EFFECTS OF SOME PHYSICO-CHEMICAL FACTORS ON THE HATCHING OF EGG MASSES AND ON THE SURVIVAL OF JUVENILE AND ADULT SANILS OF *BULINUS* (*PHYSOPSIS*) *ABYSSINICUS*

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ABSTRACT

Effects of some physico-chemical factors on the hatching of eggs and on the survival of juvenile and adult snails of Bulinus (Physopsis) abyssinicus were studied. These factors were salinity, water temperature and hydrogen ion concentration. All factors were found to affect the hatchablity of the egg masses and the survival of juvenile and adult snails.

As the concentrations of sodium chloride solutions increased the rates of hatching of the egg masses and survival rates of juvenile and adult snails decreased. The maximum tolerated concentration for hatchablity was 2800 mg/l (15.5%) and their lethal concentration was 3200 mg/l.

The maximum tolerated concentrations by which juvenile and adult snails of Bul. abyssinicus survived were 7200 mg/l. (40% and 10% respectively) and their lethal concentration was 7600 mg/l.

At 5^{0}, 10^{0} and 15^{0}C, none of the egg masses exposed hatched. At 20^{0} and 25^{0}C, 33% and 95.4% of the egg masses hatched within 6 and 8 days respectively. At 30^{0}C, the mean rate of hatching was 95.5%. At 35^{0}C, no eggs hatched.

At lower temperatures (5^{0} and 10^{0}C), none of the juvenile and adult snails survived. At 15^{0}, 20^{0} and 25^{0}C, all juvenile and adult snails exposed survived. At 30^{0}C, 97.5% survived in both groups, and at 35^{0}C, 97.5% and 95% of juvenile and adult snails survived respectively. At 40^{0}C, none of the juvenile and adult snails survived .

The best pH gradients by which the egg masses of Bul. abyssinicus could hatch and the juvenile and adult snails could survive well were in the range between pH 6 and 8. Below pH 6 and above pH 8, no snails survived.