

I. INTRODUCTION

1.1 Background

Indonesia has 250,000 types of insects or about 15% of the identified main biota in Indonesia (Shahabuddin *et al.*, 2005). According to LaSalle and Gauld (1993), Hymenoptera is one of four largest orders of insects that have 80 families and more than 115,000 species. Vespidae family is one of the families of the Hymenoptera order.

Vespidae is a family of insects that includes over 4,600 valid species worldwide and can be found in more abundance in the tropical region, despite the wide distribution of some species (Carpenter & Marques, 2001). Species in this subfamily belong to three tribes, that is Mischocyttarini (*Mischocyttarus*, with 117 species), Polistini (*Polistes*, with 38 species), and Epiponini (20 genera, 164 species) and six subfamilies; *Stenogastrinae*, *Eumeninae*, *Eupragiinae*, *Masarinae*, *Polistinae* and *Vespinae*, which includes both social and solitary wasps. Most of these wasps are solitary but few of them are social (Carpenter, 2004).

Vespidae wasps are become predator on terrestrial insects. The masarines subfamilies have been shown to be pollinators. The Vespidae wasps in the other subfamilies, though they are predaceous, also visit various flowers for nectar as their own energy source and thus are, at least potentially, pollinators of many plants (Kojima, 1993).

Wasps build nests in forested areas and look for food in plantation areas, rice fields and agricultural land (Yamaguchi *et al.*, 2008). Food and environmental availability are important factors that determine the number of animal species in a

habitat (Triplehorn and Johnson 2004), these considerations suggest that the vespid wasps play important roles in an ecosystem, and thus they can be good bio-indicators for environmental conditions and/or habitat perturbation. Also, because of their predaceous habits, the vespid wasps have the potentiality to be effective biological control agents. Therefore, the diversity of wasps in a habitat is needed to be studied.

HPPB stand for Hutan Pendidikan dan Penelitian Biologi (Forest Education and Biological Research), a key area of biodiversity in Sumatra determined on "Key Biodiversity Area" (KBA) workshop held by Conservation International (CI) collaborate with Andalas University in January 2006. In addition, HPPB also has been used as one of the locations in biodiversity research since 1982 to the present (Rahman, 1994). HPPB is located in the area of Andalas University, Limau Manis which belongs to the lowland tropical rainforest, located at 250-460 altitude meters above sea level and has \pm 150 hectares' area (Tamin and Rahman, 1992).

The latest research about wasp diversity in Padang was done by Mardiwan (2014) at Nanggalo sub district that got 6 species with 56 individuals in palawija plant. Besides that, the research about wasp in Sunda Island was also done by Kojima *at al.*, (2004) in Sumba, Flores and Timor as included major islands that got 11 species of Ropalidia. Special research on Vespidae in Indonesia, especially around Andalas University has never been mentioned. Publications about Vespidae in Indonesia are still lacking and limited. This study needs to be done as a starting point to examine more deeply the diversity of Vespidae around Andalas University.

1.2 Formulation of the Problem

Based on the background detail above, the formulation of the problem in this research is what kind of species of wasps (Hymenoptera: Vespidae) in Andalas University, Limau Manis Padang?

1.3. Purpose of the Research

The purpose of this research was to determine the species of wasps (Hymenoptera: Vespidae) in Andalas University, Limau Manis Padang.

1.4 Significance of the Research

The results of this research is expected to be useful as information to determine the species of wasps (Hymenoptera: Vespidae) in Andalas University, Limau Manis Padang.

