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Keywords: *green turtle baby (chelonia mydas), growth, feed.*

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The Effect of Giving Dry Shrimp with Different Concentration on the Growth of Green Turtle Baby (Chelonia Mydas) in Sukamade Coastal Areas Meru Betiri National Park , Banyuwangi Regency, East Java

Edi Wibowo. K [α] & Suryono,Tri Saputra [σ]

Abstract- Turtle's exictence has long been threatened, either by nature or human eativities. The purpose of this research is to determine the effect of giving different feed concentration on the growth of green turtle baby (Chelonia mydas) at the age of 4 days for 5 week treatment period. This research uses experimental method. The material used is green turtle baby (Chelonia mydas) at the age of 4 days. The research was conducted at Sukamade Beach, Banyuwangi. The feed given is dry shrimp 3% and 8% of the weight of biomass. The results of the research indicate that the green turtle baby given dry shrimp with a concentration of 3% has a specific growth rate 1.429 ± 0.074 on average, less than the green turtle baby given dry shrimp with concentration of 8% which has a specific growth rate 1.630 ± 0.192. The results of the hohmogeneity of the data analysis shows that the value at F = 2.952 (p=0.161) or p>0.05, and it means the data is homogeneous. The specific growth rate by feeding treatment with different concentration s shows that the F count 22.611 > Ftable 0.05 and 0.01. it proves that the specific growth rate in both treatments are significantly diffenet at 0.05 and 0.01.

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I. Preface

Sea turtle is one of wildlife species in the spotlight due to a sharp population decline. Data from various sources indicate that the population of turtles in Indonesia dropped drastically in the last two decades. The observations of some researchers at several nesting sites indicate that the population decline could reach 80 (72% average) compared to the total population in the previos 15 years (Stringgel et al 2000: Suganuma et al, 1999). Continuous threats to the preservation of this endangered species can cause the extinction of this species, especially the types that the population is not much naturally (Suwelo and Somantri, 1990).

One of the problems faced is the number of green turtle baby that die after hatching. Green turtle baby receives less attention on the availability of feed and inadequate feed quality. After hatching, the green turtle baby is not given food for four days because green turtle baby still has food reserves in the form of egg yolk in his body. One of the nesting sites of green turtles is in Sukamade Beach, Meru Betiri National Park Area, Banyuwangi. According to the Meru Betiri National Park (1998), the area is known to be very productive for green turtle eggs due to many female green turtle land and nest in that area.

The newly hatched green turtle baby is very vulnerable to predators and disease. The green turtle baby is also not able to swim in balanced and to dive to avoid predators such as birds. Not all green turtle baby hatches in normal condition, some of them are defective. The defective green turtle must be separated from the normal one in order to be able to grow well (BKSDA East Java II, 1991).

II. Material and Methods

This research material uses 18 green turtle babies at the age of 4 days. They were divided into two treatments, three replications, and each of them consists of three green turtle babies. The babies were put in 6 plastic basins with 40 cm length, 30 cm width, and 10 cm height. The medium used is sea water that comes from Sukamade Beach which is usually used for breeding turtles in Meru Betiri National Park. The feed was given with 3% and 8% concentration of the biomass weight of the green turtle babies. The selection of 3% and 8% concentration refers to some researches that say that the optimal growth of green turtle baby with the concentration ranges between 5% and 10%. The choice of 3% feed concentration was to determine the growth of green turtle babies if the available natural feed is under normal condition and 8% concentration is selected when the available natural feed is in normal condition. Feeding is done twice a day in the morning at 09.99 and in the afternoon at 15.00 (Rihani, 2000 in Dawn, 2007).

The research method used is a laboratoty experimental method. Experimental obesrvation is an

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observation that is under artifical conditions (artifical condition) in which the condition is created and organized by researchers. Experimental research is research done by holding the manipulation of the object of the research (Nazir, 2005). This research uses a completely randomized design, the simplest kind of experimental design. Data analysis also uses proximate analysis to determine the nutrient content in dry shrimp, the feed of green turtle babies. Proximate analysis is a method of chemical analysis to identify the content nutrients such as protein, carbohydrate, fat and fiber in food substance (Hirth, 1991).

III. Results and Discussion

The weight growth of green turtle babies (Chelonia mydas) occurred in tih research varied in each treatment. The research shows that the growth of green turtle babies brought with 3% feed concentration did not increase very fast. While the growth of green turtle babies brought with 8% feed concentration was not stable at the beginning, but it increased rapidly in the last few weeks in line with the increase of maintenance time.

IV. Specific Growth Rate

The result of the specific growth rate of green turtle baby given dry shrimp feed with different concentration for 5 weeks is presented in Table 1.

Table 1 : The Average of Daily Specific Growth Rate of Green Turtle Baby (Chelonia mydas) during the Research

treatment	replay			Averages ± SD
	1	2	3	
Dry shrimp 3 %	1,375	1,399	1,514	1,429 ± 0,074
Dry shrimp 8 %	1,416	1,791	1,682	1,630 ± 0,192

The average result of the specific growth rate of green turtle baby given dry shrimp feed with different concentration has the highest average of specific growth rate, that is 1.630 ± 0.192% per day, while the lowest average of the specific growth rate is 1.492 ± 0.074% per day.

The analysis of variance test shows that the value of the specific growth rate using treatment of giving different feed concentration is F = 22.611, or (F > 0.05 or 0.01). It means that HO hypothesis is rejected and H1 hypothesis is accepted, which means that the specific growth rate of the green turtles baby given 3% and 8% feed concentration is significantly different.

a) Feed Conversion Ratio (FCR)

The result of feed conversion ratio of green turtle baby given dry shrimp feed with different concentration for 5 weeks is presented in Table 2.

Table 2 : The Conversion Ratio Value (g) of Green Turtle Baby (Chelonia mydas) Feed during the Research

Treatment	replay			Average± SD
	1	2	3	
Dry shrimp 3 %	4,080	3,947	3,791	3,940 ± 0,145
Dry shrimp 8 %	9,982	8,294	8,645	8,974 ± 0,891

The average result of the feed conversion ratio of green turtle baby given dry shrimp feed with different concentration has the highest average of feed conversion ratio, that is 8.974 ± 0.891 grams, while the lowest average of feed conversion ratio is 3.940 ± 0.145 grams. The result of variance test shows that the effect of giving different feed concentration to the feed conversion ratio is significantly different F count 23.893 > F table 0.01).

Table 3 : Nutrient Content of Dry Shrimp

No	kinds of Analysis	Levels 100% Gross weight
1.	Water Content	19,4916
2.	Ash content	32,8427
3.	Fat content	1,3266
4.	Fibre levels	1,5391
5.	Protein levels	58,1150

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Feed is said to be useful if there is a positive effect on the growth of animals (Effendi, 2002). It has not been known so far how much protein is needed by green turtle baby to grow optimally. Bjorndal (1985) estimates that the low growth rate of the turtle is influenced by its nutrient rather than its genetic control.

The enduring ability of green turtle baby to consume feed that is given in the form of dry shrimp is great, it can be seen from the total consumption for every treatment. Based on the daily monitoring of food remain, the results indicates that the green turtle baby ate up all the feed given. The grwoth of the turtle kept in tub maintenance is greatly influenced by the amount and quality of the available food and on the condition of water temperature (Nuitja and Uchida, 1983).

b) The Growth Rate of Carapace Length

The result of the measurement during the resarch also got the result of the growth of the carapace length. The result of the observation on the growth of carapce length using different feed concentration is presented in Table 4.

Table 4 : The Growth of Carapace Length (mm) of Green Turtle Baby (Chelonia mydas) during the Research

Treatment	replay			Average± SD
	1	2	3	
Dry shrimp 3 %	53,427	53,088	51,753	52,756 ± 0,885
Dry shrimp 8 %	54,015	54,628	54,082	54,242 ± 0,337

The average result of carapace length of green turtle baby showed that the average length of carapace given 3% feed concentration reached 52.576 ± 0.885 mm, while the treatment using 8% feed concentration reached 54.242 ± 0.337 mm. Statistical analysis of variance test showed that the value of F = 22.664 > 7.44 or (F count > F table). It means that it can be proved that the growth of the carapace length of green turtle baby given 8% feed concentration is significantly different from that given 3% feed concentration, that is on the 0.01% and 0.05%.

c) The Growth Rate of Carapace Width

From the measurement results during the research, it was also obtained the growth rate of carapace width. The observation result on the growth rate of carapace width using different feed concentration is presented in Table 5.

Table 5 : The Growth of Carapace Width (mm) of Green Turtle Baby (Chelonia mydas) during the Research

Treatment	replay			Average± SD
	1	2	3	
Dry shrimp 3 %	45,915	45,798	44,905	45,539 ± 0,553
Dry shrimp 8 %	46,227	46,320	46,515	46,354 ± 0,147

The survival rate of green turtle baby in this research is high, it is 100% in all treatment. This is presumable due to the low density and good quality of water condition. Maintenance system affects the survival rate of green turtle baby much. The density of each container that is not too high, 3 babies per vessel, could be expected to prevent the competition for space and food. The competition for space and food can cause the green turtle baby fight and get injured. Besides that, the high survival rate of green turtle baby is also supported by the quality of water as the maintenance media that is relatively constant and also by the selection of green turtle babies that were healthy and not defect. The quality of water is maintained by 100% water change.

V. Conclusion

Gicing different feed concentration showed no real difference to the growth of green turtle baby. Feed with 8% concentration showed better and significant growth than the feed with 3% concentration.

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