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T.C. DİCLE ÜNİVERSİTESİ

FEN BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜ

DİYARBAKIR

Fen Bilimleri Enstitüsü tarafından yapılan "$CuSO_4$'ın *Physa acuta* (Draparnaud, 1805)'nın Histopatolojisi Üzerine Etkileri" konulu bu çalışma, jürimiz tarafından Biyoloji Anabilim Dalında YÜKSEK LİSANS tezi olarak Kabul edilmiştir.

Jüri Üyeleri

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Yukarıdaki bilgilerin doğruluğunu onaylarım.

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Enstitü Müdürü

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4.1.3.2 Deney Gruplar

ÖZET

Bak

ABSTRACT

THE EFFECT OF COPPER SULPHATE ($CuSO_4$) ON HYSTOPATHOLOGY OF *Physa acuta* (Draparnaud, 1805)

Msc THESIS

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In this study, it is aimed to determine the histopathological effects of copper sulphate ($CuSO_4$) on feet, mantle and on ovotestis tissues of *Physa acuta* hepatopancreas, a fresh water snail, which is commonly found in Turkey.

After 15 days of adaptation, snails were divided into a total of four test groups one of which was assigned as control group, while the other there was the test group. Copper sulfate ($CuSO_4$) concentrations were applied provided that 96-hour LC_{50} value of sublethal concentrations to be applied to snails were taken as 1/5, 1/10, 1/20; and0.2 mg/l, 0.1 mg /l and 0.05 mg /l, respectively. Histopathological changes related to the feet, hepatopankreas, mantle and ovotestis tissues of snails were observed as a result of copper sulphate parameters applied during different periods and under different sublethal concentrations during 10 days intervals for totally 30 days. In all test groups except control group, increases in lesions were detected depending on increase in severity of $CuSO_4$ concentration and the passage of time.

Desquamation in foot and mantle tissues, in epithelium of the test groups, and increase in mukosit cells and lipid vacuolation, and lesionssuch as increase in, muscle fibers atrophy, pigments and proteins cells weredetected. Swelling inhepatopancreas tissues and basophilic cells; increase in lipid vacualations; dilation inconnective tissue atrophy, hemolenfatik areas; expansion inthe lumen of the tubules andlesions in amoebocyteswere identified in the form of increase. On the other hand, in ovotestis tissues, pathological lesions such as invaginations in epithelium tissues, degeneration inoocytes, deterioration in acini cells, vacuolation in the cytoplasm and piknoktik cell increases were determined.

The findings obtained in this study demonstrate that snails may be used as good bioindicator in environmental pollution, especially in the accumulation of heavy metals.

Keywords:*Physa acuta*, copper sulphate ($CuSO_4$), hystopathology.

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20. gün ovotestis dokusu.

KISALTMA VE S

1. G

yüksek konsantrasyonlu metallere göre çok daha tehlikeli ve risklidir. Biyobirikime
e

gecikmesi ile yüksek oranda anormal embriyolar olu

neden oldu

2. ÖNCEK

transferaz (ALAT) aktivitesinde %33 azalma ve Glukoz-6-fosfataz aktivitesinde ise %78 oran

Ireland ve Marigomez (1991), bir tatl

sindirim bezinde histopatolojik de

ara

Amusan ve ark. (2002), yapt

Real ve ark. (2003), kapal

Oliveira-Filho ve ark. (2004), yapt

hemen hemen bütün büyük salyangoz organlar

Hoang ve Rand (2009), sudan, topraktan ve g

a

yaratmad

3. MATERYAL VE METOT

3.1. Materyal

Physidae familyas

T

süre zarf

$CuSO_4$

3.2.4. Kimyasallar

Harris

4. ARA

tabakas

4.1.2.Hepatopankreas

4.1.2.1.Kontrol Grubu

Hepatopankreaslar oval

Çizelge 4.2. $CuSO_4$

IV. Grup (0.2 mg/l) salyangozlar

4.1.3. Manto

Manto pneumostom d

4.26). 30 günlük uygulama sonunda ise, epitel k

4.1.4.Ovotestis (Hermafrodit Bez)

4.1.4.1. Kontrol Grubu

Ovotestis d

Çizelge 4.4. $CuSO_4$

5. TARTI

Gastropodlardaki hepatopankreas, metabolizma için hizmet veren ve ayr

Salyangozlar

yo

Tatl

6. KAYNAKLAR

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ÖZGEÇM