

THESIS TITLE : EFFECT OF "PLA-SOM" ON *Opisthorchis viverrini*
METACERCARIAE

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Abstract

The effect of "Pla-som" on the infective stage (metacercariae) of *Opisthorchis viverrini* was studied in the laboratory to find out whether the parasite survives or not in this kind of food.

"Pla-som" is a kind of fermented fish commonly consumed in northeast Thailand and it may serve a potential source of *Opisthorchis viverrini* infection. It was found from the data obtaining by interviews using questionnaires that about 20.5% of the villagers still eat undercooked "Pla-som" fermented for 1-3 days. In this study, "Pla-som" was prepared with 2%, 4% and 6% of salt and was fermented at 30°C. At 12 hour-intervals, the fish was sampled to extract for the metacercariae of *Opisthorchis viverrini* to observe their activities.

It was found that the number of active larvae recovered decreased with increasing fermentation time and salt concentration. "Pla-som" with 2% , 4% and 6% of salt inhibited movement of the larvae within 60 , 48 and 48 hours and the parasite did not develop in hamster after the fish was fermented for 60 , 48 and 36 hours , respectively. The result showed that using the salt concentration between 2 - 6% , within 1 - 3 days of fermentation, some of the remaining parasites were still able to infect hamster. Fermentation with 2%, 4% and 6% of salt , the mean of active larvae decreased to 50% within 38 hours 48 minutes, 24 hours and 19 hours 46 minutes and the worm recovery decreased to 50% within 40 hours , 26 hours 24 minutes and 16 hours 12 minutes , respectively.

When the salt concentration of 2%, 4%, 6%, 8% and 10% were tested on *Opisthorchis viverrini* metacercariae, all of the larvae died within 32, 16, 8, 4 and 2 hours, respectively. The lactic acid at pH 3.80, 4.12, 4.50 and 4.99 were tested on *Opisthorchis viverrini* metacercariae, the movement of larvae slowly decreased, changed in morphology and degenerated. The movement of larvae at various pH mentioned above was not observed in 90, 96, 108 and 120 hours. The results suggested that salt was more effective in killing larvae than lactic acid.

The effect of fermentation of "Pla-som", salt and lactic acid on the morphological changes of the larvae were similar. The destruction of larvae consisted of granulation , vacuolization , bubble , contraction and degeneration. Some of metacercariae were also shrunken.