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Length Plastron Correlation towards Ridley Turtles Long Flipper that Given Lemuru and Seaweed Feeds

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Abstract

A turtle security that was released their habitat in conserving, it was determined by their speed and agility to swimming and diving at avoiding predators even chasing prey to be eaten. The most an important part of turtle organs for agile swimming and diving was a flipper. Flippers forward more function as paddles when swimming and diving while the rear flippers serve as a rudder to steer the direction of movement of swimming and diving. The front flippers are unlike paddle when swimming and diving, whereas, the back flippers as a rudder at direction when swimming and diving. At front flippers, there was belong strong nails for ripping or tearing their prey, therefore, it was easy eaten. The study was intended to know a feeding effect of lemuru and seaweed on different percentage towards length plastron correlation to in front length flippers both. An experiment material that was used in the research was 75 ridley turtles, having by the ranch turtle, PT. Moncot Sari, located in Desa Tanjung Benoa, South Kuta subdistrict, Badung regency. The experiments were designed using RAL, the analysis of correlation, regression, and data processing applied Costat Statistics. The research results were obtained the highest long plastron average rows on treatment E: 36.4 cm, D: 28.7 cm, A: 28,6 cm, B: 27.6 cm and C: 26.6 (P <0.01), a length plastron correlation and regression towards long front flippers were significant both front and back. A length plastron correlation (X) with front flippers r = 0.7768, b = 03 223 and a = 18.2499 very significant (p <0:01), whereas, the correlation between long front flippers (X) and long back flippers r = 0.6346, b = 0.9814, a = 14.6368 highly significant (P <0.01).

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1. Introduction

Ridley turtles (Lepidochelys olivaceous) recently experience decreasing population thus is protected by the regulation government No.7, 1999 of concerning the preservation of plant and animal. Internationally, all turtle species were protected by CITES (Convention on International Trade in Endangered Species of Flora and Fauna) convention. Ridley turtle population decline occurred almost throughout the countries in the world that have a beach and a water (Auregi *et al.*, 2004; Frazier *et al.*, 2007; Plotkin, 2008; Pandav *et al.*, 1994). In order to avoid the threatened turtles of extinction should be made conservation method (Mohanty-Hejmadi and Sahoo, 1994; Eckert, 1994). In Indonesia especially in Bali province, there have been many turtle volunteers, who want to preserve turtles, through by turtle conservation efforts that are associated with tourism. The business of turtle in PT. Monocot Sari Tanjung Benoa that based on tourism and turtle conservation have been long effort release hatchlings and adult turtles by involving tourists. The turtle is looked after in a pool, an organ that is most decisive agility turtle for swimming and diving agile and fast are flippers both front and rear. The front flippers are to serve as a rower whereas rear flippers unlike a rudder (Pariwono, *et al.*, 1988; Nuitja, 1992; Wyteken *et al.*, 2009; Sukada, 2013).

2. Materials and Methods

2.1 The place and timing research

This study has been conducted for 3 months in the Turtle Ranch Company, at PT. Moncot Sari Tanjung Benoa, South Kuta subdistrict, Badung regency.

2.2 Research material

Ridley turtles less than 5 years old and weight approximately 10 kg. They are 25 turtles. Their shelter is in the sea feeding seaweed plus lemuru about 10% of their weight. The adult turtle average is about 10 kg that is fed a mixture of seaweed and lemuru about 1 kg per day. Due to Ridley turtle will be a research object, therefore, the turtle's habitats are managed into five pools, each turtles feeding a seaweed and lemuru i.e. at pool No.1 the turtles are treated A (0.5 kg IL,0,5kg RL). A pool No.2 the turtles are treated B (0,4 kg IL, 0,6 kg RL). A pool No.3 the turtles are treated C (0.3 kg IL, RL 0.7). A pool No.4 the turtles are treated D (0.2 kg IL, 0,8kg RL). A pool No.5 the turtles are treated E (0,1kg IL, RL 0.9), the turtles at pool No5 hatchlings since been looked after to be adult turtles (5 years). The treatment has been given in 2010 to 2016, the data that was noted: BB (weight/*bobot badan*), KP (Karapak), PP (plastron), and FP (Flippers front and rear). The hatchlings release or turtles in their habitat are determined by turtle's agility and turtle speed at swimming, diving, chasing their prey or avoid themselves of predators.

Pool maintaining

The pools are separated into five habitats, each of them consists of five ridley turtles.

Ridley turtles feed composition

Treatment A: 0.5 kg IL, 0.5 RL
Treatment B: 0.4 kg IL, 0.6 RL
Treatment C: 0.3 kg IL, 0.7 RL
Treatment D: 0.2 kg IL, 0.8 RL
Treatment E: 0.1 kg IL, 0.9 RL

Feeding

Feeding is given at 7 am in the morning in accordance with an appropriate treatment that has been planned. The sea water is directly flowing into the pool.

Table 1
Ridley turtle length plastron (cm) that are given seaweed and lemuru feeding in different percentages

	PLASTRON				
	A	B	C	D	E
1	32	31	30	33	42
2	31	30	29	32	40.5
3	27	26	25	28	33.5
4	29	28	27	27	35.7
5	24	23	22	23.5	30.5

Table 2
Front ridley turtle length flipper (cm) that are given seaweed and lemuru feeding in different percentages

	FLIPPERS.D				
	A	B	C	D	E
1	26	27	26	29	32.5
2	30	29	28	31	31.4
3	26	27	26	27	27.3
4	29	28	27	28	29
5	26	26	24	26	24.5

Table 3
Rear ridley turtle length flipper (cm) that are given seaweed and lemuru feeding in different

	FLIPPERS.B				
	A	B	C	D	E
1	14	13	13	14	15
2	16	15	14	16	14
3	12	11	12	13	12
4	14	13	13	15	12
5	12	14	12	13	13

3. Results and Discussions

Table 4
Anova a treatment influence towards length Plastron

SK	JK	df	KT	FH	P
P	307.9744	4	76.9936	5.594**	0.0034
Error	275.272	20	13.7636		
Total	583.2464	24			

LSD (α:0,05) = 4,8944, EMS =13,7636

Table 5
Anova length plastron regression towards length front flippers

SK	JK	df	KT	FH	P
Total	100.4264	24			
Regression	606,093	1	606,093	350104**	0.00001
X	398,170	1	606,093	350104**	
Error	398,170	23	17,311		

Table 6
Length plastron Correlation towards length front flippers

X	Y	r	b	A
Length	Flippers	SE.r	SE.b	SE.a
Plastron	Front	0,7768	0,3223	182,499
		0,1312	0,0544	49,518

Table 7
Rear length flippers correlation towards length front flippers

X	Y	r	B	A
Flippers	Flippers	SE.r	SE.b	SE.a
Rear	Front	0,6346	0,9814	14,636
		0,1611	0,2491	65,406

Descriptions:
SE.r: An error standard means square of the correlation
SE.b: An error standard means squared of regression
SE.a: An error standard means square of intercepting

The length plastron is treated to each of the longest consecutively:
Treatment E: 36.44; treatment D: 28.7; treatment A: 28.6; treatment B: 27.6 and treatment C: 26.6 ($p < 0.001$). The turtles that are fed a seaweed more than lemuru provide plastron growth be better. In term of this due to adults, turtle tends to be herbivory. Whereas, the regression coefficient between plastron towards front flippers is highly significant ($P < 0.01$) in. R2 (determination coefficient) = 0.6035. It means that long-plastron (X) 60% is determined front length flippers (Y), while another 40% of front flippers (Y) is influenced by other factors. A close relationship of the length front and rear flippers also occur very well ($P < 0.001$)

4. Conclusion

Based on the analysis above can be concluded as bellows:

a) The best flipper growing of ridley turtles that was given a treatment (E: 0.1 IL: 0.9 RL)
b) It was occurred a very significant of positive correlation ($P < 0.01$) between long front flippers with rear flippers r = 0.6346, SE.r = 0.1611, b = 0.9814, SE.b = 0.2491 and a = 14 , 6368, SE.a = 6.5466.

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Statement of authorship
The author(s) have a responsibility for the conception and design of the study. The author(s) have approved the final article.

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References

Eckert, J. W., Sievert, J. R., & Ratnayake, M. (1994). Reduction of imazalil effectiveness against citrus green mold in California packinghouses by resistant biotypes of Penicillium digitatum. *Plant Disease*, *78*(10), 971-974.

Frazier, T. W., Youngstrom, E. A., Glutting, J. J., & Watkins, M. W. (2007). ADHD and achievement: Meta-analysis of the child, adolescent, and adult literatures and a concomitant study with college students. *Journal of learning disabilities*, *40*(1), 49-65.

Mohanty-Hejmadi, P., & Sahoo, G. (1994, March). Biology of the olive ridleys of Gahirmatha, Orissa, India. In *Bjorndal, KA, Bolten, AB, Johnson, D., Eliazar, P.(Compilers), Proceedings of the Fourteenth Annual Symposium on Sea Turtle Biology and Conservation. NOAA Tech. Memo. NMFS-SEFSC-351*.

Nuitja, I. N. S. (1992). *Biologi dan ekologi pelestarian penyu laut*. Penerbit IPB.

Pandav, B., & Choudhury, B. C. (1999). An update on the mortality of the olive ridley sea turtles in Orissa, India. *Marine Turtle Newsletter*, *83*, 10-12.

Pariwono, J. I. (1988). Studi upwelling di perairan selatan Pulau Jawa. *Laporan penelitian*.

Plotkin, S. A., & Plotkin, S. A. (2008). Correlates of vaccine-induced immunity. *Clinical infectious diseases*, *47*(3), 401-409.

Sukada, I. K., & Saransi, A. U. (2013). Model Matematika Hubungan Bobot Tubuh Dengan Ukuran Flipper Tukik Penyu Lekang Yang Diberi Pakan Ikan Tuna Versus Udang Dalam Bentuk Pellet Sampai Umur Tiga Bulan. *Majalah Ilmiah Peternakan*, *16*(1).

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Gede Suarta was born on January 3, 1966. He is a senior lecture at faculty of Animal Husbandry in the University of Udayana. He has been conducted some researches, they are (1) Pengaruh Faktor Anggota Terhadap Kemampuan Berkembang Koperasi (2) Unit Desa (3) Model Matematika Hubungan Luas Lahan dengan Jumlah Populasi Ternak (4) Sapi Bali di Provinsi Bali (5) Perilaku Peternak Babi dalam Menangani Limbah di Desa Tua, Kecamatan Marga, Kabupaten Tabanan, Bali (6) Kualitas Fisik dan Profil Mikroba Daging Babi yang ditambahkan Starbio dalam Ransumnya. He had been a head of Dekopinda Kota Denpasar in 1999-2009. He had been a head of KPN UNUD in 2001-2003. He has been as a Chairman of Yayasan Bali Kasih in 2006-present.