

Sex Differentiation of Elm Nymphalid (*Nymphalis polychloros* Linnaeus, 1758) on Pupal Stage

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Abstract : This study was conducted to determine sex differentiation of laboratory reared Elm nymphalid (*Nymphalis polychloros* Linnaeus, 1758) by examining the morphological structure of pupal stage. Laboratory colony of elm nymphalid, reared on pear leaves, were used to set up experiments. It was performed with 5 replications having 8 pupae for each replication. Dorsal, ventral and lateral parts of external morphological structures of pupae were examined by Olympus SZX9 microscope and photographed. When fully grown, mature larvae wander the highest part of the rearing cage and pupae were formed hanging by cremaster. After completing prepupa stage about 1.5 ± 0.3 days, they all pupated. Pupal stage was completed at $25 \pm 1^\circ\text{C}$ about 4.38 ± 1.20 days. Pupal weights were 0.483 ± 0.05 g in females and 0.392 ± 0.08 g ($n=40$) in males respectively. Pupal emergence rate was 95%, with 22 females and 16 males. Examinations of ventral parts of 8th, 9th, and 10th abdominal segments revealed that anal opening were found at 10th abdominal segment in both sexes, 3 lumbs were determined at 9th abdominal segments then the specific opening structure at 8th segment was only found on female pupae.

Keywords : sex differentiation, *Nymphalis polychloros*, pupa, Linnaeus

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