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SHORT COMMUNICATION

SOME PROBLEMS OF CULTURED SOFT-SHELL TURTLE (*PELODISCINA SINENSIS*) IN PENINSULAR MALAYSIA

A. Nurizan and B.L. Ong

Regional Veterinary Laboratory, Bukit Tengah,
P.O.Box 63, 14007 Bukit Mertajam, Malaysia.

SUMMARY

Some problems of cultured soft-shell turtle are discussed based on cases submitted to the Regional Veterinary Laboratory Bukit Tengah and field investigations. Diseases such as swollen neck and shell ulceration are highlighted. Some solutions are suggested to overcome these problems.

Keywords: Cultured soft-shell turtle, swollen neck, shell ulceration, management problems.

The soft-shell turtle is reputed to possess many medicinal values and is a delicacy of the Chinese. There has been a great demand for the meat recently in China, Hong Kong and Malaysia. Thus, a number of farms have been set up in the states of Kedah and Penang to exploit these markets. However, the culture of soft-shell turtle is relatively new in Malaysia and farmers face a number of problems. This paper attempts to discuss some of these problems and provide solutions to overcome them. It is believed to be the first paper of this nature in Peninsular Malaysia.

The information gathered in this paper were from cases submitted to the Regional Veterinary Laboratory in Bukit Tengah and field investigations of cultured soft-shell turtle at farms in Penang and Kedah states.

Diseases in cultured soft shell turtles were mainly due to bacteria and due to poor management. Strict hygiene is essential in keeping reptiles, and frequent cleaning and disinfection should be practised (Ippen and Zwart, 1996). Ponds should be sterilised with disinfectant such as lime and sun dried prior to stocking (Chen, 1990).

Predation: Predation is a common problem. Young turtles and hatchlings fall prey to predators such as crows, snakes, rats and monitor lizards while ants destroy the eggs. The incubation sites or hatcheries should be protected from these predators by fencing up the area and spraying chemicals on the surrounding area to prevent ants and snakes (Heng, 1994).

Bacterial diseases: Bacterial diseases in cultured soft-shell turtle are very common and cause high mortality and losses. All age groups are susceptible to bacterial infections. Stress due to transportation and environmental factors such as temperature variation might lead to outbreaks of latent bacterial infection (Ippen and Zwart, 1996). In one of the farms visited, the turtles were having swollen neck with mortality of 80 animals per day (Figure 1). In the early stage the chest and abdomen were hyperamic and the neck became swollen. *Salmonella ohio* and *Aeromonas hydrophila* were isolated from this farm.

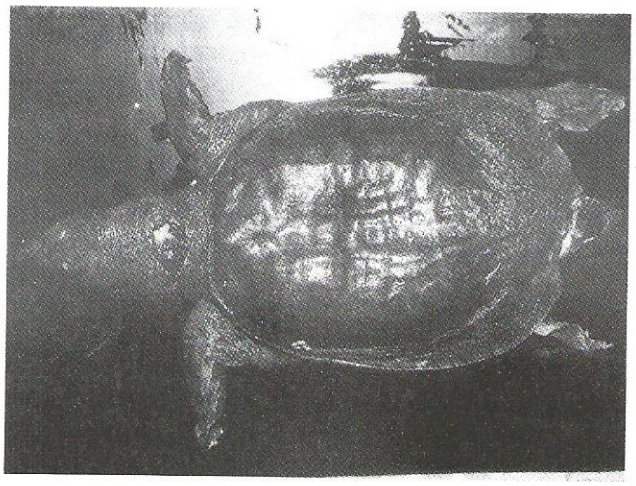

Figure 1. Turtle with swollen neck

At a later stage, ulceration and necrosis were observed on the shell, legs and neck (Figure 2). Mortality was about 100 animals per day at three other farms visited. *Edwardsiella tarda*, *Aeromonas hydrophila* and *E.coli* were isolated. Fungi were not isolated from any of the cases. *Salmonella spp.*, *Edwardsiella tarda* and *Aeromonas hydrophila* are amongst the common disease causing agents in the aquatic animals although *Aeromonas hydrophila* is considered an opportunistic organism (Ippen and Zwart, 1996 ; Arseculeratne and Yap, 1988).

The bacterial infections were easily treated with antibiotics given intra-muscularly. Disinfection of the ponds after every harvest was carried out to prevent further infection.

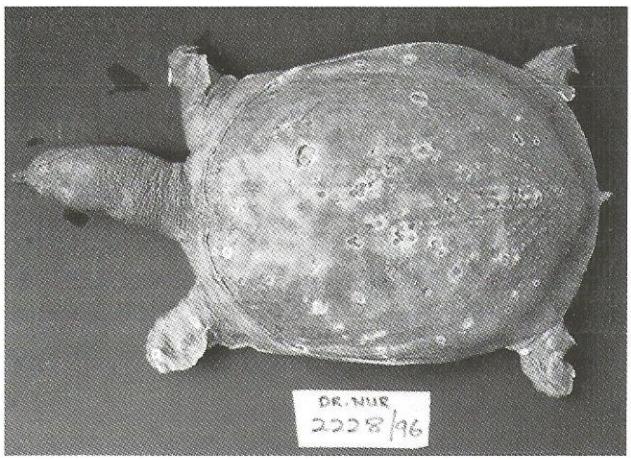

Figure 2. Ulcerations and necrosis on the shell

Cannibalism: Soft-shell turtles are known to be cannibalistic (Chen, 1990). Cannibalism produces wounds on the body leading to secondary bacterial infection. Sandy pond bottom can reduce the chances of cannibalism by enabling the animals to burrow into the sand for protection (Choo and Chou, 1984). Segregation according to size and sex during the grow-out period can be practised to reduce cannibalism. However, in all the farms visited no proper segregation was practised probably due to the extra cost of ponds.

Nutrition: Appropriate nutrition and feeding are important to cultured soft-shell turtle. Improper feeding can affect the growth and health of the turtles making them susceptible to diseases. In the farms visited several types of feed were given, for example, pelleted feed like frog and fish pellet were used in addition to mashed trash fish. According to Heng (1994) soft-shell turtles, being a carnivorous species, require a high protein (45-55%) and low fat diet. Hence trash fish is one of the most suitable feed for the soft-shell turtle. Besides this, they can also be fed with snails, silk worm pupae, shrimp, crab and clam and hatchlings can be fed tubifex worms, small fish and molluscs (Chen, 1990).

Water quality: In most of the farms visited the water in the pond contained high concentrations of ammonia and iron. The high ammonia content is due to the animals' excreta and the decomposition of organic matter by bacteria. Frequent change of the pond water will eliminate the problem.

In the farms visited, the ponds were constructed with concrete walls and layers of sand were laid on top of the soil at the bottom of the pond. Some soil contained acid sulphate which facilitates the release of iron (Ong, 1988). The high iron content could cause pH changes in water and interfere with the metabolic process of the animal (Abu Bakar and Hashim, 1980). This could be overcome by liming the soil at the bottom of the pond prior to stocking to reduce its acidity.

There is a great potential for soft-shell turtle culture in Malaysia. There is demand both for eggs and meat of the turtle locally and overseas. Improvement in disease control and management of soft shell turtle can enhance profitability.

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RINGKASAN

BEBERAPA MASALAH PENYU CANGKERANG LEMBUT KULTUR (Pelodiscina sinensis) DI SEMENANJUNG MALAYSIA

Beberapa masalah penyu cangkerang lembut kultur telah dibincang berasaskan kes yang diserah kepada Makmal Veterinar Serantau Bukit Tengah dan penyiasatan luar. Penyakit seperti leher bengkak dan pengulseran cangkerang diutarakan. Beberapa penyelesaian disarankan untuk mengatasi masalah tersebut.