

2. Title: "Possible Role of Thiaminase in the Etiology of Beri-beri  
In Thailand"

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Objectives:

This study is designed to investigate The presence of the enzyme thiaminase in raw and fermented fish as generally consumed by the Thai population and the etiology of beri-beri in Thailand.

Progress:

It was observed from the epidemiological, clinical and biochemical studies of beri-beri that thiamine deficiency is still a nutritional problem in Thailand, even among the population of the Northeast (Ubol) where home-pounded rice is usually used. Since fresh and fermented fish is also commonly consumed by inhabitants in these areas, the presence of the enzyme thiaminase in this food and its possible role in the etiology of beri-beri are being investigated. Twenty samples of fermented fish, 3 samples of raw fish, 4 samples of shell fish and 10 samples of vegetables and greens were collected from six villages in Ubol province and five samples of fermented fish were obtained from fresh markets in the city of Chiangmai for the study.

Twelve samples of fermented fish from Ubol were randomly picked out from the 20 samples collected and assayed for thiaminase activity. Enzymatic activity was detected in every sample being assayed. The average activity was  $560.2 \pm 19.1$  units/gm. protein. The enzymatic activity was also observed in the 3 samples of fresh fish. The activity of the crude extract was found to be  $92 \pm 40.5$  units/gm protein. Of the four kinds of shell fish collected, two found to have an average activity of 112.5 units/gm protein. Low enzymatic activity was observed in one of the ten samples of vegetables collected (60 units/gm protein). Three samples of fermented fish from Chiangmai city were assayed and the average activity was found to be  $340 \pm 170.5$  units/gm protein.

Thiaminase enzyme is present in fresh and fermented fish as consumed by the population in the North and North-eastern part of Thailand. Further investigation is needed to clarify whether or not this enzyme plays role in the etiology of beri-beri.