Optimizing the gonadal performance of broodstock *Helostoma temminckii* with the addition of glutathione and vitamin E as enrichment ingredients in feed

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Abstract

Vitamin E and glutathione are antioxidants that play a role in reducing Reactive oxygen species that occur when an organism experiences stress and it's plays a role in membrane permeability, especially for the stages of fish gonad development. The Purpose of this research was to optimizing the gonadal performance of broodstock kissing gouramy Helostoma temminckii with the addition of glutathione and vitamin E as enrichment ingredients in feed so as to improve the quality and quantity of seeds produced. Fish were randomly allocated into four treatments were Treatment A=Commercial feed added Glutathione, B=Commercial feed added with Glutathione and Vitamin E 300 mg/Kg; C=Commercial feed added with Glutathione and Vitamin E 500 mg/Kg and D=Commercial feed added with Glutathione and Vitamin E 700 mg/Kg; using three replicates for each treatment (18 fish/treatment, 6 fish/replicate), The experiment lasted for 30 days. The rearing container used in the study were 12 hapa measuring 1 x 1 meter placed in the pond with a water level of 50 cm. The results showed that all treatments with the addition of glutathione and vitamin E fortifications with levels of 300 mg-700 mg gave the effect of increasing Gonadosomatix Indeks *(GSI),* Hepatosomatic Indeks *(HSI), higher fecundity and larger egg diameter than treatment A. The amount of initial GSI increase in treatment A was 33.49%, treatment B was 172.52%, treatment C was 208.60% and treatment D was 691.20%. While the HSI value at the end of the study decreased in treatment A by 35.30% and treatment C which also experienced a decrease in HSI by 26.23%. While in treatments B and D there was a not too large increase, in the range of 42.56% (B) and 5.66% (D). The artificial feed with addition combination of glutathione and vitamin E fortifications with levels of 300 mg-700 mg, gave a better effect to increase Gonadosomatix Indeks (GSI), Hepatosomatic Indeks (HSI), and higher fecundity and larger egg diameter than compared with single glutathione treatment without combination with vitamin E.*

Keywords; enrichment, feed, glutathione, vitamin E, gonads