

# بسم الله الرحمن الرحيم





# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

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**EFFECT OF SOME SEMEN EXTENDERS ON FERTILITY  
AND HATCHABILITY OF ARTIFICIALLY  
INSEMINATED DUCKS**

By

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B.Sc. Agric. Sc. (Poultry Production), Fac. of Agric., Ain Shams Univ., 1998

M.Sc. Agric. Sc. (Poultry Physiology), Fac. of Agric., Ain Shams Univ., 2006

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## **Approval Sheet**

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## **ABSTRACT**

**Safaa Ali Mostafa Hasan Ali: Effect of Some Semen Extenders on Fertility and Hatchability of Artificially Inseminated Ducks. Unpublished Ph.D. Thesis, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, 2020.**

This study aimed to explore the influence of different antioxidants supplementation in drinking water on Muscovy drake's semen quality traits and some blood plasma biochemical traits as indicators of physiological and reproductive conditions. In addition, impact composition of diluents or extenders on sperm protection during chilled storage procedures at low-temperature (5°C), fertility and hatchability percentages of eggs. Twenty four healthy Muscovy drakes and eighty hens were artificially inseminated to evaluate the effect of different antioxidants supplementation in drinking water on some productive and reproductive traits. Drakes were divided into four groups: control (T<sub>1</sub>), while the second (T<sub>2</sub>), third (T<sub>3</sub>) and fourth (T<sub>4</sub>) groups were supplemented with vit.E-Se (200ppm/l), vit.C (300mg/l) and Zinc sulphate (0.500mg/l), respectively.

Semen characteristics were evaluated on freshly and diluted semen using three well-known extenders (A, B, C) and a new proposed extender (D) to explore the best extender which show the tolerance performance on sperm protection during storage (at 5°C for 0, 6, 12 and 24 hours period).

The obtained results indicated that drakes supplemented with vit.E-Se, vit. C and Zinc sulphate showed a significant ( $P<0.05$ ) increase in ejaculate volume, sperm motility, spermatozoa concentration while decreased ( $P<0.05$ ) total abnormalities, coiled-tail spermatozoa, sperm

clumps and dead sperms compared with drakes un-supplemented any antioxidants.

Semen diluted by the new proposed extender (D) with vit.C supplementation had the higher percentage of sperm motility (87.5%) followed by drakes supplemented with Zinc sulphate (85.55%) and those supplemented with vit.E-Se (85%), respectively compared to control group.

Plasma biochemical traits in relation to supplementation of different types of antioxidants, statistical analysis showed in-significant effects ( $P>0.05$ ) of supplementation of different types of antioxidants on almost all studied constituents except for ALT, AST activities and circulating total cholesterol which showed significant decrease ( $P<0.05$ ) in their values for drakes supplemented with different antioxidants.

Fertility and hatchability percentages were significantly enhanced by different extender treatments, either for fresh semen or after 6 h storage period at 5°C. It is concluded that supplementation of different antioxidants or Zinc sulphate to drinking water of Muscovy drakes during summer season could be recommended for improving semen quality traits and both fertility and hatchability percentages. The newly proposed semen extender was superior for all tested parameters.

**Key words:** Ducks, Semen quality, Extenders, Fertility, Hatchability

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