



## **Induction of fertile estrus in Iraqi camel (*Camelus dromedarius*) during seasonal anoestrus .**

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### **Abstract.**

This study was performed on 36 Iraqi she- camels aged between 5-8 years from Sept .2016 to Apr. 2017 in Al- Najaf province, these animals divided into three equal groups (12 for each one ) randomly according to the type of treatments , 1<sup>st</sup> group treated with CIDR (1.38gm progesterone ) intr-avaginally for 10 days and 2000 I.U of PMSG /I.M injected withdrawal CIDR directly , 2<sup>nd</sup> group treated with CIDR for 14 days + 2000 I.U PMSG /I.M while 3<sup>rd</sup> group without treatment and represented the control group. The results in this study showed superior significantly ( $p<0.01$ ) in 2<sup>nd</sup> group related with animals response compared with 1<sup>st</sup> and 3<sup>rd</sup> group as well as significantly between 1<sup>st</sup> and 3<sup>rd</sup> group, while the duration of response was recorded highly significantly ( $p<0.01$ ) for the treated groups (1<sup>st</sup>&2<sup>nd</sup>) compared with control group( 3<sup>rd</sup>) . But the number of services per conception which recorded non significantly ( $p<0.01$ ) between all groups, while the pregnancy rate was recorded 100%, 90% and 100% in 1<sup>st</sup> ,2<sup>nd</sup> and 3<sup>rd</sup> groups respectively with significantly ( $p<0.01$ ) related with 1<sup>st</sup> and 3<sup>rd</sup> compared with 2<sup>nd</sup> group. Finally the days open recorded  $94.13\pm 7.01$  ,  $97.24\pm 6.78$  and  $153.57\pm 12.64$  in 1<sup>st</sup> , 2<sup>nd</sup> and 3<sup>rd</sup> groups respectively with highly significant for 1<sup>st</sup> and 2<sup>nd</sup> compared with 3<sup>rd</sup> group. In conclusion in this study that they used hormonal treatments (CIDR +PMSG ) for induction of fertile estrus was safe and effect for increasing pregnancy rate and reduction days open.

Key words : CIDR, PMSG ,Pregnancy rate ,Iraqi camels .

### **أحداث الشبق الخصب في النوق العراقية أحادية السنام خارج موسم التناسل .**

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#### **الخلاصة**

أجريت الدراسة على 36 ناقة عراقية تراوحت أعمارها ما بين 5- 8 سنوات للفترة من أيلول 2016 إلى نيسان 2017 في محافظة النجف الأشرف، وقد تم تقسيم الحيوانات إلى ثلاثة مجاميع متساوية (ضمت كل مجموعة 12 ناقة ) عشوائياً "طبقاً" ل نوع المعاملة الهرمونية المستخدمة ،فقد عوملت المجموعة الأولى باستخدام السايذر لفترة عشرة أيام داخل المهبل وبجرعة 1،38 غ من البروجستيرون بالإضافة إلى حقن هرمون مصل الفرس الحامل بجرعة 2000 وحدة دولية في العضل حال سحب آلة السايذر (اليوم العاشر) أما المجموعة الثانية فقد استخدم السايذر لفترة 14 يوم أعقبها إعطاء نفس الجرعة من هرمون مصل الفرس الحامل فيما تركت المجموعة الثالثة بدون معاملة واعتبرت مجموعة سيطرة 0) أوضحت نتائج الدراسة إن هناك فارق إحصائي مهم بمستوى ( $p<0.01$ ) في نسبة الاستجابة لصالح

المجموعة الثانية مقارنة مع المجموعتين الأولى والثالثة إضافة إلى وجود فرق إحصائي مهم بين المجموعتين الأولى والثالثة أما ما يخص فترة الاستجابة فقد تبين وجود فرق إحصائي بمستوى ( $p < 0.01$ ) لصالح المجموعتين الأولى والثانية مقارنة مع مجموعة السيطرة أما عدد التلقيحات اللازمة للإخصاب فلم يظهر فرق إحصائي في المجاميع الثلاثة 0 نسبة الحمل سجلت 100%، 90% و 100% في المجاميع الأولى والثانية والثالثة على التوالي مع فرق إحصائي مهم ( $p < 0.01$ ) لصالح المجموعة الأولى والثالثة مقارنة مع المجموعة الثانية وأخيراً فقد تم تسجيل فترة الأيام المفتوحة بفارق إحصائي مهم ( $p < 0.01$ ) في المجموعتين المعاملتين (الأولى والثانية) مقارنة مع مجموعة السيطرة (الثالثة) نستنتج من هذه الدراسة بأن استخدام المعاملات الهرمونية التي تضم السايدر ومصل الفرس الحامل مؤثرة وأكثر أمان في زيادة نسبة الحمل واختزال فترة الأيام المفتوحة

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## Introduction

Generally the breeding activity of the one humped camel increase during the rain periods, low temperature and better grazing conditions (1). Due to the broad variation in time of estrous exhibition between females dromedaries within the breeding season, this requires intense efforts from the camel owner to observe his herd, which is not the case in practice. Camels are seasonally polyestrous animals (2&3). The estrous cycle in the male camel differs from that observed in other female farm animals, it is characterized in the female camel by the absence of the luteal phase hence, there are only three phases within the estrous cycle, namely follicular growth, the existence of mature follicles on ovaries (estrous period), and follicular atresia (4&5). These three phases last 22-28 days. The estrous period is quite long, which sometimes lasts up to 7 days, the estrous signs in a female camel are characterized by the sitting of the camel to be mounted by other females, frequent salivation, restlessness, swelling of the vulva, vaginal mucous discharge, frequent urination especially when the male comes close to her, and finally the acceptance of mating by the male(6&7). Many hormonal regimes used for estrous induction include progesterone treatment (PRID, CIDR and injection 50-100mg/I.M) with PMSG injection by many authors(8,9&10). The pregnancy rate recorded 33% - 80% when used PRID +PMSG compared with 80%-95% when used CIDR +PMSG(11,12&13). The purpose of this study to induction of

fertile estrus in Iraqi she- camels (camelus dromedarius ) by using CIDR +PMSG during seasonal anestrus.

## Materials and method :

This study conducted on 36 Iraqi camels (camelus dromedarius), aged between 5-8 years from Sept -2016 to April-2017 in Al- najaf province, these animals divided into three equal groups(12 for each one)randomly according the type of treatments, 1st group treated with CIDR (1.38g progesterone ) intravaginally for 10 days and w I.U of PMSG /I.M injected withdrawal CIDR directly, 2nd group treated with CIDR for 14 days + 2000 I.U PMSG /I.M while 3rd group without treatment and represented the control group .Many reproduction parameters include animals response, duration of response, services / conception , pregnancy rate and days open was depended on for estimation the important using hormonal treatment.

## Statistics:

For statistical analysis of the data in this study depended on many statistical measurements include mean, standard error, chi-square, F-test and analysis of variance ( $p < 0.01$ ) according to Steel and Torrie (14).

## Results and discussion :

The results in table -1-showed superior significantly ( $p < 0.01$ ) in 2<sup>nd</sup> group related with animal response compared with 1<sup>st</sup> and 3<sup>rd</sup> group as well as significantly between 1<sup>st</sup> and 3<sup>rd</sup> group, while the duration of response was recorded highly significantly ( $p < 0.01$ )for

the treated groups (1<sup>st</sup>&2<sup>nd</sup>) compared with control group( 3<sup>rd</sup>) .These results was agreement with many author's (11,15,16,17&18) which recorded 80% ,73-84%,83%,100%and results des agree with result of (17) is found 100%, and different with (18) 67% respectively.

The duration of response in this study 5.63 ± 1.06,4.94±1.17and 48.56 ± 3.52 days in 1st ,2nd and 3rd group respectively , these results agree with Elis et al (17) which recorded 4-5days by using hormonal treatment and similar trends were recorded by( 19) which found 3-5 days as well as ( 20) but the results different with (11) which recorded 1-2 days (21).

But the outcomes in table-2- was recorded the number of services per conception which recorded non significantly (p<0.01) between all groups, these results agreement with (22)which recorded 1.4 - 1.9 number of services/conception (23&24), while

Mouner and Borani (25) recorded 2-2.9 services per conception. While the pregnancy rate was recorded 100%, 90% and 100% in 1st ,2nd and 3rd groups respectively with significantly (p<0.01) related with 1st and 3rd compared with 2nd group. The pregnancy rate of this study agree with result of (26 ) which found more than 85% and these results are within the ranges previously reported by(27) which recorded 95%. Finally the days open recorded 94.13±7.01 , 97.24±6.78 and 153.57±12.64 days in 1st, 2nd and 3rd group respectively with highly significant for 1st and 2nd compared with 3rd group and these finding agreement with (23) which about 86-100 days and similar with (25). In conclusion in this study was included they used of hormonal treatment (CIDR +PMSG) was very effect for increased animal response and reduction the days open in seasonal Iraqi camels (camelus dromedarius).

**Table-1 - Different methods of treatment ,animals response and duration of response in Iraqi camels (camelus dromedarius).**

Groups	No. of animals	Type of treatment	Animals response		Duration of animals response (days) M±SE
			No	%	
G1	12	CIDR (10 days)+2000 I.U PMSG/ I.M	9	75 <sub>b</sub>	5.63 ± 1.06 <sub>a</sub>
G2	12	CIDR (14 days) +2000 I.U PMSG/ I.M	10	83.3 <sub>a</sub>	4.94 ± 1.17 <sub>a</sub>
G3	12	Without treatment	8	66.6 <sub>c</sub>	48.56 ± 3.52 <sub>b</sub>
Total	36	-----	Treated animals 19/24 79.16 <sub>a</sub>		Treatment animals 5.28 ± 1.11 <sub>a</sub>
			Control 8/12 66.6 <sub>b</sub>		Control 48.56 ± 3.52 <sub>b</sub>

Different letters means sig . differences p < 0.01

**Table -2- number of services /conception ,pregnancy rate and days open in Iraqi camels(camelus dromedarius).**

Group	No. of animals response	No. services conception	Pregnancy rate no. %	Days open M ± SE
G1	9	1.84 ± 0.12 <sub>a</sub>	9 100 <sub>a</sub>	94.13±7.01 <sub>a</sub>
G2	10	1.64 ± 0.18 <sub>a</sub>	9 90 <sub>b</sub>	97.24±6.78 <sub>a</sub>
G3	8	1.72 ± 0.13 <sub>a</sub>	8 100 <sub>a</sub>	153.57±12.64 <sub>b</sub>
Total	27	-----	Treated animals 18/19 94.7 <sub>a</sub>  Control 8/8 100 <sub>a</sub>	Treated animals 95.68 ± 6.89 <sub>a</sub>  Control 153.57±12.64 <sub>b</sub>

Different letters means sig . differences  $p < 0.01$

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