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The effect of dilution rate and insemination protocol on fertilizing capacity of frozen-thawed Arabian horse sperm

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Forty-eight ejaculates were obtained from four Arab stallions to study the impact of three extenders (INRA Freeze[®], Tris egg-yolk and E-Z mixin) on the fertilizing capacity of frozen-thawed sperm. Semen samples were diluted using the extenders with a dilution rate of 1:1 and 1:2 and cryopreserved in 0.5 ml plastic straws. Frozen straws were thawed either at 37 °C for 30 sec or 75 °C for 7 sec. Results revealed that the percentages of progressive sperm motility, live sperm and abnormalities and characters of sperm motility like path velocity (VAP, $\mu\text{m/s}$), straight line velocity (VSL, $\mu\text{m/s}$), point to point velocity (VCL, $\mu\text{m/s}$) and lateral head displacement (ALH, μm) were significantly ($P<0.01$) better in the INRA Freeze[®] extender after thawing at 37 °C with dilution rate 1:1 and 1:2. Sperm progressive motility after thawing at 75 °C were significantly ($P<0.01$) higher by using INRA freeze[®] and E-Z mixin extenders at rates of dilution 1:1 and 1:2. The conception rate in forty Arab mares using 300 million forward motile sperm per insemination was significantly ($P<0.01$) higher by using INRA freeze[®] extender that thawed at 37 °C at dilution rate of 1:1 (50%) than 1:2 (20%). The use of two times inseminations gave significantly ($P<0.01$) better results (50%) than the use of one time insemination (28.57%). In conclusion, the fertilizing capacity of the frozen-thawed Arabian horse sperm was the best by using INRA freeze[®] extender in a dilution rate of 1:1 and two times inseminations.

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The investigation of effect of Nigella sativa on the prevention of aflatoxin induced liver lesions in rats

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Aflatoxicosis is a mycotoxicosis developing acute or chronic, caused by aflatoxins in domestic animal and humans. Aflatoxicosis is a widespread problem especially in the underdeveloped and the developing countries. Aflatoxins are potential threat to humans and animal and cause severe economic losses in animal industries. The chronic toxications especially suppress the immune system which facilitates the occurring of many diseases. Liver is main organ affected by aflatoxicosis and are histopathologically observed necrosis, fibrosis and hepatocarcinogenesis. It is not well known the effective protection in aflatoxicosis. However, it is reported that some vitamins, proteins and inorganic substances have a protective effect. In lastly performed studies, it was indicated that Nigella sativa (NS) had many pharmacologic effects as such antioxidant, immunomodulatory and anticancer. However, there is scanty study about their protective effects on aflatoxicosis. This study was planned to investigate the effect of NS on the prevention of aflatoxin-induced liver lesions in rats in term of biochemical, histopathological and immunohistochemical methods; for this purpose, a total of 30 rats was allotted into one of three experimental groups: A (Control), B (AFB1-treated) and C (AFB1+NS-treated) each containing 10 animals. The rats were sacrificed at 90th day of the experiment. Blood samples for the biochemical analysis and tissue samples from livers for histopathological examination were taken. On the basis of biochemical and histopathological findings, it is concluded that treated plant extract decrease the lipid peroxidation and liver enzymes, increase the antioxidant defense system activity and prevent the liver damage in the AFB1-treated rats. The study indicates that hepatoprotective effects are obtained from the group C (AFB1+NS-treated).

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