The 1st International Conference on Biotechnology and Food Sciences (INCOBIFS) Surabaya Indonesia, 11 September 2020

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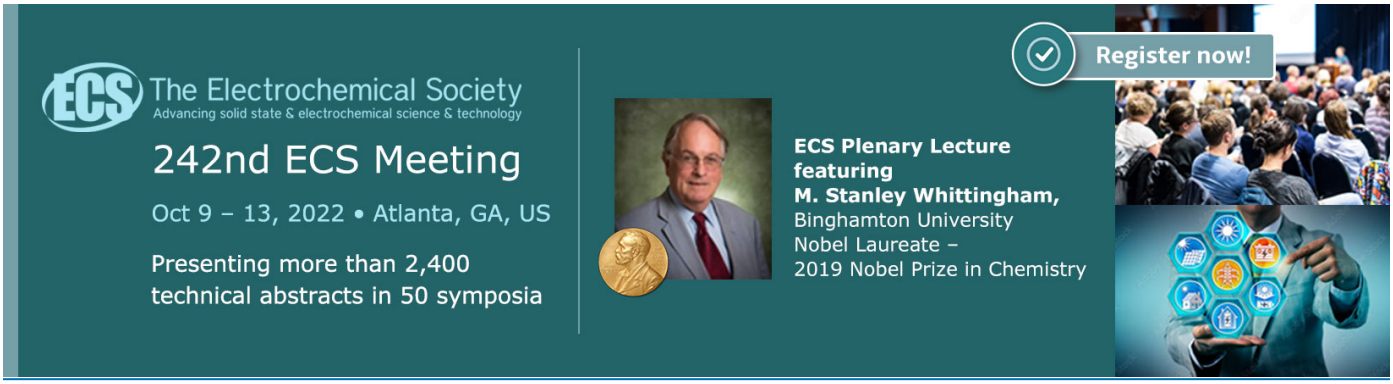

The 1st International Conference on Biotechnology and Food Sciences (INCOBIFS) Surabaya Indonesia, 11 September 2020

Its such great pleasure for me to welcoming all of you on behalf of Faculty of Fisheries and Marine Universitas Airlangga, for the first International Conference on Biotechnology and Food Sciences Conducted in Surabaya, Indonesia, September 11, 2020 by online system through ZOOM platform. Due to the pandemic of COVID19, the conference will be held online in case the physical distancing measures are still in place during current SARS-COV2 pandemic issue. Theme of this conferece is "***Breakthrough in Fisheries, Marine and Food Biotechnology to Support Sustainable Development Programs***".

The 1st International Conference on Biotechnology and Food Sciences (INCOBIFS) aims to communicate the results of research and innovation in basic and applied science, especially in Biotechnology in Agriculture, Fisheries and also Food Sciences. This area includes current situations, e.g. the COVID-19 pandemic, but also to predict our future, e.g. climate change effect in the agriculture and fisheries sector. Technically, we had the conference divided into 2 (two) sessions in general: (1) keynote speaker session and (2) guest speaker session. In the keynote session, we had 3 (three) keynote speakers delivering a speech which were Prof. Kazuo Miyashita from Hokkaido University, Japan; Prof. Dr. Hari Eko Irianto from Ministry of Marine and Fisheries Affair, Republic of Indonesia and Dr. Woro Hastuti Satyantini from Universitas Airlangga. Each keynote speaker had 1.5 hours for giving a presentation using ZOOM and 30 minutes for discussion in one virtual room. After the keynote speaker session, we proceeded to the guest speaker session in which all participants were divided into 5 (five) rooms according to our subtopics for oral and poster presentations:

- Marine Bioprospecting and Biomedical Engineering
- Marine Biomolecular and Biochemical
- Food Process, Functional food and nutraceutical
- Marine Phyto-chemistry and Pharmacology
- Food Security and food safety
- Fisheries and Marine Product and Potential by-products development

In this session, every speaker had 15 minutes for presentation and 5 minutes for discussion. Total participants joined in this conference was 100 participants. The aims of this conference is to developed and improve the goals of Universitas Airlangga to be of the Top 500 University in the world by contribute in improving Aquaculture and Fisheries Sustainable sector especially in marine Biotechnology for food security and food safety. We also cooperate with Scopus Indexed Publisher In order to assist students, lecturers and researchers in disseminating their research findings, to publish selected papers which are expected helping societies to implement the findings in the focus on developing aquaculture and fisheries sustainable.

The conference was in general quite successful. We strongly hope that all of participants get beneficial from this conference. We thank all participants and organizing committee for their support to this conference and see you in the 2nd INCOBIFS 2021.

Dr. Eng. Sapto Andriyono, S.Pi., MT

Chairman Committee of (InCoBIFS) International Conference on Biotechnology and Food Sciences

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Peer review declaration

All papers published in this volume of IOP Conference Series: Earth and Environmental Science have been peer reviewed through processes administered by the Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a proceedings journal published by IOP Publishing.

- **Type of peer review:** Double-blind
- **Describe criteria used by Reviewers when accepting/declining papers. Was there the opportunity to resubmit articles after revisions?**
  Yes, the Editor give the opportunity for author to resubmit article after revision according to the reviewer's comments.
  The reviewers will follow the regulation to accept or decline the papers according to the criteria below:
  1. Topic/ theme conference
  2. Guideline of IOP template
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- **Conference submission management system:**
  We conduct the submission through online submission. The manuscript from author has submitted before the conference through the conference website. After that the Editor will send the manuscript to the reviewer by online too. After Editor get the reviewer's comments, Editor will send back to author again if the manuscript has to be revised. All of the process through online. This conference has Editor, internal and external reviewer and Proofread teams.

- **Number of submissions received:**
  INCOBIFS = 84

- **Number of sumissions sent for review:**
  INCOBIFS = 84

- **Number of submissions accepted:**
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- **Acceptance Rate (Number of Submissions Accepted / Number of Submissions Received X 100):**
  INCOBIFS = 91,6 %

- **Average number of reviews per paper:**
  2

- **Total number of reviewers involved:**
  INCOBIFS 18 persons

- **Any additional info on review process (ie plagiarism check system):**
  We use Turnitin application to check the plagiarism

- **Contact person for queries:**
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PAPER • **OPEN ACCESS**

Corellation of water quality to the prevalence of ectoparasite in milkfish (*Chanos chanos*) in Sedati District, Sidoarjo

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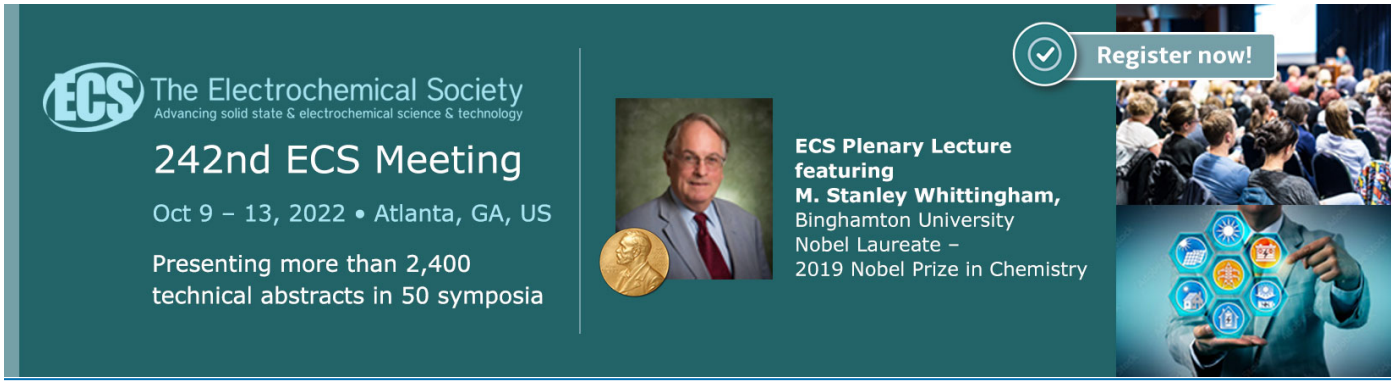

Corellation of water quality to the prevalence of ectoparasite in milkfish (*Chanos chanos*) in Sedati District, Sidoarjo

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Abstract. The management of fish aquaculture need to be considered. The poor quality of water can cause fish being easily stressed, so that can lead a disease in fish. This study aims to determine the prevalence of ectoparasites and knows the correlation between ectoparasites prevalence in milkfish, with the quality of the water contained in Sedati District, like Segoro Tambak Village, Banjar Kemuning, and Tambak Cemandi. The method is descriptive method which determined by specific criteria (purposive sampling). The sampling method was random sampling on each farm. The main parameter is water quality, such as temperature, salinity, pH, brightness, dissolved oxygen, and ammonia. Supporting parameters was the clinical symptoms of milkfish. The results showed that one ectoparasite species infested milkfish, namely *Chilodonella* with 0.2% total prevalence value of the three villages in Sedati District, the highest prevalence was in Tambak Cemandi, the lowest was in Segoro Tambak 0%, the measurement of water quality in the three villages ranged from temperature 26-27ºC, salinity 12-22 ppt, pH 8-8.5, brightness 23-28 cm, dissolved oxygen 2-5 mg / L, ammonia 0.03-0.15 mg / L. There is a positive correlation between temperature, salinity, pH, dissolved oxygen, ammonia, and brightness with the prevalence of *Chilodonella*.

1. Introduction

Controlling the conditions of the aquaculture environment in order to remain stable and optimal for aquatic organisms including fish as cultivated animals is very necessary. One of them is the quality of water as a living medium for the biota. Good water quality is a suitable water for cultivation activities where commodity types can live and grow normally. The poor quality of water in aquaculture can cause fish being easily stressed, so that can lead a disease in fish [1].

The cultivation of milkfish that has been carried out is cultivation in ponds and marine floating net cages. The fishpond area of East Java province was recorded in 2009, East Java had a pond area of 58,100.69 ha or ± 10% of the total pond area in Indonesia. Meanwhile, the area with the largest pond area is in two locations, namely Gresik 17,095.08 ha and Sidoarjo 15,530.40 ha. Although Gresik has a larger pond than Sidoarjo, the production level of Sidoarjo pond is higher than Gresik [2].

The increasing demand for milkfish requires the development and sustainability of milkfish cultivation activities which often face obstacles. One of them is when an infectious disease, like viruses, bacteria, fungi and parasites occurs [3]. Parasites are small organisms that live outside or

inside other larger organisms to obtain food. According to Azmi *et al*. [4] parasites in fish can be divided into two group, ectoparasites and endoparasites. Endoparasites are parasites that live on organs in the body of the fish such as digestion, blood, liver and other body tissues. Ectoparasites are parasites that live on the outer surface of the host's body such as scales, skin and gills. Ectoparasites infection results in damage to external organs, namely the skin and gills.

The emergence of disease cannot be separated from the role of water quality. Water as a living medium for fish must have a good quality and quantity requirements. Pond water management is an activity to prepare and maintain water quality during maintenance [5].

2. Materials and methods

2.1 Research metodhology

The research materials consisted of milkfish (*Chanos chanos*) and giemsa solution as staining for protozoan parasites. Research equipment consisted of sample bottles, thermometer, sechi disk, DO test kit, ammonia test kit, pH paper, refractometer, and microscope. Plastic transport filled with oxygen used for taking fish samples, tweezers used for the calculation of ectoparasite identification, object glass, cover glass, dropper, tray, and tissue.

2.2 Research design

This study uses descriptive research, namely a research method that seeks to describe and iterate objects just the way it is. This study uses a descriptive-analytical research design, which is to find facts with correct interpretations and find out the analysis shown to test hypotheses and make deeper interpretations of relationships [6].

2.3 Field survey

The field survey was carried out in the pond of the Sedati District. Sedati District was chosen because it has a center of superior milkfish cultivation in Sidoarjo. Three villages were taken, there are Segoro Tambak, Tambak Cemandi and Banjar Kemuning which were chosen because of their different geographical locations and data on farmers who cultivate milkfish. According to Deri *et al.* [7], the determination of the location of the observations was carried out by purposive sampling, then the location selected with certain considerations and criteria.

2.4 Sampling

The sampling method was random (random sampling) which was taken in three villages in the Sedati District, there are Segoro Tambak, Tambak Cemandi and Banjar Kemuning. Each location was taken as much as 5% of fish from the fish population in the pond plots of 1000 fish, 50 fish in each location, the total sample of fish was 150 fish. According to Yount [8], fish samples with a population of 1000-5000 were taken as much as 5% of the fish population.

2.5 Sample inspection

Identification aims to determine the type of ectoparasites infested milkfish, such as fins, skin and gills. The method of examining ectoparasites on the body surface is done by scraping [9]. The fish that had been taken were measured for body length and observed by scraping the body surface and fins, scraping was carried out on both sides of the fish's body and also all parts of the fins then observed under a microscope with a magnification of 100x. If ectoparasite is found positive, staining is immediately carried out, whereas if it is negative, the examination is continued on the next sample. Examination of milkfish gills is done natively, namely by directly examining the gill lamellae using a 40x and 100x magnification microscope. Prevalence is the large percentage of infested fish from the sample fish examined. Prevalence is calculated using the following formula:

$$\text{Prevalence} = \frac{\text{The number of fish that were attacked}}{\text{The number of fish samples examined}} \text{ x } 100\%$$

2.6 Water quality measurement

Water quality measurements are carried out simultaneously with milkfish sampling, water quality measured are temperature, brightness, pH, ammonia, salinity, and dissolved oxygen. Temperature measurements were carried out with a thermometer, brightness with a secchi disc, pH with pH paper, salinity with a refractometer, and dissolved oxygen with a DO test kit. Meanwhile, ammonia uses an ammonia test kit. According to Mardiana *et al*. [10] the feasibility of cultivation can be viewed from the quality of water in the form of temperature, dissolved oxygen, salinity, brightness, pH, and ammonia which are sufficient to describe the feasibility of a waters in cultivation.

2.7 Research parameters

The main parameters in this study were the type of ectoparasite and the prevalence of ectoparsite that attacked milkfish. The results of water quality measurements include temperature, pH, salinity, dissolved oxygen, brightness and ammonia. Supporting parameters include observation of clinical symptoms of milkfish that affect the condition of the fish, such as white spots, inactive fish, and skin irritation due to eating epithelial cells.

3. Result and discussion

3.1 Water Quality Measurement

Water sampling and measurement of water quality were carried out in a milkfish pond in Sedati District which was selected from three locations, there are Segoro Tambak, Banjar Kemuning, and Tambak Cemandi. Water quality measurements include temperature, salinity, brightness, pH, dissolved oxygen, and ammonia. The results of water quality measurements can be seen in table 1.

Table 1. Results of water quality measurements

Parameter	District		
	Segoro Tambak	Banjar Kemuning	Tambak Cemandi
Temperature (^{O}C)	27	26	27
Salinity (ppt)	22	16	12
pH	8	8	8.5
Brightness (cm)	26	23	28
Dissolved Oxygen (mg/L)	5	4	2
Ammonia (mg/L)	0,03	0,03	0.15

The results of the examination show that there are differences in water quality, this is due to differences in the location taken in Segoro Tambak village, a pond that is taken close to the beach so that the traffic is higher than other villages by 22 ppt, ponds in Banjar Kemuning Tambak sampled far from the beach with the salinity of 16 ppt, and ponds in Tambak Cemandi sampled further away from the beach, therefore the salinity is lower than the others, which is 12 ppt, other water quality such as dissolved oxygen in Tambak Cemandi village, is below the optimal value range for milkfish cultivation, which is < 3 ppm at 2 ppm.According to Reksono [11] the optimal dissolved oxygen content for milkfish cultivation is > 3 ppm. Ammonia in Tambak Cemandi village is the highest compared to the other two villages, that is 0.15 mg / L. According to Harijanto [12], the ammonia content that is still tolerated by milkfish is < 0.1 mg / L.

3.2 Ectoparasites found

Research on a total of 150 fish from three villages in Sedati District, there are Segoro Tambak, Banjar Kemuning, and Tambak Cemandi which were sampled, found ectoparasites that infest milkfish in the pond, namely *Chilodonella* of the protozoan phylum attached to the gills.

Chilodonella included in the protozoan phylum of the ciliate class has an asymmetrical morphology of oval body shape with an indentation on the posterior side. This protozoa has a number of small vacuoles, macronucleus, micronucleus and is covered in ventral cilia as a means of movement. Chilodonella was found in milkfish scales which were scraped first, then observed on a microscope with a magnification of 100x. This parasite infests milkfish in Banjar Kemuning and Tambak Cemandi areas. The results of the observations can be seen in Figure 1.

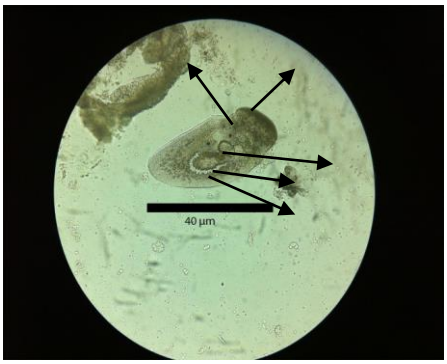

Figure 1. *Chilodonella* at 100x magnification (1) Macronucleus, (2) Micronucleus, (3) Oral basket, (4) Vacuole, (5) Cilia.

The ectoparasites that were found consisted of one species, that is Chilodonella from phylum protozoa and ciliate class which were found in the pond sites of Banjar Kemuning and Tambak Cemandi villages. These parasites were found to infest the skin and fins of the milkfish. The parasite forms an asymmetric oval body with an indentation on the posterior side. This protozoa has two contractile vacuoles which are located on the right anterior and the other is located posteriorly, there are cilia as a means of movement. This is in accordance with the key identification which states that Chilodonella has a slightly asymmetric oval-shaped body, has an oval-shaped macronucleus, a micronucleus that is located in the posterior region, has two contractile vacuoles which are anterior and posterior.

3.3 Ectoparasite prevalence

The prevalence rate of milkfish that is attacked by ectoparasites in the Sedati District can be seen in table 2.

Table 2. Prevalence of milkfish attacked by ectoparasites

Village	Number of milkfish infested with ectopracite		Prevalence (%)	Prevalence Category
	+	-		
Segoro Tambak	0	50	0	*Almost never*
Banjar Kemuning	2	48	4%	*Occasionally*
Tambak Cemandi	3	47	6%	*Occasionally*
	5	145	10%	*Often*

Note: (+) is infested with ectoparasites, (-) is not infested with ectoparasites

The results showed that there were ectoparasites that attacked milkfish with the discovery of Chilodonella species. The total prevalence is 10% which is included in the Often category, in Segoro Tambak village, there are no ectoparasites that attack milkfish, therefore the prevalence value of 0% is included in the Almost never category, in Segoro Tambak village there were 2 fish that were attacked by parasites out of 50 fish. The sample of milkfish that was examined with a prevalence value of 4%, included in the Occasionally category, Tambak Cemandi village found that 3 fish were attacked by

Chilodonella ectoparasites from a sample of 50 examined milkfish with a prevalence value of 6% which was included in the Occasionally category.

The results of calculating the total prevalence of ectoparasites in milkfish (*C. chanos*) shows that from the total fish taken as many as 150 fish, 5 fish were positively attacked by ectoparasites, where in Segoro Tambak village there were no ectoparasites that infested milkfish so the prevalence value of 0% was included in the Almost never category, Segoro Tambak village found two. Fish that were infested with Chilodonella ectoparasite, the prevalence value obtained was 4% into the Occasionally category, and in Tambak Cemandi village, it was found that three milkfish were infested with Chilodonella parasites, the prevalence value obtained was 6% into the Occasionally category. The 10% total prevalence value of the three villages in Sedati District is included in the Often category, namely the occurrence of ectoparasites that attack milkfish from three villages in Sedati District.

The difference in the prevalence value of ectoparasites is caused by several factors, such as water quality. According to Handayani *et al*. [13] the incidence of ectoparasite infection occurred in several factors of water quality in cultivation, fish age, fish size, and differences in the fish given.

3.4 Correlation Between Water Quality and Ectoparasite Prevalence

3.4.1 Result

The results of the calculation of the correlation coefficient between salinity and prevalence *Chilodonella* in milkfish (*Chanos chanos*) which is R = 0.997 with the linear regression equation is Y = 13.42-0.605x. The result of the calculation of the correlation coefficient between pH and the prevalence of Chilodonella in milkfish (*Chanos chanos*) is R = 0.756 with the linear regression equation is Y = -62 + 8x. The results of the calculation of the correlation coefficient between brightness and prevalence *Chilodonella* in milkfish (*Chanos chanos*) which is R = 0.929 with the linear regression equation is Y = 10,143-1,857x. The results of the calculation of the correlation coefficient between dissolved oxygen and prevalence *Chilodonella* in milkfish (*Chanos chanos*) which is R = 0.929 with the linear regression equation is Y = 10,143-1,857x. The results of the calculation of the correlation coefficient between ammonia and prevalence *Chilodonella* in milkfish (*Chanos chanos*) which is R = 0.756 with the linear regression equation is Y = 1 + 33.33x.

3.4.2 Discussion

The results of statistical analysis were the correlation coefficient (R) between water quality and the prevalence of ectoparasites found in milkfish (*Chanos chanos*). The value of the correlation coefficient between temperature and the prevalence of Chilodonella is R = -0.189 this value indicates a low negative correlation between temperature and the prevalence of Chilodonella ectoparasites. R2 is the coefficient of determination 0.036 which shows the ability of temperature to influence the prevalence of Chilodonella ectoparasites by 3.6%, while the remaining 96.4% is influenced by other factors such as other water quality. In the equation Y = 30-1x the value of the regression coefficient is equal to, every 1 unit increase in temperature content will have an effect on decreasing the average prevalence of Chilodonella by 1 unit.

The correlation coefficient between salinity and *Chilodonella* prevalence is R = -0.997 this value indicates a very strong negative correlation between salinity and prevalence. R2 is the coefficient of determination of 0.994, indicating the ability of salinity to influence the prevalence of ectoparasites by 99.4%, while the remaining 0.6% is influenced by other factors. The amount of regression can be expressed in the equation Y = 13,421-0,605x. The regression coefficient of -0.605 negative sign (-) indicates an opposite relationship between salinity and the prevalence of Chilodonella because the regression coefficient is negative, which means that each increase in salinity will be followed by a decrease in the prevalence value of Chilodonella. Every 1 unit increase in salinity will have an effect on decreasing the average prevalence of Chilodonella by 0.605 units.

Correlation coefficient (R) value between pH and ectoparasite prevalence *Chilodonella*is 0.756 this value indicates a strong positive correlation between pH and the prevalence of ectoparasites. R2 is the coefficient of determination of 0.571 indicating the ability of pH to influence the prevalence of

ectoparsite by 57.1% while the remaining 42.9 is influenced by other factors. The regression equation, namely Y = -62 + 8x the regression coefficient of +8 sign (+) shows the same relationship, that's if the ph content increases by 1 unit it will affect the prevalence which increases by 8 units.

The correlation coefficient value between brightness and the prevalence of Chilodonella ectoparasites was –0,982 this value indicates a very strong negative correlation between brightness and ectoparasite prevalence. R2 is the coefficient of determination of 0.964, indicating the ability of brightness to influence the prevalence of ectoparasites of 96.4%, the remaining 3.6% is influenced by other factors. The regression equation is Y = 43,833-1,5x, where if the brightness increases by one unit, the prevalence decreases by 1.5.

The value of the correlation coefficient between dissolved oxygen and the prevalence of Chilodonella ectoparasites is -0.929 this value indicates a very strong negative correlation between dissolved oxygen and the prevalence of Chilodonella ectoparasites. R2 is a terminated efficiency value of 0.862, indicating the ability of dissolved oxygen to affect the prevalence of ectoparasites by 86.2%, the remaining 13.8 is influenced by other factors. The regression equation Y = 10,143-1,857x where if dissolved oxygen has increased by one unit, the prevalence has decreased by 1.857.

The correlation coefficient value between ammonia and the prevalence of Chilodonella ectoparsite is 0.756. This value indicates a strong positive correlation between ammonia and the prevalence of Chilodonella ectoparasite. R2 is the coefficient of determination of 0.571 indicating the ability of ammonia which affects the prevalence of ectoparasites by 57.1% and the remaining 42.9% is influenced by other factors. The regression equation is Y = 1 + 33.33, where when ammonia has increased by one unit, the prevalence has decreased by 33.33.

4. Conclusion

The water quality in the milkfish ponds in the three villages in Sedati District, namely Segoro Tambak, Banjar Kemuning and Tambak Cemandi, is still in good enough condition for milkfish cultivation. The prevalence of ectoparasites that was found was 10% of the total of the three villages into the category *often*. There is a very strong negative correlation between salinity, brightness and dissolved oxygen to ectoparsite prevalence, strong positive correlation between pH and ammonia to ectoparasite prevalence, low negative correlation between temperature and ectoparasite prevalence in milkfish.

5. References

[1] Maniagasi R S, Tumembouw, and Mundeng Y 2013 *J Budidaya Perairan* **1**(2), 29-37
[2] Jamaluddin A N, Ratniarsih I, and Widjajanti W W 2013 *J IPTEK* **17**(1), 201-212
[3] Jasmanidar 2011 *Bionatura* **13**(1), 25-30
[4] Azmi, H, Rini D, and Kariada N 2013 *J Life Sci* **3**(2), 64-70
[5] Purwanta W and Firdayati M 2002 *J Teknik Lingkungan* **3**(1), 61-65
[6] Nazir M 2011 *Metode Penelitian Cetakan Ketujuh* (Bogor: Ghalia Indonesia) 89 p
[7] Deri, Emiyarti and L. O. A. Afu. 2013 *J Mina Laut Indonesia* **1**(1), 38-48
[8] Yount R 2006 *Research Design and Statistical Analysis for Christian Ministry* (Publisher: Dr. Rick Yount) p 74
[9] Noga E J 2010 *Fish Disease Diagnosis and Treatment* 2nd *Edition* (USA: Wiley-Balckwell) p 123-138
[10] Mardiana, Mingkid W, and Sinjal H 2015 *J Budid Perair*. **3**(1), 154-164
[11] Reksono B, Hamdani H, and Yuniarti M 2012 *J Perikanan Kelautan* **3**(3), 41-49
[12] Harijanto 2007 *J Nep* **16**(1), 30-41
[13] Handayani R, Adiputra Y T, and Wardiyanto 2013 *Aquasains* **3**(1), 28-41