

بعض العوامل المؤثرة علي أسباب الفشل التناسلي في إناث الجاموس المصرى

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الملخص العربى

تهدف هذه الدراسة إلى التعرف على تأثير بعض العوامل المؤثرة علي أسباب الفشل التناسلى فى إناث الجاموس المصرى فى محافظة المنوفية. تم تجميع البيانات من سجلات ثلاث وحدات البيطرية وكان العدد الكلى ١٠٠٣٦ سجل ، مقسمة كالاتى ٢٧٠٣ و ٤١٤٠ و ٣١٩٣ من وحدات الدبايبية و البتانون و الماى على الترتيب فى خلال الفترة من يناير ٢٠٠٢ حتى ديسمبر ٢٠٠٨ . وقد وجد أن هناك مجموعة من أسباب الفشل التناسلى وهى خمول المبيض والجسم الأصفر المستديم و إلتهاب الرحم و إلتهاب الرحم الصديدى والمبيض المتحوصل وهذه تحدث بنسب متباينة.

تم التعرف على تأثير كل من الموقع و فصل السنة و عدد مرات الولادة السابقة على أشكال الفشل التناسلى فى إناث الجاموس ولقد أظهرت نتائج الدراسة ما يلى:

١- لم يكن لموقع الوحدة البيطرية تأثير معنوى على كل حالات الفشل التناسلى فى إناث الجاموس المصرى خلال فترة الدراسة بينما كان له تأثير معنوى على نسبة حدوث حالة الإلتهاب الرحمى الصديدى على مستوي ($P \leq 0.001$).

٢- لم يظهر لفصل السنة تأثير معنوى على نسبة حدوث حالات الفشل التناسلى فى الجاموس المصرى على مدار سنوات الدراسة.

٣- لم يظهر لعدد مواسم الولادة السابقة تأثير معنوى على نسبة حدوث حالات الفشل التناسلى فى الجاموس المصرى على مدار سنوات الدراسة.

٤- كانت حالة الخمول المبيضى هى الأكثر تكراراً بالمقارنة بباقى حالات الفشل التناسلى الاخرى فكانت نسبة حدوثها (٧٨.٥%) بينما كانت حالة الجسم الأصفر المستديم (٩.٣%) و إلتهاب الرحم الصديدى (٤.٨%) و إلتهاب الرحم (٤.٥%) بينما كانت حالة المبيض المتحوصل (٢.٩%) هى الأقل تكراراً.

الكلمات الكشافة: الجاموس و الفشل التناسلى و العوامل المؤثرة و الخمول المبيضى .

FORMS OF SOME FACTORS AFFECTING FEMALE REPRODUCTIVE DISORDERS IN EGYPTIAN BUFFALO COWS

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ABSTRACT: *The objective of this study was to investigate some factors affecting reproductive disorders of fertility of buffaloes in Minoufiya province, Egypt. Data were collected from 10036 records of three veterinary units is 10036 records (2703, 4140, and 3193 records from Eldabaiba, Elbatanon, and Elmai, respectively from January 2002 until December 2008). There are some disorders repeated in such units, e.g., smooth ovary, persistant CL, pyometra, endometrities, and cystic ovary. Fixed effects of year, location, season of the year and parity were studied. Effect of season and parity was non significant in this concept, meanwhile, that of location was significant on pyometra. Effect of year was significant on smooth ovary, persistant CL, and pyometra. The results also indicate that smooth ovary was the most frequently recorded status (78.5%) as compared with the other cases of the reproductive failure. The persistent CL (9.3%), pyometra (4.8%) endometritis (4.5%) and cystic ovary (2.9%).*

Keywords: *Buffalo, reproductive disorders, factors affecting, smooth ovary.*

INTRODUCTION

Egyptian buffaloes have increased from 0.8 million at the beginning of the last century to be about 4 million at 2009 (FAO, 2010).

The buffalo population in Minoufiya province is estimated to be 315.143 thousand (about 7.88% of the whole buffaloes of Egypt) (Ministry of Agriculture, 2008). The productive and reproductive performance of the buffalo is negatively influenced by the calving related reproductive disorders (around and following parturition), (El-Wishy, 2007). In Egypt, buffaloes have a great impact on the national agriculture income.

Buffaloes are known as late sexually maturing animals. Most literatures indicated that average age at first calving was about 40 months. This is influenced mainly by the interval from calving to subsequent conception and by the time taken after calving for uterine involution, reestablishment of cyclic ovarian activity and return to normal fertility.

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The objective of this study was to investigate the factors affecting the reproductive disorders and trends of fertility in buffaloes in Minoufiya province, Egypt.

MATERIALS AND METHODS

The present study was carried out in three veterinary units belonging to three districts in Minoufiya province namely Eldapaiba, Elbtanon and Elmai. This study screens the main causes of reproductive failure in the buffalo cows through actual data giving in reproductive records to follow up the main reproductive disorders of buffaloes visited such veterinary units.

Data concerning cause of reproductive failure of buffalo cows were collected from the 10036 records from the three veterinary units (2703, 4140, and 3193 records from Eldabaiba, Elbatanon, and Elmai, respectively). They were collected from January 2002 until December 2008.

Cases of reproductive failure: The animals were classified in this concept into two main groups. First, those with ovarian disorders including smooth ovary, persistent CL, and cystic ovary. Second, uterine disorders including pyometra and endometrities. Where, smooth ovary is a complete sexual inactivity without manifestation of estrus when both ovaries were found to be small, smooth, with no palpable follicle or corpus luteum and the uterus is small and atonic. Cystic ovary is distinguished with a large Graffian follicle (diameter in excess of 25 mm) with the absence of a corpus luteum. Persistent CL is distinguished with a palpable corpus luteum on one of both ovaries. Pyometra is distinguished with enlarged uterus and cervix, tough, coiled, with thick wall, and abnormal vaginal discharge (pus and blood in the mucus discharge) in addition to a very bad odor. Acute endometrities is distinguished with enlarged uterus and cervix, tough, coiled and of thick wall, with or without abnormal vaginal discharge.

Feeding: Feed intake depends on the availability of feedstuffs and economic status of the farmers. In most areas, farmers do not offer any feed additives to the rations. In winter, the feeding stuffs composed of green berseem (*Trifolium alexandrinum*), wheat mainly or rice straw fed *ad-libitum*, and concentrates feed mixture if possible. In summer, the animals are fed on concentrates and wheat straw with small amount of green corn (darawa).

Statistical analysis: Data obtained were statistically analyzed according to SAS (2004) program (Descriptive statistics, Chi square test).

RESULTS AND DISCUSSION

Frequency distribution of buffalo reproductive failure criteria:

Table (1) indicates that smooth ovary was the most frequently recorded status as compared with the other cases of the reproductive failure. The least

percentage was during the year 2002 (64.5%) and the highest percentage was during 2004 (83.6%). The least % of persistent CL was recorded during the year 2003 (5.2%) and the highest one was during the year 2008 (16.9%).

It clearly appears that pyometra was gradually decreased over the years from 2002 to 2005 (between 12.7 and 4.7%) then it declined to the zero point in the year 2006 and then it increased again to 0.8% in 2007 and then decreased to 0.6% in 2008 it may be due to the increase of awareness of the Egyptian farmers. The least percentage of endometritis was found during the year 2008 (2.8%) and the highest one was during the year 2002 (7.2%). The cystic ovary was the least frequently recorded case. This case was recorded in highly milk yield animals so it was not recorded more frequently in Egyptian buffalo cows.

Table (1): The frequency distribution of reproductive disorders in buffalo cows over the seven years under consideration:

Case \ Year	Smooth ovary		Persistent CL		Pyometra		Endo meteritis		Cystic ovary		Total
	No	%	No	%	No	%	No	%	No	%	No
2002	651	64.5 ^b	131	12.9 ^{ab}	128	12.7 ^a	73	7.2	27	2.7	1010
2003	1255	80.4 ^a	81	5.2 ^c	124	7.9 ^{ab}	48	3.1	53	3.4	1561
2004	1688	83.6 ^a	107	5.3 ^c	128	6.3 ^{ab}	58	2.9	39	1.9	2020
2005	1281	76.5 ^{ab}	172	10.3 ^{abc}	79	4.7 ^b	93	5.6	48	2.9	1673
2006	782	78.3 ^a	153	15.3 ^{ab}	0	0 ^c	40	4.0	24	2.4	999
2007	1642	82.3 ^a	156	7.8 ^{bc}	15	0.8 ^b	121	6.0	62	3.1	1996
2008	578	74.4 ^{ab}	131	16.9 ^a	5	0.6 ^b	22	2.8	41	5.3	777
Total	7877	78.5	931	9.3	479	4.8	455	4.5	294	2.9	10036
Sig	0.05*		0.05*		0.001***		NS		NS		

Significant at $P \leq 0.05^*$, Highly significant at $P \leq 0.01^{**}$, Very Highly Significant at $P \leq 0.001^{***}$ and NS= non significant

Effect of location on reproductive failure status in buffalo cows:

Data in Table (2) illustrate that location has no significant effect on incidence of smooth ovary, persistent CL, endometrities, and cystic ovary in buffalo cows. Meanwhile it significantly affected incidence of pyometra ($P \leq 0.001$).

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Table (2): Effect of location on reproductive failure status:

Case Country	Smooth ovary		Persistent CL		Pyometera		Endo- meteritis		Cystic		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Eldabaiba	2012	74.5	244	9.0	222	8.2 ^a	167	6.2	58	2.1	2703	26.9
Elbatanon	3485	84.1	404	9.8	3	0.1 ^b	116	2.8	132	3.2	4140	41.2
Elmai	2380	74.5	283	8.9	254	8.0 ^a	172	5.3	104	3.3	3193	31.8
Sig	NS		NS		0.001***		NS		NS		NS	

Significant at $P \leq 0.001$, *** and NS= non significant

Seasonal variations of reproductive failure status in buffalo cows in the three veterinary units:

Data in Table (3) illustrate that there is no seasonal variation on any of the smooth ovary, persistent CL, pyometra, endometrities, and cystic ovary in buffalo cows.

Table (3): Seasonal variations of reproductive failure status in buffalo cows:

Disorder	Winter		Summer		Total		Sig.
	No	%	No	%	No	%	
Smooth Ovary	4084	76.2	3793	81.2	7877	78.5	NS
Persistent CL	499	9.3	432	9.2	931	9.3	NS
Pyometra	320	6.0	159	3.4	479	4.8	NS
Endometeritis	258	4.8	197	4.2	455	4.5	NS
Cystic ovary	199	3.7	95	2.0	294	2.9	NS
Total	5360	53.4	4676	46.6	10036	100	NS

Sig.= significant , NS= non significant.

Season of the year has been reported to affect postpartum reproductive performance. Summer months are usually associated with lower reproductive performance than that occur in winter ones. There were some evidences which indicate that season of calving may be more important than other factors affecting the resumption of postpartum ovarian activity in buffalo cows (Mohamed, 1974; El-Fouly *et al.*, 1976 ; El-Fouly, 1983; El-Wardani, 1995 and Barkawi *et al.*, 1997).

Clinical analysis of reproductive failure in more than 12,000 Murrah buffaloes under Indian village management revealed that 28% of all reproductive failures were due to postpartum anestrous associated with non functional ovaries particularly in summer and autumn (Rao and Pandey, 1982). Moreover, in Egyptian buffaloes, El-Fouly (1983) reported that the delayed restoration of postpartum ovarian activity could not be considered as a disease, but it is in most cases due to seasonal anestrous.

Season of calving has no significant effect on heat duration; although buffalo cows calved in the summer season showed shorter heat duration compared to those calved in winter one (Barkawi *et al.*, 1997). The same authors found also that cows calved in the summer season had higher percentage of odd estrus cases (42.7%) than that of the winter season (31%). Similar trend was observed concerning the successive estrus cases in postpartum period. Percentages of such odd estrus cases in the first, second and third estrus postpartum were 57.2, 10 and zero vs. 71.4, 35.0 and 10.0% for buffalo cows which calved in the winter and summer season respectively.

Under commercial condition in Pakistani buffaloes, during the first 150 days after calving, 69% of buffaloes came into estrus; the remaining 31% remained anestrus. The postpartum ovulation and estrus intervals were significantly longer ($P \leq 0.05$) in buffaloes calving during the normal breeding season than those calving in the low-breeding season (Qureshi *et al.*, 1998).

Effect of Parity on reproductive failure status in buffalo cows:

Data in Table (4) illustrate that parity has no significant effect on all reproductive disorders under consideration. Data available in the literature indicated that little attention was given to the effect of milk yield on the postpartum reproductive performance in buffalo cows. El-Fouly *et al.* (1976) found significant correlation between milk yield and postpartum estrous interval in milked and suckled Egyptian buffalo cows. While, postpartum reproductive performance was not correlated significantly with milk yield in Egyptian (El-Keraby *et al.*, 1981).

Table (4): Effect of parity on reproductive failure status in buffalo cows:

Case \ Parity	Smooth ovary		Persistent CL		Pyometra		Endo meteritis		Cystic ovary		Total №
	№	%	№	%	№	%	№	%	№	%	
1	300	78.3	50	13.1	13	3.4	4	1.0	16	4.2	383
2	663	76.2	81	9.3	23	2.7	55	6.3	48	5.5	870
3	1042	77.2	110	8.2	59	4.4	93	6.9	45	3.3	1349
4	2153	81.5	236	8.9	108	4.1	79	3.0	67	2.5	2643
5	1661	78.7	164	7.8	115	5.5	115	5.5	53	2.5	2108
6	1202	76.7	179	11.4	98	6.3	65	4.1	23	1.5	2567
≥7	856	76.7	111	9.9	63	5.7	44	3.9	42	3.8	1116
Total	7877	78.5	931	9.3	479	4.8	452	4.5	294	2.9	10036
Sig.	NS		NS		NS		NS		NS		

CONCLUSION

In Minoufiya province, most of non-pregnant buffaloes revealed ovarian inactivity due to suspected nutritional deficiency. Generally, buffaloes remain underfed due to poor availability of nutrients. Besides, high temperature also leads to a decrease in feed intake that is one of the important factors for cyclic regulation of the animals.

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١- لم يكن لموقع الوحدة البيطرية تأثير معنوى على كل حالات الفشل التناسلى فى إناث الجاموس المصرى خلال فترة الدراسة بينما كان له تأثير معنوى على نسبة حدوث حالة الإلتهاب الرحمى الصديدى على مستوي ($P \leq 0.001$).

٢- لم يظهر لفصل السنة تأثير معنوى على نسبة حدوث حالات الفشل التناسلى فى الجاموس المصرى على مدار سنوات الدراسة.

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٤- كانت حالة الخمول المبيضى هى الأكثر تكراراً بالمقارنة بباقي حالات الفشل التناسلى الاخرى فكانت نسبة حدوثها (٧٨.٥%) بينما كانت حالة الجسم الأصفر المستديم (٩.٣%) و إلتهاب الرحم الصديدى (٤.٨%) و إلتهاب الرحم (٤.٥%) بينما كانت حالة المبيض المتحوصل (٢.٩%) هى الأقل تكراراً.

الكلمات الكشافة: الجاموس و الفشل التناسلى و العوامل المؤثرة و الخمول المبيضى .