

Identification and Confirmation by Koch's Postulate the Cause of Red Leg Syndrome in Captive Bullfrog (*Rana catesbeiana*)

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Abstract

American bullfrog (*Rana catesbeiana*) is currently raised world-wide for a variety of reasons. Frog farming in Malaysia was established more than 20 years ago to supply frog meat for the local non-Muslim community as well as for exportation. However, frog farming still remains as a minor aquatic industry in this country. Red leg syndrome is a common disease among the frog population and has been observed to be highly fatal. The present study was conducted to investigate the cause of red leg syndrome which commonly occurs in a farm in the state of Penang. Nineteen species of bacteria were isolated from 28 frogs showing typical clinical signs of red leg syndrome. To confirm Koch's postulate, the 19 pure isolates were inoculated in frogs. However, an attempt to reisolate the bacteria from the internal organs failed to show any bacterial growth. On the other hands, only four species of bacteria were reisolated from the frogs that did not show clinical signs. The current study provides baseline information on the causative agent of red leg syndrome and a reference to further studies for treatment, prevention and control to improve the industry.

Keywords: American bullfrog (*Rana catesbeiana*), red leg syndrome, Koch's postulate, bacteria