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Effect of Time Difference in Catching Wire Bubu on Catch Results in the Waters of the Musi Tributary, Terusan Village, Musi Banyuasin Regency

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Abstract—This study aims to determine the effect of the difference in fishing time of wire bubu on the catch. This research was carried out for 30 arrests in the waters of the Musi tributary of the Musi River in Terusan Village, Musi Banyuasin Regency from January 4, 2024 to February 3, 2024. The method used in this study uses the experimental fishing method which is carried out during the day (11.00-17.00) and at night (18.00-24.00). The data obtained was then analyzed using the mean difference test (t-test). The results showed that the catch of sepat fish and snakehead fish during the day and night was significantly different (P<0.05), while the catch of betok fish and tembakang fish during the day and night was not significantly different (P>0.05). The conclusion of this study is that there is a difference in fish catches during the day and at night where the catch using bubu fishing gear at night is higher than during the day.

Keywords—Wire Bubu, Catch Time, And Catch

I. INTRODUCTION

Musi Banyuasin Regency is one of the areas in South Sumatra where there are Musi River and Batanghari Leko River which have natural wealth in the form of freshwater fish found around 620 species of fish that live on the East Coast of South Sumatra and in the Musi River [6].

The Musi River, which is the largest river in South Sumatra, flows through Terusan Village in Sanga Desa District, which is located in Musi Banyuasin Regency. Residents and fishermen of Terusan Village usually use various fishing tools to catch fish, such as fishing rods, ropes, nets, and bubu, where the dominant fishing gear used is bubu fishing gear. Bubu fishing gear consists of two types, namely bamboo bubu and wire bubu. Wire bubu is one of the most widely used passive fishing tools than bamboo bubu by the people of Terusan Village because it is easy to use. The operation of this fishing gear uses chopped palm fruit bait. The principle of using bait is to attract fish to enter the bubu fishing gear [8]. Fish that enter the bubu fishing gear will be trapped and unable to get out because there is an injab or fish entrance. The entrance of the bubu has one or two entrances to catch and make it easier for fish to enter [4].

Currently, fishing using bubu in the waters of the Musi tributary of the Musi River, Terusan Village is only carried out during the day so that it will only have an impact on fish caught that are active only during the day, the catch at night is more than during the day due to the behavior of fish in general who are active in foraging at night [5]. The condition of fishermen in Terusan Village is also only focused on catching without paying attention to the time of arrest, this is due to the lack of information related to the time of arrest. So that research related to day and night fishing times will provide useful information for fishermen. Based on these backgrounds and problems, it is necessary to conduct a study with the title "effect of time difference in catching wire bubu on catch results in the waters of the musi tributary, Terusan Village, Musi Banyuasin Regency".

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II. RESEARCH METHODS

A. Time and Place of Research

This research was carried out in the waters of the musi tributary, Terusan Village, Sanga Desa District. The research was carried out from January 4 to February 03, 2024

B. Research Materials and Equipment

The material used in this study is fish caught with wire fishing gear while the bait used is palm fruit that is cut into pieces. The equipment used in this study is 10 units of wire bubu fishing gear. Other equipment used are stationery, cameras, scales and laptops.

C. Research Methods

The research method used in this study is the Experiment fishing method, which is by installing wire bubu in the tributary of the Musi River in Terusan Village. The laying of wire bubu was carried out randomly at 10 points. The daytime setting is done at 11.00 WIB and the hauling is done at 17.00 WIB, the weight of the bait used is 10 g. The night setting was done at 18.00 WIB and the hauling was carried out at 24:00 WIB, the weight of the bait used was 10g.

D. Data collected

The data collected includes primary data and secondary data. The primary data collected includes fish catches in the form of fish type, number (tail) and weight (grams). The secondary data collected is data on the location of the research and previous research.

E. Working procedure

The work procedure carried out in this study is as follows:

1. This research begins by preparing the necessary tools and equipment materials, such as palm fruit that is cut into pieces. Then it was continued with the determination of the fishing location according to the habits of local fishermen.
2. In the operation of this fishing gear, before the fishing equipment is operated, the fishing ground is first determined.
3. Then the daytime installation (setting) was carried out at 11.00 WIB at the fishing ground after 6 hours of hauling at 17.00 WIB.
4. The installation at night (setting) was carried out at 18.00 WIB at the fishing ground after 6 hours of hauling at 24.00 WIB.
5. The catch obtained is recorded in the number (tail) and weight (gram) of fish for each fishing operation and is carried out 30 times.

F. Data Analysis

Data analysis using mean difference test or t-test during the day and night aimed to compare the average of two interrelated groups [1]. By using the following formula:

$$t\ hitung = \frac{X1 - X2}{\sqrt{\frac{(n1-1)s_1 2 + (n2-1)s_1 2}{n1+n2-2}\left(\frac{1}{n1} + \frac{1}{n2}\right)}}$$

Where:

X1 = Average catch during the day (tail)

X2 = Average catch at night (head)

n1 = Number of samples of group 1

n2 = Number of samples in group 2

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n = Sum of n1+n2

S12 = Variation of group values

III. DISCUSSION

A. General Conditions of the Research Location

This research was carried out in the Musi tributary of Terusan Village, Sanga Desa District, Musi Banyuasin Regency, South Sumatra Province which is 1 km away from community settlements with a tributary width of 1-2 meters with a depth ranging from 50 cm to 150 cm.

B. Analysis of Fishing Time Difference based on the number of catches (Tails)

The results of the analysis of the difference in day and night fishing time on the number of catches (tails) using wire bubu in the waters of the musi tributary, Terusan Village, Sanga District, Musi Banyuasin Regency can be seen in table 1.

Table. 1 Number of Day and Night Wire Bubu Catches in Continuation Village based on Number (Tail)

Total Results	Average			
Catch	Sepat	Betok	Tembakang	Snakehead
Noon	2.13a±0.82	1.97a±0.71	1.37a±0.71	0.50a±0.57
Night	1.80B±1.03	2.10b±1.21	1.33b±0.95	3.20b±0.99
T count	1,386750491	0,517888108	0,152376425	12,8683837
T table	1,67155	1,67155	1,67155	1,67155

Remarks: Different superscripts in the same column show that there is a real difference (P<0.05).

Based on Table 1. It can be seen that the number of catches of sepat fish, betok fish and tembakang fish at the time of day and night fishing in the musi tributary of Terusan Village shows no real difference in catch (P>0.05) where the value of Thit<Ttab, meaning that there is no effect of the difference in the time of day and night fishing using wire bubu on the number (tail) of the catch of spat, betok fish and tobacco fish.

The number of snakehead fish catches during day and night fishing in the waters of the tributary of Terusan Village showed a significant difference in catch (P<0.05) where the Thit>Ttab value, meaning that there was no effect of the difference in day and night fishing time using wire bubu on the number of snakehead fish catches. At night, the number of catches using wire fishing gear is greater than during the day, this is in accordance with the habit of snakehead fish that are actively foraging at night or also known as nocturnal fish. Catfish and snakehead are included in the category of fish that are active at night to forage [7]. Fish are "nocturnal" (foraging at night) and during the day they hide in dark and sheltered places in holes [5]. The eating habits of snakehead fish are related to the water temperature at night (nocturnal), the water temperature decreases, the snakehead fish are more aggressive towards food [2]. On the other hand, when the water temperature increases, snakehead fish become less aggressive towards food, this can be seen from the catch of snakehead fish at night at low temperatures get a larger number of catches, namely 96 fish while during the day at high temperatures only 15 fish [3].

C. Analysis of Fishing Time Difference based on the weight of the catch (grams)

The results of the analysis of the difference in day and night fishing time on the weight of the catch (grams) using wire bubu in the waters of the Musi tributary, Terusan Village, Sanga District, Musi Banyuasin Regency can be seen in table 2.

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Table. 2 Total Catch of Day and Night Wire Bubu in Terusan Village based on the weight of the catch (grams)

Weight Results Catch	Average			
	Sepat	Betok	Tembakang	Snakehead
Noon	174.30±65.10	177.67±82.01	124.47±67.28	71.47±92.44
Night	136.13±1.96.40	154.50±104.77	111.17±104.06	399.97±113.92
T count	1,796978859	0,953724832	0,587854023	12,2649075
T table	1,67155	1,67155	1,67155	1,67155

Remarks: Different superscripts in the same column show that there is a real difference (P<0.05)

Based on Table 2. The weight of the catch of betok fish and tembakang fish during day and night fishing in the Musi tributary of Terusan Village showed no real difference in catch (P>0.05) where the value of Thit<Ttab, meaning that there was no effect of the difference in day and night fishing time using wire bubu on the weight of the catch.

The weight of the catch of snakehead fish and sepat fish during day and night fishing in the musi tributary of Terusan Village showed a real difference in catch (P<0.05) where the value of Thit>Ttab, meaning that there was an effect of the difference in day and night fishing time using wire bubu on the weight of the catch. Different capture times result in differences in catches [9].

IV. Conclusion

Based on this study, it can be concluded that the fishing time of the wire bubu has a significant influence on the catch of fish where at night tends to give a higher catch compared to during the day.

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