



MONTHLY CHANGES IN LIBIDO AND SEMEN CHARACTERISTICS FOR HOLSTEIN BULLS BORN IN IRAQ OF DIFFERENT REPRODUCTIVE EFFICIENCIES

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ABSTRACT

A study carried out at artificial insemination center / Abou-Gharib/western of Baghdad. Total of (410) ejaculates were collected using artificial vagina from (13) Holstein bulls born in Iraq, which is divided into three different reproductive groups (High, mediate and poor). Libido and semen characteristics (volume, mass and individual motility, dead, abnormality and sperm concentration) for these bulls had followed along different year months. Results revealed that there are a monthly changes in libido and semen characteristics for these bulls, hot months had a negative effect on all bulls, but with a less degree for a high efficiency bulls and a higher degree for a poor efficiency bulls, the study also appeared that it's possible to run in semen collection from bulls during all months of the year except the August (high efficiency bulls) and August, September for (medium efficiency bulls) and June, July, August, September and November for (poor efficiency bulls).

KEY WORDS: Monthly changes, semen characteristics, Holstein bulls, Iraq.

INTRODUCTION

Artificial Insemination (AI) had opened a new many aspect in animal breeding process through enhancing selection activity that become a huge economical importance in improving productive characteristics for local animals in a short time interval in comparison with natural insemination. The AI success basically depends on getting a semen of a highly fertile capability that affected with many factors such as temperature (Rollinson *et al.*, 1970; Bearden 2004) and the month (Rollinson, 1970; Sidhu and Guray, 1979; Nath, 1980; Rao and Rao, 1980) but another studies have not observed any effect of month on the semen characteristics of bulls (El- Keraby, 1966; Reksen *et al.*, 1999; Jainudeen and Hafez, 2000). For improving productive characteristics of local cows, Iraq had depend on importing foreign breed such as Holstein, it is known that reproductive performance for these animals was differed in its original home compared with other country. More over Iraq have been characterized with a long hot dry summer (Wallen and Perrin 1962) and a high solar radiation intensity (Kassab *et al.*, 1968) which differs in Iraq from month to other and year to other. Garcia-Peniche *et al.* (2005) had indicated that Holstein are animals of the more effected with heat stress. This result have been confirmed in several studies which were carried out in Iraq on reproductive performance of Holstein bulls from 1968-1999 (Dessouky and Juma, 1968; Juma and Dessouky, 1969; Rollinson *et al.*, 1970; AL-Badry, 1998; AL-Janabi *et al.*, 1999). Its observed from these studies that some semen characteristics affected with these monthly variation, and some had none, also there are no successive modern studies in this aspect, since these anciently years have an effect on the reproductive efficiency of bulls (AL-Badry 1998; Violeta, *et al.*, 2010), since with years progress it should be makes an environmental changes whether in

temperature aspect or humidity or photoperiod all of these has role in effecting the reproductive performance of the animals in general and AI in specific (Noakes *et al.*, 2001; Carlsen *et al.*, 2003). In addition to that these studies had not deal an importance with individual variations in the reproductive efficiency of AI center bulls in Iraq, AL-Badry *et al.*, (2012) reported that these bulls in spite of their similarity in breed, age, weight, housing and nutrition but it differs in their reproductive efficiency, that there are a (high, medium and poor) efficiency bulls in semen production, and for that the study had suggested which aimed to know if there is a month effect on libido and semen characteristics for these bulls, and if this effect differs from group to other with result defining the months that to be running or skipping semen collection from each group. Since stop collection semen from all bulls, as soon as observation an efficiency depression of a number of bulls in any months or running in semen collection from all bulls along the year, although deterioration of numbers of bad ejaculates, in both cases it means an economic losses of AI center, this study also had role in scientific research planning at that aspect with the result the study has an importance in developing AI programs in Iraq.

MATERIALS AND METHODS

A study were carried out in AI center –Abou-Gharib district for the period December 2011-June 2012 which included the following of libido and semen characteristics for thirteen Holstein bulls born in Iraq along all months of one year. All animals were managed and reared under same environments they were at age range between 32-36 months. Knowing that bulls were divided into three groups according to their reproductive efficiency (five bulls of high efficiency, four bulls of medium efficiency and four bulls of poor efficiency). Semen collection using artificial vagina once a weak along the experiment period,

that were collect 410 ejaculates and cease collection for two weeks during protective vaccinations performed, and before each collection procedure libido were evaluated depending on response period for semen ejaculation in the artificial vagina and according to Nwakalor *et al.*, (1979) , and after collection the following characteristics has been studied : semen volume, mass and individual motility (Salisbury *et al.*, 1978), dead of sperm (Campbell *et al.*, 1953), abnormality of sperm (Blom, 1950) and sperms concentration/ml (Smith and Mayer, 1955). Data were statically analysis (ANOVA) according to (SAS, 2000) using Duncan test for comparing between means under probability level of ($P < 0.05$).

RESULTS

Study results that related with libido and semen volume were clarified in table (1), mass and individual motility at table (2), dead and abnormality sperm percentage at table (3) and sperms concentration/ml at table (4), it revealed from these tables the following:

Libido

Its known that libido was basically measured on time interval for semen ejaculation in the artificial vagina, normally whatever short it was indicates high libido and for that its observed from table (1) that a highly efficiency bulls have significantly ($P < 0.05$) better libido during the months (October, November, December, February, March and April) were as its significantly ($P < 0.05$) lowered at (June, July and August) also its revealed a significantly ($P < 0.05$) variation between each of (November and December) as compared with (January, May, June, July, August and September) and also there is a significantly ($P < 0.05$) variation between (February, March, April and May) as compared with (June, July and August) but other variations wasn't significant table (1). Also table (1) appeared that medium efficiency bulls were significantly ($P < 0.05$) higher libido during November month as compared with December and January months, and also from April upon November. It's also observed from the mentioned table that libido for these bulls were highly significantly ($P < 0.05$) in February and March months as compared with months June up to September, but as regards with months December, April, May and October was significantly ($P < 0.05$) differed from that months January and from June up to September. But as regards with a poor efficiency bulls libido during moths November, December, February, March and April were highly significantly ($P < 0.05$) than that of other months and January as compared with months May, July and August (table 1), in other comparisons there are calculated variations between them but it's not significantly.

Semen Volume

This trait results are clarified at table (1) it's obviously that semen volume for a highly efficiency bulls in the months February, March, April, May, December and January were significantly ($P < 0.05$) different of that months: June, July August, September, October and November and also months June and November were significantly ($P < 0.05$) different of that months August, September and October, whereas its recorded significantly ($P < 0.05$) less volume at September in comparison with months July, October and November and also August as compared with June and November(table 1), whereas

other difference wasn't significant, but as related with medium efficiency bulls as cleared in the table (1) its noticed that semen volume for this bulls in months April, May, November and December were significantly ($P < 0.05$) higher than at January, July, August and September and months April and November as compared with January, February, June, July, August, September and October in addition to that semen volume at October, February, March, May and June were significantly ($P < 0.05$) higher than that in September, whereas September would significantly ($P < 0.05$) differed than that in July and August. From observation table (1) it illustrates that the higher semen volume for poor efficiency bulls during months May and November were significantly ($P < 0.05$) differed of that months December, January February, June, July and August were as the other variations was calculated and not significant.

Mass and Individual motility

From observation table (2) it revealed that mass and individual motility sperm for highly efficiency bulls were better during months February and March which they recorded a significantly ($P < 0.05$) increase in these two months as compared with months June, July, August, September and October and the mass motility of sperm were significantly ($P < 0.05$) better at months December, January, April and May as compared with months July, August, and September were as individual motility of these bulls sperms showed a significantly ($P < 0.05$) increase at

months January, February, March, and April as compared with months July, August, September and October, also the individual motility had significantly ($P < 0.05$) preeminence at months June and November of that in July, August and September were as other variation was not significant in both traits, but as with regards to mass motility sperm of medium efficiency bulls, it is recorded a significantly ($P < 0.05$) increase at April in comparison with June, July, August, September, October, November and January (table 2) and at February and March were significantly ($P < 0.05$) differed of that months June, July, August, September and January, in same table results revealed that mass motility at months June and July was significantly ($P < 0.05$) lowered than that in other months except December and January also significantly ($P < 0.05$) differed at August which recorded less mass motility of sperms as compared with other months except at months January and July, but as related with individual motility of sperms for these bulls table (2) its noticed that during months April and March was significantly ($P < 0.05$) higher than that in months June, July, August, October and November and the situation is same with regards to December as compared with months June, July August and November also significantly ($P < 0.05$) differed at February and May of that in months July, August and November, but as with regards to mass motility of poor efficiency bulls sperms and as cleared in table (2). its showing that was significantly ($P < 0.05$) increased during months December, April and May of that in all months except at November which is no significant different of

TABLE 1: monthly variation in libido and semen volume for Holstein bulls borne in Iraq

Months	Libido (sec)				Semen volume (ml)			
	High bulls	Medium bulls	Poor bulls	High bulls	Medium bulls	Poor bulls		
December	33.00 ± 19.57 d	64.75 ± 19.90 bcd	78.50 ± 21.15 c	7.01 ± 0.77 ab	6.70 ± 0.43 ab	4.90 ± 0.66 b		
January	63.60 ± 19.78 b	86.50 ± 17.28 a	103.67 ± 18.56 b	7.82 ± 0.50 ab	4.22 ± 0.43 cd	4.98 ± 0.65 b		
February	41.22 ± 17.42 cd	58.60 ± 11.12 de	76.33 ± 12.83 c	7.76 ± 0.56 ab	5.30 ± 0.51 bc	4.44 ± 0.65 b		
March	47.60 ± 14.21 cd	57.66 ± 10.50 de	66.70 ± 14.43 c	8.03 ± 1.02 a	5.89 ± 0.80 bc	5.78 ± 0.77 ab		
April	42.52 ± 16.21 cd	62.16 ± 18.90 bcd	67.33 ± 10.10 c	7.22 ± 1.22 ab	7.44 ± 1.08 a	5.18 ± 0.91 ab		
May	53.21 ± 17.18 c	66.30 ± 18.40 bcd	123.67 ± 10.51 a	8.01 ± 1.28 a	6.55 ± 0.54 ab	6.11 ± 0.67 a		
June	82.11 ± 14.27 a	80.03 ± 11.02 a	118.03 ± 18.00 ab	6.44 ± 1.01 c	5.98 ± 0.80 bc	4.44 ± 0.57 b		
July	73.10 ± 16.22 a	96.03 ± 12.11 a	125.98 ± 20.80 a	5.78 ± 0.79 cd	4.19 ± 0.61 cd	4.88 ± 0.33 b		
August	93.56 ± 17.47 a	108.05 ± 29.16 a	126.50 ± 13.29 a	4.88 ± 0.44 de	4.22 ± 0.19 cd	5.33 ± 0.24 ab		
September	56.32 ± 11.29 bc	88.66 ± 25.61 a	116.67 ± 27.67 ab	4.33 ± 0.31 e	3.99 ± 0.43 d	5.21 ± 1.01 ab		
October	40.22 ± 17.77 cd	60.11 ± 17.65 cd	118.22 ± 29.21 ab	5.28 ± 0.21 d	5.44 ± 0.33 bc	4.00 ± 0.46 b		
November	30.89 ± 16.17 d	40.91 ± 11.85 e	80.77 ± 19.83 c	6.55 ± 0.41 c	7.22 ± 0.83 a	6.01 ± 0.66 a		

Values are mean ± SE.

Within the same column with different small letters differ significantly at (P<0.05).

TABLE 2: monthly variation in mass and individual motility for Holstein bulls borne in Iraq

Months	Mass motility (%)				Individual motility (%)			
	High bulls	Medium bulls	Poor bulls	High bulls	Medium bulls	Poor bulls		
December	77.34 ± 10.55 ab	67.43 ± 7.88 abc	62.66 ± 9.43 a	84.19 ± 9.65 a	71.29 ± 12.00 abc	64.11 ± 9.76 a		
January	76.98 ± 12.66 ab	52.63 ± 10.00 def	40.28 ± 10.04 cd	82.32 ± 10.45 a	63.33 ± 12.50 bcd	42.64 ± 10.21 cd		
February	82.31 ± 14.77 a	70.22 ± 7.43 ab	50.45 ± 8.66 bc	84.43 ± 13.54 a	69.39 ± 10.41 bcd	52.56 ± 12.30 bc		
March	80.00 ± 9.31 a	70.99 ± 9.60 ab	50.66 ± 6.89 bc	81.98 ± 12.09 a	72.19 ± 9.51 ab	51.33 ± 9.67 bc		
April	76.55 ± 11.89 ab	73.41 ± 8.09 a	59.99 ± 4.87 a	84.54 ± 10.49 a	77.23 ± 3.56 a	60.39 ± 10.40 ab		
May	76.93 ± 12.00 ab	66.09 ± 9.52 abc	58.41 ± 7.88 a	80.53 ± 9.92 ab	67.33 ± 10.44 abcd	60.49 ± 12.04 ab		
June	67.63 ± 5.86 bc	60.34 ± 10.00 bcd	40.33 ± 8.66 cd	74.56 ± 14.32 ab	60.39 ± 7.93 def	42.21 ± 8.91 cd		
July	60.88 ± 9.22 c	50.78 ± 9.88 ef	35.44 ± 10.01 d	63.60 ± 10.89 cd	53.35 ± 12.54 fg	39.32 ± 10.31 d		
August	62.22 ± 6.44 c	45.76 ± 10.02 f	34.89 ± 11.22 d	63.81 ± 9.88 cd	48.72 ± 12.32 g	39.10 ± 12.33 d		
September	60.34 ± 5.09 c	58.23 ± 2.59 cde	38.41 ± 9.87 d	65.21 ± 11.66 d	59.07 ± 8.94 def	40.45 ± 9.89 d		
October	66.76 ± 7.76 bc	60.31 ± 8.54 bcde	40.67 ± 8.99 cd	70.19 ± 10.33 bcd	61.39 ± 10.20 cdef	45.22 ± 10.22 cd		
November	69.24 ± 8.05 abc	61.08 ± 9.88 bcd	60.34 ± 6.89 ab	77.75 ± 16.42 ab	65.59 ± 3.77 efg	65.02 ± 8.89 ab		

Values are mean ± SE.

Means within the same column with different small letters differ significantly at (P<0.05)

months December, April and May but its recorded a significantly ($P<0.05$) increase of that in months January, June, July, August, September and October and also months February and March showed a significantly ($P<0.05$) superiority of that in months July, August and September, but as regards with individual motility of these bulls sperms, that was in December significantly ($P<0.05$) higher of all months except at months April, May and November which significantly ($P<0.05$) differed of that in months January, June, July, August, September, and October, but other comparison for mass and individual motility there are a variation but it's not significant (table 2).

Dead sperms

Results of monthly variation in percentage of dead sperms were clarified at table (3) that illustrates during months December, January, February, March, April and May were percentage of dead sperms of highly efficiency bulls were significantly ($P<0.05$) less than that in months June, July, August, September and October and months June and October in comparison with August, but as with medium efficiency bulls the months March and April showed less dead sperms significantly ($P<0.05$) as compared with other months table (3) and February and March with other months except May was not significantly differed with February were as October significantly ($P<0.05$) differed with July and August, but poor efficiency bulls were less percentage of dead sperms at November that is significantly ($P<0.05$) differed than that all months also December and April significantly ($P<0.05$) differed with all months in addition to March significantly ($P<0.05$) variation with all months except February, also its obvious from the same table that June, July August and September were highly significantly ($P<0.05$) compared with others months come after sequences October, and January table (3). On the other hand the differences in the percentage for all bulls' sperms are not significant.

Abnormality sperms

it's observed from table (3) that abnormality sperms of a highly efficiency bulls in months January, February and April were significantly ($P<0.05$) differed than at months June, July, August, September, October and November and also the difference was significantly ($P<0.05$) between November and the months June July, August, September and October moreover June had significantly ($P<0.05$) differed than that in August and September and July than that in August that the last showed a higher percentage of abnormality sperms were as medium efficiency bulls showed less abnormality percentage in

March and April months that they significantly ($P<0.05$) differed than all months. It's also noticed that May was significantly ($P<0.05$) differed of that at months June, July and August and months February and October of that at months July and August in addition to that the variations were significantly ($P<0.05$) between September and August, but the poor efficiency bulls were less abnormality sperms at December and April that are significantly ($P<0.05$) differed than that of all months except November and February but November had significantly ($P<0.05$) differed than that at months May, June, July, August, September, October and January and also significantly ($P<0.05$) differed at February and March as compared with June, July, August, September, October and January and significantly ($P<0.05$) differed at May in comparison with June, July, August, September and October were as all other difference in abnormality in sperms was no significant (table 3).

Sperm concentration

Results of this trait are clarified in the table (4) which observed that sperm concentration of a highly efficiency bulls at May were significantly ($P<0.05$) differed than that at months January, July, August, September, October and November and significantly ($P<0.05$) differed at April than that at January, June, August and September were as significantly ($P<0.05$) differed at October and November of that at July, August and September also the variations were significantly ($P<0.05$) between July and September than that at August, also its obvious from the same table that sperms concentration of medium efficiency bulls were significantly ($P<0.05$) higher at March and April as compared with other months and also May and December with that of other months but wasn't significant differed with November, whereas December significantly ($P<0.05$) differed with months June, July and August in addition to table (4) showing a significantly ($P<0.05$) variation between January and February, July, August and September also between June and July, August and September but as with regards to poor efficiency bulls, it's found that sperms concentration during months March, April and December were significantly ($P<0.05$) higher as compared with other months and its noticed that difference between February, May and November and the other months were significant ($P<0.05$). Difference also at January was significant ($P<0.05$) as compared with August and between June and August, whereas the other differences in sperms concentration are calculated and no significant (table 4).

TABLE 3: monthly variation in Dead and Abnormality of sperms for Holstein bulls borne in Iraq

Months	Dead sperms (%)			Abnormality sperms (%)		
	High bulls	Medium bulls	Poor bulls	High bulls	Medium bulls	Poor bulls
December	8.23±2.10 c	17.45±4.91 de	25.11±9.23 e	6.13±2.90 de	17.45±4.91 ef	15.00±4.03 e
January	9.45±1.44 c	26.11±7.76 b	38.32±7.32 b	7.34±1.79 e	26.11±7.89 a	24.22±7.38 b
February	7.88±2.06 c	18.41±4.32 de	30.32±6.77 cd	5.21±1.14 e	18.41±4.32 def	18.44±6.07 cde
March	10.45±2.69 c	11.55±4.78 f	29.87±7.21 d	8.56±2.09 de	11.55±4.78 g	19.17±7.01 cd
April	7.77±2.01 c	10.89±5.47 f	22.56±6.76 e	5.17±1.01 e	10.89±5.49 g	15.51±5.32 e
May	8.53±3.00 c	16.98±6.21 e	34.55±8.97 c	6.22±1.34 de	16.96±6.21 f	22.34±7.19 bc
June	16.29±4.22 b	21.76±6.65 cd	40.11±9.43 ab	13.09±3.65 c	21.76±6.64 bcd	30.41±8.45 a
July	20.38±5.03 ab	23.11±7.65 bc	43.22±8.21 a	14.67±3.32 bc	23.11±7.65 abc	32.66±9.11 a
August	22.41±6.02 a	30.89±8.34 a	44.11±8.33 a	19.67±4.55 a	25.87±7.44 ab	30.00±8.33 a
September	18.93±6.01 ab	30.31±7.33 a	41.44±8.66 ab	17.35±4.01 ab	20.21±5.11 cdef	32.12±7.59 a
October	16.11±3.55 b	18.70±3.54 de	36.22±8.23 b	16.11±3.50 abc	18.26±4.04 def	29.60±7.32 a
November	9.64±3.22 c	16.56±4.33 e	18.98±5.67 f	9.64±2.33 d	16.79±5.01 f	17.89±5.05 de

Values are mean ± SE.

Means within the same column with different small letters differ significantly at (P<0.05)

TABLE 4: monthly variation in sperms concentration ($\times 10^6$) for Holstein bulls borne in Iraq.

Months	Bulls		
	High bulls	Medium bulls	Poor bulls
December	1550.77 $\pm$ 98.66 abc	879.77 $\pm$ 92.22 b	590.99 $\pm$ 86.08 a
January	1490.34 $\pm$ 88.67 c	678.79 $\pm$ 89.55 e	330.06 $\pm$ 78.48 bcde
February	1577.44 $\pm$ 79.30 abc	790.45 $\pm$ 77.65 bcd	400.55 $\pm$ 68.84 b
March	1570.34 $\pm$ 100.02 abc	1100.09 $\pm$ 94.43 a	602.32 $\pm$ 72.22 a
April	1611.98 $\pm$ 89.77 ab	1100.69 $\pm$ 88.23 a	689.78 $\pm$ 67.89 a
May	1630.66 $\pm$ 78.85 a	860.49 $\pm$ 70.87 b	401.32 $\pm$ 54.98 b
June	1575.43 $\pm$ 88.98 abc	680.33 $\pm$ 76.59 de	280.34 $\pm$ 69.59 cde
July	770.93 $\pm$ 90.56 d	500.23 $\pm$ 68.96 f	200.32 $\pm$ 43.45 ef
August	600.69 $\pm$ 87.88 e	430.86 $\pm$ 59.88 f	184.65 $\pm$ 52.69 f
September	877.43 $\pm$ 100.43 d	500.65 $\pm$ 78.81 f	202.11 $\pm$ 41.21 ef
October	1521.23 $\pm$ 98.65 bc	720.32 $\pm$ 96.02 cde	219.89 $\pm$ 49.02 de
November	1523.55 $\pm$ 101.20 bc	800.30 $\pm$ 78.98 bc	412.23 $\pm$ 61.22 b

Values are mean $\pm$ SE.Means within the same column with different small letters differ significantly at ($P < 0.05$).

DISCUSSION

Results clarified that there are monthly changes in libido for all bulls were used in study, these were emphasized and found by Ali *et al.*, (1981) which indicated that libido of bulls were differed between months and deterioration had occurred in it for all bulls during hot months. Murray, (1997) assured that the depression in libido during hot months may referred to the adverse effect of heat that caused a depression in testosterone hormones level. As with monthly changes results in semen volume also depression had taken place in hot months significantly and these are agreement with Meyerhoeffer *et al.*, (1985) but as regards with monthly changes in another semen characteristics in addition to study have approached that there are a significant differences in the traits for months to other, this is may be referred to the changes in the external environmental factors such as photoperiod that changes according months (Noakes *et al.*, 2001) and changes in temperature (Gwazdauskas *et al.*, 1980, Carlsen *et al.*, 2003) that is observed presence of significant variations between months in mass and individual motility this have been emphasized by several researchers (Tomar *et al.*, 1966; Everett *et al.*, 1978; Menendez *et al.*, 1978) also in present study we found that the best sperms motility was during October, November and December and this matches with that found by Andraba *et al.*, (2002), it also noticed from this study that sperms concentration was affected by monthly changes which it was better during all months but its significantly depressed during months June, July, and August and that is in agreement with Andraba *et al.* (2002), in addition to its obvious from study results that semen characteristics were better during moderate hot and cold temperature and its better in cold months than hot, that's observed in months January which is considered the coldest month in Iraq. Bath and Chery, (2002) and Monhanty *et al.* (2011) had emphasized that semen quality were better in cold months than in hot, but a very cold months could have a negative effect due to the cold stress, also photoperiod and feed quality could have a negative effect on the spermatogenesis, but Eric *et al.* (2010) found that monthly changes in volume of semen, sperm concentration and abnormality sperm were not significant this may attribute

to the difference in breeds and environmental condition of two country. Vilakazi, (2003) had indicated that the degree effect of the months changes on the reproductive efficiency of bulls differs with breed of bulls. Generally study results illustrates that hot months have a negative effect on libido and semen characteristics (semen volume, mass and individual motility, dead sperms, abnormality sperms and sperms concentration) for all bulls, the testicular tissue temperature must be less than animal body temperature since its necessary for production sperms capable for fertilizing (Waits, 1970) and the heat stress produced by the increase environmental temperature negatively affect on semen quality either by its effect on the mechanical activity which is responsible for maintaining animal body temperature (Marai, 2010) or by its effect on disturbing sperms production and maturation (Saunders. 2003; Gholami *et al.*, 2011) or by its indirect effect produced from its effect on energy balance in the body (Rensis *et al.*, 2003), all these effects were adversely affect the reproductive function of bulls (Andreev, 1971; AL-Hakim *et al.*, 1981; Amir *et al.*, 1982), also this leads to decrease sperm motility and sperm concentration (Salisbury *et al.*, 1978; Daisuke *et al.*, 1999; Bilboy, 2009; Golami *et al.*, 2011) and also causes a significant increase in sperms abnormalities (Gwazdawk *et al.*, 1980; Noaks *et al.*, 2001; Carlsen, 2003).

Murray, (1997) and Janus-Kauskas *et al.* (1995) had emphasized that when spermatogenesis have effected with a simple environment, the sperms viability outside the body will be weak. From the results of this study it is obvious that there are differences between the three groups of bulls in its affect with monthly changes, it's found that libido and semen characteristics for poor bulls were more negatively affected with these changes. Javed *et al.* (2000) have mentioned that the factors which is negatively affects semen quality will be more affects in a poor performance bulls, and also Dahl *et al.*, (2000), Ranberag *et al.* (2003) and Haugana *et al.* (2005) have indicated that the negative effect of the hot months differs in its intensity according to the individual variation of bulls. Also results showing that poor efficiency bulls wouldn't be able to return its natural reproductive capability yet after passing along period as compared with

medium and high efficiency bulls had capable to get its natural reproductive ability once it ends the month period or a negative effect months as compared with other groups, these are in agreement with Bilby *et al.* (2009). It also may be refer to the highly efficiency bulls which owns more numbers of an active cells that is responsible for sperms production and when some of them have spoiled as a result of any negative effectors or there are a cells has the ability to compensate this effect reflect poor efficiency bulls which had weak cells (AL-Badry *et al.*, 2012). Among these results it's possible to arrive that it could be running semen collection from bulls during all months of a year except August with regards to a highly efficiency bulls and at July, August and September with regards to a medium efficiency bulls and at June, July, August, September and October with regards to a poor efficiency bulls.

ACKNOWLEDGEMENTS

Author thanks all staff member of Artificial Insemination Center mainly the head of department Mr. Fairs Fesal Ibrahim and Mrs. Basema Abd Rajab for their cooperation and afferent me indefinite facilities along experimental period in order to be performed conveniently.

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