

Settlement Ability Level of Pearl Oyster Spat (*Pinctada maxima*) on Difference of Salinity and Collector

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Introduction

The effort to obtain a pearl is currently experiencing growth, originally obtained from the dive in the sea, now it can be overcome with the cultivation. The success of pearling farm can be done with environmental manipulation. A water salinity treatment is one of alternative ways to get it. It required a hatchery technical knowledge and financial analysis, thus spurring the production of larvae and spat, and the cultivation of pearl oysters.

The purpose of this research are: (1) Ability to produce larvae and spat production, (2) calculate SR, and (3) identify shell length and the number of spat attached on different substrates ie polyethylene rope, PVC pipe, and water net with different salinity 31 ppt, 33 ppt, and 35 ppt.

Methods

This research is based on an experimental method and was conducted at the laboratory.

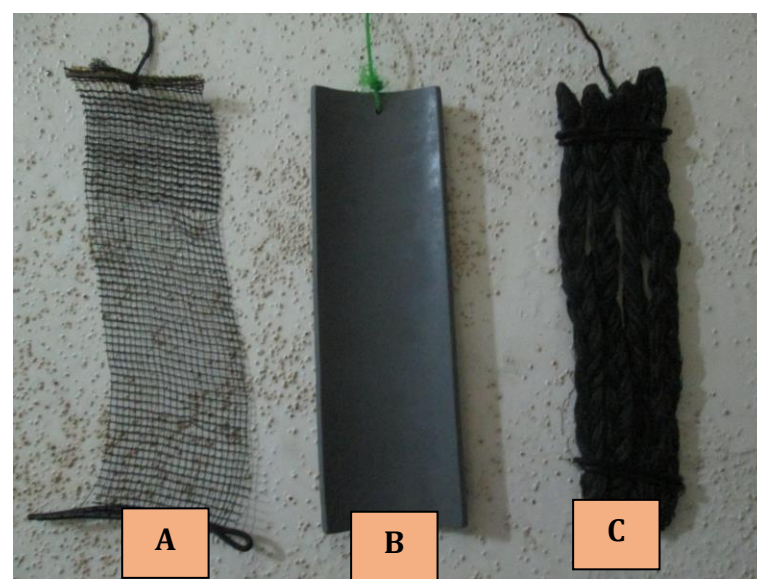
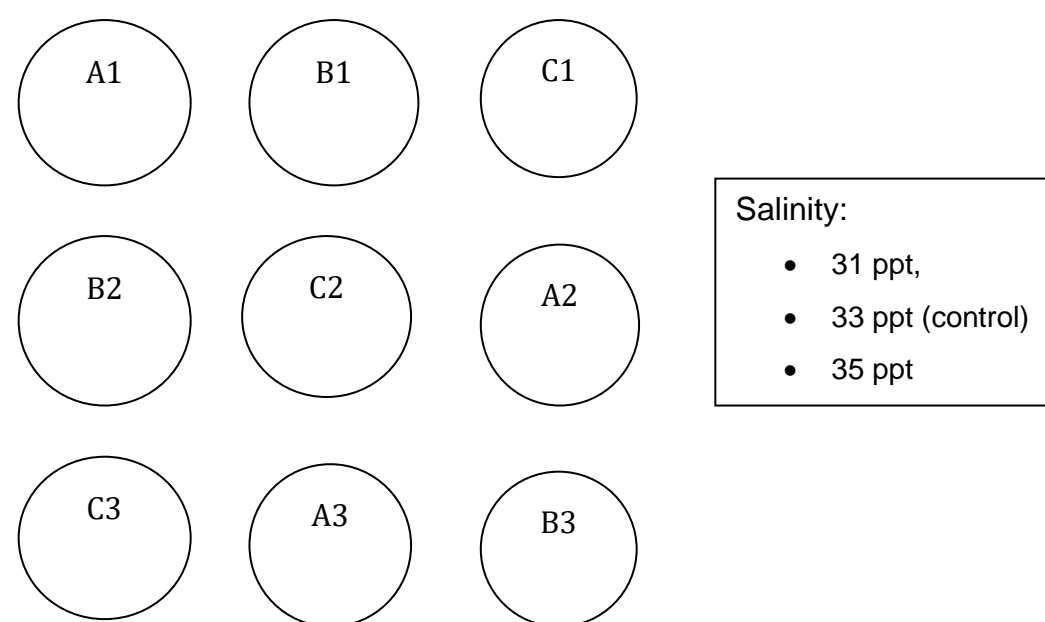
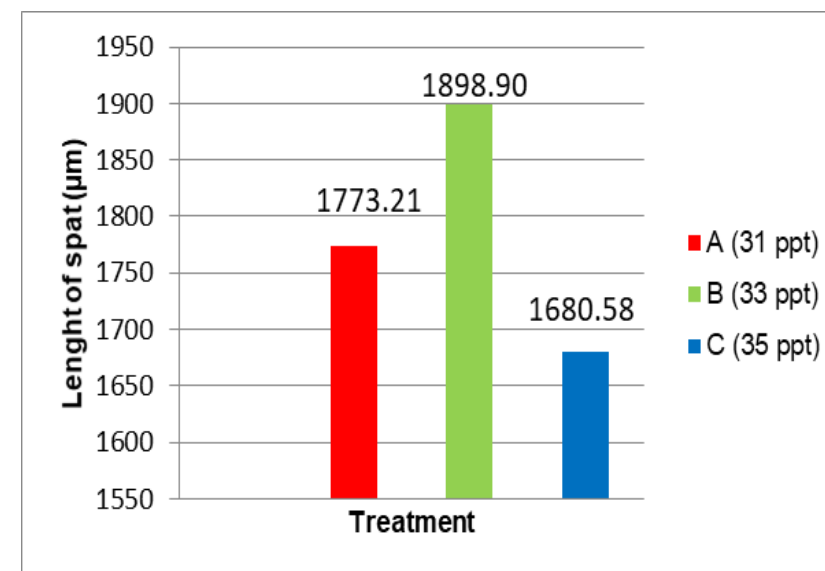


Figure 1. A. Water Net, B. PVC, C. Polyethylene Rope

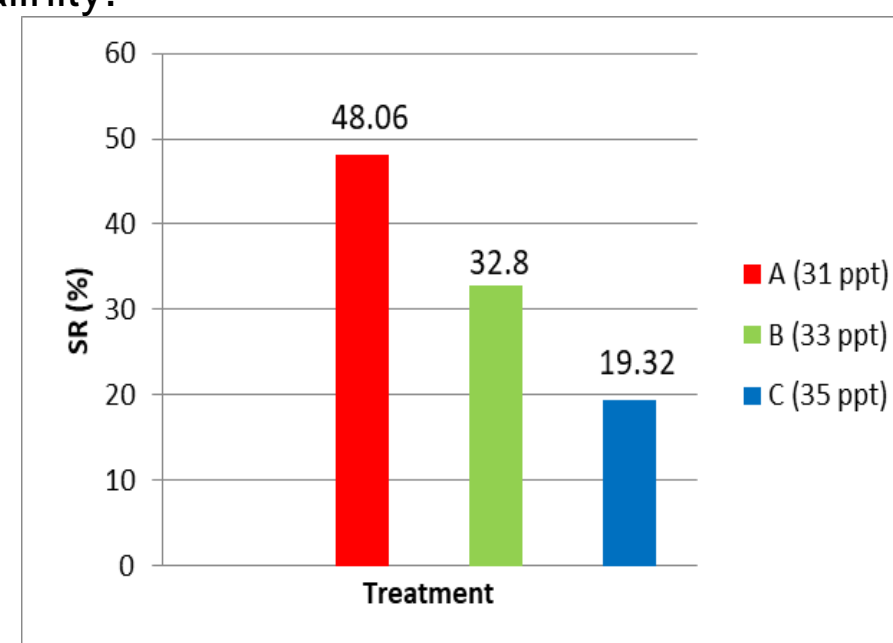
The experimental design was a completely randomized design (CRD) with three treatments and three replicates which each treatment are treatment A (31 ppt), treatment B (33 ppt/without treatment), and the treatment C (35 ppt), and each treatment was given different substrates as Spat attachment points such as Water Net, PVC pipe and Polyethylene rope.

Results



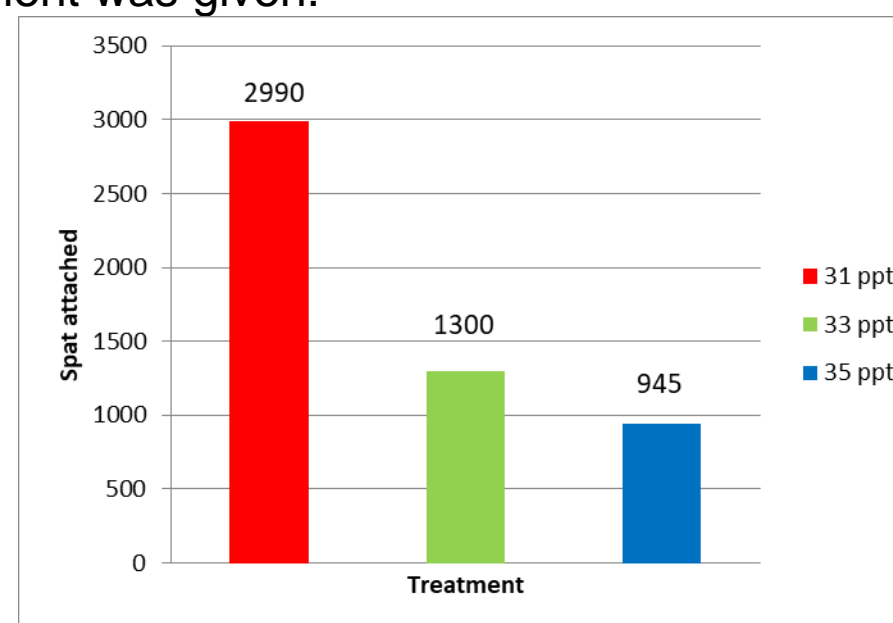
Histogram 4. The length of spat on different salinity

The final results showed the growth of length-Spat most good, namely maintenance without treatment with 33 ppt salinity.

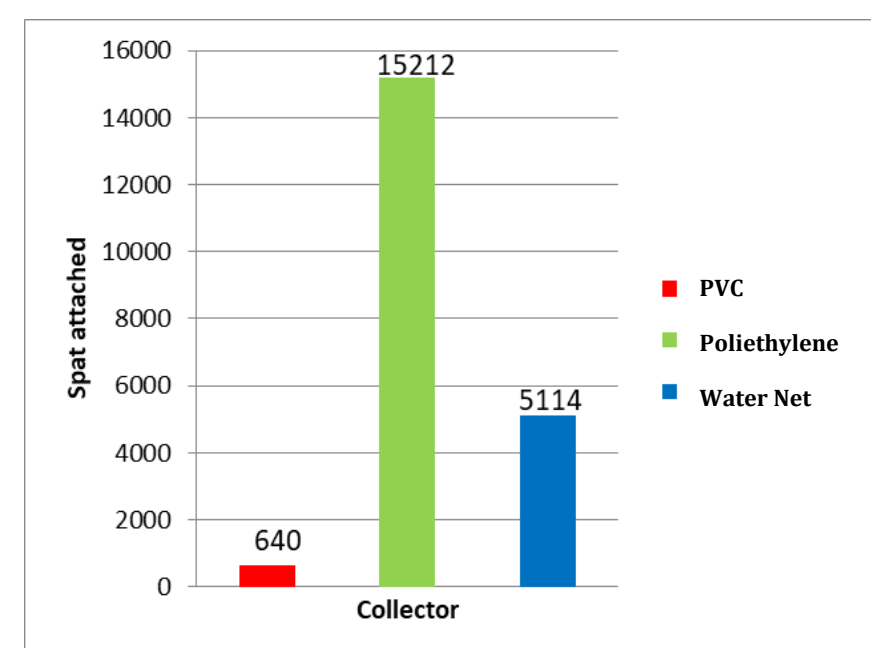


Histogram 2. Survival Rate (SR) of spat

The survival rate (SR) in the treatment A (31 ppt) is 48.06% and the lowest in treatment C (35 ppt) is 19.32%. But from the results of the analysis of variance showed that there was no significant effect of the treatment was given.



Histogram 3. The amount of spat attached on different salinity



Histogram 4. The amount of spat attached on different collector

Spat most attached to the treatment A (31 ppt) and the lowest in treatment B (35 ppt). However, from the results of the analysis of variance (ANOVA) the

treatment was not significant effect. While the number of Spat most stick with a given substrate, namely the substrate polyethylene rope and the least attached to the substrate PVC pipe.

Discussion

The maintenance of pearl oyster spats in the treatment (33 ppt) given produces the highest growth because the spat can eat and perform the metabolic activity well. One type of phytoplankton given as a natural feed for spat is *Chaetoceros amami* which can be eaten well by spat for growth and survival.



Figure . Monitoring condition and length of spat

The high survival rate with salinity 31 ppt is suspected because this salinity level is the optimum salinity level for the metabolism of pearl oyster larvae.

The survival rate is 32.8% (33 ppt), 19.32% (35 ppt) at the end of maintenance (observation for 20 days) is suspected because the longer the maintenance time of larvae with different salinity, the more difficult the larvae are to adapt to an environment that is not optimal for their life.

The results showed that the spat was more attached to the polyethylene rope, but the results of the various analysis showed no real effect on any treatment given with the results of the analysis. This is thought to be because the type of substrate is a higher roughness level so that the spat is stronger and likes to stick to the type of substrate.

The number of spat attached to the salinity of 31 ppt is suspected because this salinity level is the optimum salinity level for the metabolism of pearl oyster larvae and spat.

Recommendations

- Further research on the durability of algae as a food to live on the different salinity is still needed.
- Do specific checking and identification of the disease in selecting broodstocks that will be used for spawning to get good genetic

Acknowledgements

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