| Type of feed              | Concentrate and straw         |
|                           | Concentrate, green and straw  |
|                           | Green and straw               |
| Records availability      | No                            |
| Weight at calving         | More than35                   |
| Service type              | Artificial                    |
| Sires inside herd         | Yes                           |
| Service per conception    | 1                             |
| Calving intervals         | 13-14 month                   |
| Reproduction problems     | Early abortion                |
| Enclosures type           | Open                          |
|                           | Semi open                     |
|                           | Closed                        |

3. Results and Discussions
The results showed that a significant difference in breeders answers for most questions in this study. Through the answers we can conclude that the most of breeders were possess a herds with middle size (20-39 head) while a few of them were possess herds with big size (more than 40 head). 60 of breeders reported that the rate of milking buffalo in herd is between 20 – 40% (Fig.2), the results also indicated that 66 of them were possess a good farms compared with 22 of them did not possess a farms and they hire the farms which found near of their houses.70 of breeders insisted on the absence of pastures and 80 of them
referred that a veterinary clinics were found, all of these clinics are private while 78 of them were made the periodicity vaccinations (Fig.5 and Fig.6).

In fig.7 we can see that the main purpose of buffalo breeding for milk production. Most of breeders (85) are ingather to the absence of governmental support (Fig.8) while in Fig.9 and Fig.10 we can notice that 50 of breeders are get a mid economical income and they beef from the high price of feed. The results also showed that about 85 of breeders were used the classical methods in breeding compared with only 5 breeders were use the modern methods and new techniques such as automatic feeding or automatic milking (Fig.11). 59 of the breeders used the concentrate feed (grinded grain, wheat bran and rice bran) and green feed (alfa alfa, clovers and barley) while the roughage feed were added at libitum (Fig.12). 65 of the breeders mentioned that they bide a real problems about feed availability (Fig.13) while the most of them (85) did not use the farm records normally but they depend on the extraneous notices and all of them did not use the computer programming. Results showed that 85 of breeders used the natural service (Fig.16), 69 of them depend on proved sires inside them herds (Fig.17) and 49 of them reported that they need two service per conception compared with 27 of them reported that they need just one service per conception while 14 of them indicated that they need three or more service per conception (Fig.18).

Results of this study produced an evidence to long calving interval where 32 of breeders reported that the calving interval was continue to more than 14 month compared with 58 of them reported that the period is range from 13-14 month (Fig.19).

![Figure 1. herd size](image1)

![Figure 2. Rate of milking buffaloes](image2)
Figure 3. Possession of farm

Figure 4. Veterinary clinics

Figure 5. Pastures available

Figure 6. Periodicity of vaccinations
Figure 7. Purpose of herd

Figure 8. Governmental support

Figure 9. Economical income

Figure 10. Fitness of food prices
Figure 11. Using of modern techniques

Figure 12. Type of food

Figure 13. Problems about food availability

Figure 14. Records availability
Figure 15. Calving weight

Figure 16. Service type

Figure 17. Sires inside herd

Figure 18. Service per conception
Through the current results we can detect three main reproduction problems, 42 of breeders referred to late abortion as a major cause of calves loss and 23 of them referred to the early abortion while 25 of them referred to dystocia (Fig. 20). Finally, the results of this questionnaire clarified that the dominant type of enclosures were the semi open with free housing in the most of herds of buffalo (Fig. 21).

Depending on the results of this study we can trace that the rate of milking buffalo in studded herds was low compared with the international ratio which about 60% from total herd, the results were similar with the results of [8] and [9] who reported that the ratio was 40% and 34.66% respectively. The deficiency of milking buffalo in herd less than 60% reflect a real problems because the little economical income and make the culling process more difficult. Results showed a decrease in total herd size compared with the other countries and dissimilar with the results of [10] who referred that the average herd size in Italy, Syria and Iran about 160, 35 and 34 head respectively. Although the Iraqi buffalo are characterized with inimitable traits but it's still suffer from ignoring and absence of governmental support or improving the feed quality [11].

Previous results claimed that the reproductive performance in Iraqi buffalo is decline with an increased the service per conception, calving interval and other reproductive parameters which leads to many reproductive problems such as late or early abortion and

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**Figure 19.** Calving interval period

**Figure 20.** Common reproductive problems

**Figure 21.** Enclosure type
dystocia. In the same context,[12] reported that the reproduction performance in Iraqi and Egyptian buffalo is affected by environmental temperature variation and the estrous cycle differed according to the season while [13] noticed to the relationship between reproduction and production in buffalo and insisted that the environment, feeding system, management practices and culling levels should be taken in consideration when we think to develop the buffalo. [14] reported that the reproductive problems were more frequently occurred in crossbreed than local breed and indicated that the poor body condition score leads to increase the reproduction problems in buffalo and other dairy cattle and the results were in agreement with those of [15] who reported that many factors effecting on reproductive performance such as environmental factors, genetic and management.

4. Conclusions
Most of answers of breeders in this questionnaire study came harmonious with previous studies and showed that the general performance is decline in Iraqi buffalo compared with the standard performance and the answers provides us a clear indicator to a real and complex problems which prevent the improving of Iraqi buffalo.

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Reference
[1] Broghese I 2008 The buffalo a social animal for the humanity. Buffalo Newsletter. 12 17-23.
[2] Gurcan E Ket al 2011. The morphometric characterization of Anatolian water buffalo according to body measurements. J.of Tekirdağ Agricultural Faculty 8(2) 143-152.
[3] AL-Saedy JKh 2007 Iraqi buffalo now. Italian Journal of Animal Science 6 sup2 1234-1236.
[4] Avadesian G Aet al 2012 The effect of some environmental factors that effecting daily milk yield of Iraqi buffalo in Ninewah. Iraqi J. Vet. Med. 3(2) 180-186.
[5] Ministry of Agriculture 2008 Annual national survey and static for animal resources. Republic of Iraq Baghdad.
[6] Borghese I and Mazzi M 2005 Buffalo Population and Strategies in the World. Borghese A (ed.) Buffalo Production and Research REU Technical Series 67 Inter-regional Cooperative Research Network on Buffalo FAO Regional Office for Europe, Rome.1-39.
[7] SAS 2012 SAS / STAT `Users’ Guide for Personal Computers. Release 6.12. SAS Institute Inc. Cary, NC, USA.
[8] AL-Anbari NNet al 2011 Herd structure and replacement rate and effect on production performance. Annual conference for buffalo development. Ministry of Agriculture. State of animal resources Iraq.11-19
[9] Baghdasar G et al 2017 Effect of location on some of production traits in Iraqi native buffalo. J. of Agri. Sci. 1 230-238.
[10] Brghhesel 2009 Present situations and futures prospective Murrah buffaloes. Livestock Res. For rural development 22 (1) 1-7.
[11] Baghdasar G et al 2014 Effect of location and herd structure on daily milk yield in Iraqi buffalo in the year 2013-2014. J.of Agri. Sci. 45(4) 240-246.
[12] Marai I F M and Haeeb A A M 2010 Buffalo’s biological functions as affected by heat stress - A review. Livestock Science. 127 89–109.
[13] Valsan J and Chandrashekar P 2015 Influence of non genetic factors on performance traits in Murrah buffaloes. Indian J. Anim. Res. 49 (3) 279-283.
[14] Alam M et al 2016 Clinical investigation of reproductive cases in cows and buffaloes at teaching veterinary hospitals in India. J. of Dairy Vet. & Anim. Res. 4(1) 227–231.
[15] Basant MN et al 2017 Environmental factors affecting some productive and reproductive traits in Egyptian buffaloes. Benha. Vet. Med. J. 32(1) 153-159.