شبكة المعلومات الجامعية

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شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

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نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

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في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بالرسالة صفحات

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بعض الوثائق الأصلية تالفة

EFFECT OF GONADOTROPIN-LIKE HORMONES AND RECOMBINANT GROWTH HORMONE TREATMENTS ON SEMEN CHARACTERISTICS OF FRIESIAN BULLS

By

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ABSTRACT

The present study was carried out at the Department of Animal Production, Faculty of Agriculture, Cairo University in collaboration with Sakha Experimental Dairy Farm (Kafer El-sheikh) belonging to Animal Production Research Institute, Agricultural Research Center, Ministry of Agriculture, during the years of 2000-2001. This study aimed to evaluate the reproductive efficiency of Friesian bulls intended to be sires in A. I. Center. Experimental work was carried out to investigate the effect of injection of; rbST, GnRH, hCG, and PMSG on semen physical characteristics and some biochemical components in seminal plasma and blood plasma. Fifteen Friesian bulls were divided into five similar groups: (1): control, injected (i.m.) saline solution (0.9% Nacl). (2): each bull received 8 injections (S.c.) 500 mg rbST/14d. (3): each bull received 8 injections (i.m.) 250 µg GnRH/14d. (4): each bull received 8 injections (i.m.) 5000 IU hCG/14d. (5): each bull received 8 injections 1000 I.U. PMSG/14d. Blood samples were obtained from each bull after 2 hours from injection and after a week from injection (glucose, total lipids, and testosterone concentration, as well as activities of both AST and ALT enzymes. The obtained results could be summarized as follows: (1). Semen physical characteristics: Hormonal treatments was found to have a highly significant effect on the ejaculate volume, sperm concentration, total sperm output, mass motility score, live (%) and Sperm abnormalities (%)($P<0.001$). Bulls injected with GnRH or hCG gave a large ejaculate volume (4.10 and 4.08 ml.) followed by those injected with rbST or PMSG (4.03 and 3.75 ml.) and the lowest value was that of the control (3.11ml.). Sperm concentration/ml produced from bulls treated with rbST was higher ($1.287x10^9$/ml) followed by; hCG treated bulls ($1.202 x10^9$/ml), followed by GnRH treated bulls ($1.165x10^9$ /ml), and followed by PMSG treated bulls ($1.130x10^9$/ml). The lowest sperm concentration was that of semen collected from the control group ($0.890x10^9$/ml). The total sperm output from bulls injected with; rbST ($5.484x10^9$ / ejac.), hCG ($5.267x10^9$ / ejac.), GnRH ($5.053x10^9$/ejac.), PMSG ($4.484x10^9$/ejac.) compared to the control bulls ($2.935x10^9$/ejac.). The highs mass motility score 3.76 was recorded for the GnRH treated bulls, followed by 3.55, 3.51 and 3.39 scores for the hCG, rbST and PMSG treated bulls, respectively, while it was the lest in the control (2.64) . The overall means of live (%) were 69.5, 77.24, 79.09, 77.54 and 76.90 for control, rbST, GnRH, hCG and PMSG, respectively. Sperm abnormalities (%) decreased ($P<0.05$) in semen collected from bulls treated with GnRH (15.53 %) or hCG (15.63 %), compared with rbST (17.51 %) or PMSG (17,40 %). A higher average deformed sperm was (22.25%) in control. Hormonal treatment decreased ($P<0.001$) Methylene blue reduction time. The MBRT was faster (10.06 min.) in the GnRH treated bulls followed by, those treated with; rbST (10.54 min.), hCG (10.85 min.), PMSG (12.05 min.), on the contrary average value of MBRT was that of the control (19.45 min.). Hormonal treatments had effect ($P<0.001$) on fructose concentration in the seminal plasma. Fructose concentration (mg/dl) recorded a higher average value in the rbST treated bulls (411.6), followed by; hCG (384.19), GnRH (361.23), PMSG (348.80), the lower value was that of the control group (289.8). AST and ALT activity in the seminal plasma was increased ($P<0.001$; $P<0.01$) as a result of hormonal treatments. AST activity were 115.33 and 116.98 (RFU/ml) in the hCG and GnRH treated bulls, meanwhile it were 114.1 and 111.79 in the rbST and PMSG treated bulls, respectively. The lowest activity was that of the control (99.03). ALT activity was 34.14 and 33.55 in the GnRH and rbST treated bulls, meanwhile it was 33.41 and 32.60 in the HCG and PMSG, respectively. The lowest activity was that of the control (28.94). Hormonal treatments; increased ($P<0.05$) concentration of glucose (mg/dl); (the higher concentration (69.68) was that of rbST treated bulls, followed by hCG treated bulls (67.93), 64.54 and 64.94 in both GnRH and PMSG treated bulls, and the lowest value was that of the control 61.6) and insignificant increased on total lipids in blood plasma; (the overall means of concentration were 289.89, 333.71, 324.28, 323.85 and 312.86 mg/dl in control, rbST, GnRH, HCG and PMSG, respectively). AST activity in blood plasma increased ($P<0.001$) as a result of different hormonal treatments. The overall means of activity (RFU/ml) were 74.06 and 74.59 in rbST and GnRH, and 76.28 in the HCG treated bulls and 70.23 in the PMSG treated bulls. The lowest average value was that of the control (64.56). ALT activity in blood plasma proved to be increased non-significantly by the hormonal treatments. The overall means of ALT activity (RFU/ml) were 22.06, 24.59, 24.45, 24.64 and 23.81 for control, rbST, GnRH, hCG and PMSG treated bulls, respectively. Bulls injection with; rbST, GnRH, hCG and PMSG had high effect ($P<0.001$) on blood plasma testosterone concentration. The average concentrations (ng/ml) were 2.85, 3.83, 4.04, 2.84 and 1.81, respectively. The highest conception rate (64%) was obtained using frozen semen of bulls injected with rbST, followed by that treated with; GnRH (60%), hCG (52%) and PMSG (48%). The lowest conception rate (36%) was that with semen collected from the control.

Yassein M. Hafez

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