



performed using commercial kits. DNA damage was evaluated by Comet Assay. Using antioxidant, fetuin, amino acid solution and cysteine did not give better result on the percentages of post-thaw sperm CASA and progressive motilities. Spermatozoa frozen in which containing cysteine exhibited the greatest value of VAP ($100.8 \pm 1.19 \mu\text{m/s}$), VCL ($176.0 \pm 1.79 \mu\text{m/s}$) and plasma membrane integrity ($48.1 \pm 0.79\%$) compared to other groups ($P < 0.05$). Total abnormalities had greater in control and fetuin groups ($17.5 \pm 0.57\%$; $15.5 \pm 1.98\%$, respectively) than that of the other groups ($P < 0.05$). DNA damage was affected by type of antioxidant; fetuin resulted in greater chromatin damage than the other groups ($P < 0.05$). As regards to antioxidant activity; although there were no significance differences in the GSH, CAT and total antioxidant activities, GPx activity were affected by type of antioxidant, notably cysteine yielded the lowest activities when compared to the other groups ($P < 0.05$). In conclusion, antioxidant, aminoacid solution and cysteine have reduced abnormal spermatozoa rates and cysteine has exhibited cryoprotective activity on plasma membrane integrity but antioxidants which are used do not provide any further improvement on the antioxidant enzyme activity. On the other hand fetuine, which has been linked to the deleterious effect on sperm values, increases DNA damage.

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MALE INFERTILITY AND GENETIC FACTORS

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- Sözlü Sunum olarak seçilmiştir. Özet "Sözlü Sunumlar 1" bölümünde bulunmaktadır.
- Selected as oral presentation. Abstract can be found in "Oral Presentations 1" section.

RISK ASSESSMENT

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ENVIRONMENTAL RISK ASSESSMENT FOR PLANT PROTECTION PRODUCTS

Sakine Uğurlu Karaagaç

- Sözlü Sunum olarak seçilmiştir. Özet "Sözlü Sunumlar 4" bölümünde bulunmaktadır.
- Selected as oral presentation. Abstract can be found in "Oral Presentations 4" section.

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EARLY LIFE STAGES OF ZEBRAFISH (DANI O RERIO)

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The Nitrophenols are water-soluble compounds. These compounds pose significant health risks since they are priority pollutants. Acute toxicity and teratogenicity of 2-Nitrophenol and 2,4-Dinitrophenol were investigated in a 4-day using zebrafish embryos. Both nitrophenols caused teratogenicity and embryo mortality in the fish embryos. The median lethal concentrations (LC_{50}) and median effective concentrations (EC_{50}) for 2-Nitrophenol are 18.7 mg/L and 7.9 mg/L respectively; the corresponding values for 2,4-Dinitrophenol are 9.65 mg/L and 3.05 mg/L. The main endpoints are coagulated embryos, exogastrulation, tail malformation, vertebra defects and delayed growth in two nitrophenols. 2,4-Dinitrophenol was found more toxic than 2-Nitrophenol in applied doses. This paper is the first to describe the teratogenicity and embryotoxicity of two nitrophenols to the early life stages of zebrafish.

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EFFECT OF CYSTEINE, FETUIN, AMINOACID SOLUTION AND ANTIOXIDANT ON POST-THAW BULL SPERMS QUALITY

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The objectives of this study were to assess the effects of different antioxidants on sperm parameters, plasma membrane integrity, DNA damage as well as antioxidant activities after freeze-thawing in bull sperms. The pooled ejaculates were collected from three Holstein bulls twice a week split into five experimental groups and diluted to $15 \times 10^6/\text{ml}$ with the modified base extender containing antioxidant (0.5 ml), fetuin (2 mg/ml), aminoacid solution (13%), cysteine (5 mM) and control. The extended samples were cooled slowly to 4°C, loaded into straws and frozen using digital freezing and liquid nitrogen. Frozen straws were thawed at 37°C to analyze progressive motility and sperm motion characteristics as well as membrane integrity using hypo-osmotic swelling test. Biochemical assays were