

Poster Abstracts

PO-46

HISTAMINE PRODUCTION IN PRESERVED SILKWORM PUPAE

S.Chomchai¹, N. Malainual², S. Bunman¹

¹ *Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*

² *Department of Parasitology, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*

Objectives: Silkworm pupae are by-products from silk production and are commonly consumed in silk-producing countries throughout East and Southeast Asia. Silkworm pupae have been reported to cause two outbreaks of histamine poisoning in Thailand. We investigate whether histamine is found naturally in silkworm pupae or histamine is produced during preservation of the pupae.

Methods: We euthanatized 120 live silkworm pupae (NangLai; J108x strain) and extracted them from the cocoons. Ten pupae were used in each of the 12 treatment groups. The 12 treatments consisted of 4 time lengths of tampering (0, 24, 48 and 72 hours) and 3 tampering temperatures (-20°C, 10°C and 25°C). Histamine concentrations in the extracts from the treatments were measured using competitive direct enzyme-linked immunosorbent assay (CD-ELISA, Neogen® Histamine Test Kit).

Results: The mean (standard deviations) mass of the silkworm pupae was 1.005(0.07) g. The average concentration of histamine concentration immediately post-euthanasia was 12.45 ng/g. Histamine concentrations at 72 hours for the -20°C, 10°C and 25°C groups were 12.7, 22.3 and 69.7 ng/g, respectively.

Conclusion: Silkworm pupae contain negligible amounts of histamine. However, histamine productions happen during preservation of silkworm pupae at chilling and room temperature.