

DEDICATION

To the soul of my father,

My mother and

My wife and children

With faithful and love

Bagadi

Acknowledgement

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ABSTRACT

In this study, an investigation of two hormonal protocols vs. natural Ram effect for oestrus synchronization in sheep was studied under Sudan condition. 27 ewes from three subtypes of Desert Sheep (D.S), Ashgar, Dubasi and Watish were selected randomly from the flock of Elhuda Research Station, Gizera Scheme, Sudan. In the year 2003. The main objective of this study was to compare the efficiency of controlled reproduction in desert sheep by oestrus synchronization using exogenous hormones vs. Natural initiation by Ram Effect (RE) .The ewes under experiment were divided randomly to three groups, A, B and C, with nine ewes in each group. Such that all the three subtypes are represented in each group.

In group (A), the ewes were treated with: Controlled Internal Drug Releaser (CIDERs), (vaginal pessaries impregnated with progesterone for estrus synchronization) , left for 12 day , then removed on day 13, and on the same day all ewes were injected with 375i.u PMSG.

In group (B), the ewes were injected with two doses of Prostaglandin ($PGF_{2\alpha}$), 0.5 ml each, twelve days apart, while the third group (C) was subjected to the ram effect (R.E) To stimulate oestrus.

All ewes in group A and B were Artificially Inseminated after the end of hormonal treatment on fixed –time, 36 hours after oestrus behavioural indication ,while ewes in group C were left with the Ram for 40 days to assure natural mating.

The parameters studied were; response of ewes to hormonal treatment manifested by showing oestrus,time of oestrus onset in hrs

conception rate ,gestation period, twins percent, birth rate, birth weight and litter size. The statistical analysis was found as follow:

All ewes in group A and B ,treated with hormonal protocols were responded by exhibiting oestrus in all ewes (100%) and first oestrus signs were displayed between 24 36 hrs from treatment end , while response in group C ,after left for period ranged between two weeks to five weeks with ram , conception rate was only 67%

all ewes in group A and B when receive A.I. conception rate was only 23%, this percent raise to 100% after leaving the returned ewes were naturally mated, while in group C, the control group who subjected to Ram for 40 days the responded ewes were only 67%.

Investigation of A.I. applied in this study explain the low conception rate due to difficulties of semen processing and insemination technique, the gestation period range between 147 day to 153 day.lambing rate was found 100% for treatment A and B while it was only 67% in treatment C, lambing percent was found 122%, 11% and 100% for treatment A, Band C respectively.

From this study it was obvious that birth weight was correlated with genetics and dam body weight. The average weight for male lambs was found as: 3.38 kg, 3.46 kg, and 2.9kg while females birth weight was found to be : 3.00, 3.1 and 2.6 kg for the three subtypes Ashgar, Dubasi and Watish respectively. Also birth weight for single and twins births was found as follow: 3.27 ± 0.22 vs 2.75 ± 0.20 , 3.35 ± 0.23 vs 2.85 ± 0.19 and 2.8 ± 0.39 vs 2.6 ± 0.15 for the three subtypes Ashgar, Dubasi and Watish respectively, the litter size was found to be 1.25, 1.12, and 1.25 for the three subtypes respectively.

In this study, the results documented that both hormonal treatments were effective in oestrus synchronization for control breeding which play major role in regulation of production systems and upgrading programs.

ملخص الأطروحة

أجريت هذه الدراسة لتقييم اثر هرمون نين استخدمنا لتحفيز- وتزامن الشبق مقابل التحفيز الطبيعي بواسطة الذكر على 27 نعجة من الضان الصحراوي تمثل ثلاثة أنواع هي الأشقر، الدباسى، والونيش. تم اختيار النعاج عشوائياً من حيوانات محطة أبحاث الضأن بالهدى، مكان الدراسة بمنطقة غرب الجزيرة، السودان فى العام 2003.

تم تقسيم النعاج عشوائياً الى ثلاث مجموعات هي : أ ، ب، و ج بواقع 9 نعاج بكل مجموعة تمثل الثلاث انواع.

تم معاملة جميع نعاج المجموعة (أ) بواسطة لبوسات مهبلية مشبعة بالبروجستيرون بنسبة 12 % لتحفيز- الشبق وتركت لمدة 12 يوم ثم تم إخراجها وتم حقن جميع الحيوانات فى هذه المجموعة بواسطة 375 وحدة دولية من هرمون مصل دم الفرس الحامل (PMSG). فى نفس اليوم الزى سحبت فيه اللبوسات المهبلية

المجموعة (ب) حقنت جميع النعاج بواسطة بـ 0.5 مل من هرمون البروستاجلاندين ($PGF2-\alpha$), وتم إعطاء الجرعة الثانية بعد 12 يوم. إما المجموعة (ج) تركت كمجموعة قياسية (مجموعة تحكم) ليتم تحفيزها طبيعياً بواسطة الذكر.

تم تلقيح نعاج المجموعتين أ و ب اصطناعياً بعد جمع وتحليل وتخفيف السائل المنوى من الذكر وذلك بعد مضى 36 ساعة من ظهور علامات الشبق، بينما ترك الذكر مع مجموعة التحكم لمدة 40 يوم ليتم تلقيحها طبيعياً.

تم اخذ القياسات التالية: درجة الاستجابة للتحفيز- الهرموني, زمن ظهور علامات الشبق من نهاية المعاملة (بالساعة) نسبة الحمل, طول مدة الحمل, نسبة التوائم, وزن المواليد. تم تحليل البيانات إحصائياً وظهر التحليل النتائج التالية: جميع النعاج فى المجموعتين أ و ب المعاملة هرمونيا اظهرت استجابة للتحفيز بنسبة 100% وذلك بظهور علامات الشبق فى مدة تتراوح بين 24-36 ساعة من نهاية المعاملة مما يوضح نجاح التحفيز- الهرموني فى حث وتوقيت الشبق, بينما كانت الاستجابة فى المجموعة ج هى 66.7% فى فترة تتراوح من أسبوعين إلى خمسة

أسابيع. .كانت نسبة الحمل فى مجموعتى التجربة بعد التلقيح اصطناعيا هى 23%, ارتفعت هذه النسبة الى 100% بعد ترك المجموعة المرتدة لتلقح طبيعيا بواسطة الذكر, مقابل 67% نسبة الحمل فى مجموعة التحكم . ايضا وجدت طول فترة الحمل لا تختلف بين الثلاثة انواع وتتراوح بين- 147 الى 153 يوم. اما نسبة الولادات فكانت بمعدل 100% لكل من المجموعتين ا و ب و 67% للمجموعة ج, اما نسبة المواليد فقد وجدت 122% للمجموعة أ , 111% للمجموعة ب و 100% للمجموعة ج.

اظهرت هذه الدراسة وجود فروق معنوية ($p < 0.05$) بين أوزان المواليد الذكور و الإناث وكانت الاوزان كالاتى 3.36 ± 0.27 الى 2.96 ± 0.18 للاشقر 3.46 ± 0.36 الى 3.05 ± 0.219 للدياسى 2.94 ± 0.26 الى 2.55 ± 0.86 للوتيش

أوضحت هذه الدراسة مدى جدوى استخدام الهرمونات وكفاءتها فى تحفيز وتوقيت الشبق وتنظيم الولادات فى الضان الصحراوي أكثر من التحفيز الطبيعى بواسطة الذكر. بينما أتضح ان التلقيح الطبيعى متفوقا على التلقيح الاصطناعي فى الضان وذلك لضعف تقنية التلقيح الاصطناعي فى الضان.

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