

**POLLEN DIVERSITY AND TRACE ELEMENTS CONTENT OF
STINGLESS BEE *Tetragonula laeviceps* Smith, 1857 POLLEN
IN FACULTY OF BIOLOGY CAMPUS AREA UGM,
YOGYAKARTA**

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ABSTRACT

Tetragonula laeviceps are species of stingless bee that widely cultivated by beekeeper as non-timber forest product because of its usefulness as an alternative treatment. Bee colonies have a behavior called feed preference which is influenced by feed source location with the hive and the selected plant species. The feed preference can be known by identifying the collected pollen morphological characters. This study aimed to determine pollen diversity and trace the element content in pollen collected by *T. laeviceps* in Faculty of Biology Universitas Gadjah Mada, Yogyakarta. Pollen was collected from *T. laeviceps* hive then prepared using acetolysis method. Pollen was observed under light microscope and documented using Optilab, then processed by Image Raster. Pollen was collected again from *T. laeviceps* hive, prepared, and dehydrated using silica gel for 7 days until it becomes dry pollen, then analyzed using Scanning Electron Microscope (SEM) and X-Ray Fluorescence Spectrometry (XRF). Pollen diversity was identified by using APSA and PalDat. XRF data results were presented in graph form. The results showed that 7 plant families successfully identified with the most dominant amount is Myrtaceae, as much as 65%. Myrtaceae pollen morphology is monad; triangular; oblate; parasyncolpate, tricolporate; psilate; and small-sized. The element content that traced using XRF in pollen collected by *T. laeviceps* are P, K, and Ca.

Key words: *Tetragonula laeviceps*, bee pollen, pollen diversity, trace element