

Fig 2. Nitrite content performance during the experiment

In control enclosures, the nitrite concentration was  $0.0226 \pm 0.0057$  mg/l. In enclosures with 1 kg of *Gracillaria* /m<sup>3</sup>, the average of nitrite concentration was  $0.0153 \pm 0.0006$  mg/l, or reduced by 26.08%. In the presence of 2 kg *Gracillaria* /m<sup>3</sup> the average nitrite concentration was  $0.0181 \pm 0.0021$  mg/l. It was 17.39% lower compared to controls. The average nitrite concentration in enclosures with 3 kg *Gracillaria* /m<sup>3</sup> was  $0.0091 \pm 0.0026$  mg/l or 59.74% lower than controls. The presence of *Gracillaria* in shrimp pond reduces nitrite content, even though statistically not significant. The nitrite content reduction was the highest at the presence of 3 kg *Gracillaria* /m<sup>3</sup>. With 1 kg and 2 kg *Gracillaria* /m<sup>3</sup> the average of nitrite concentration was similar. *Gracillaria* density was positively correlated to nitrite removal. ( $r = -0.66^*$ ,  $p = 0.0488$ ,  $n = 12$ ).

### Nitrate removal

The average of nitrate content in the research was ranged between 0.017 mg/l to 0.394 mg/l. This ranged was relatively low compared to nitrite content in shrimp pond that intensively managed, which is around 4,57 mg/l. The average of nitrate concentration in controls was 0.243 mg/l. With *Gracillaria*, the content of nitrate was reduced. The increase density of *Gracillaria* will lead to increase in nitrate removal. *Gracillaria* is one of aquatic plant that absorbed nutrient in high speed (Dawes, 1981).

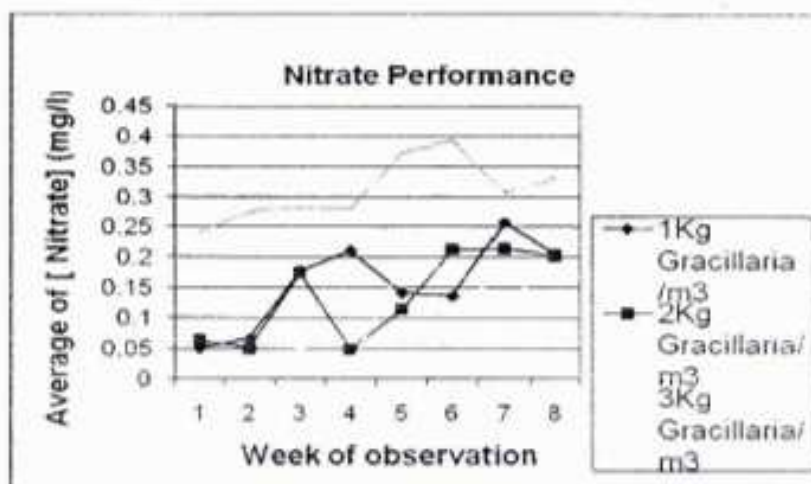


Fig.3. Nitrate content performance during the experiment