



# A COMPARATIVE STUDY ON DIVERSITY OF WASPS IN DAKSHINA KANNADA AND KASARAGOD DISTRICTS, INDIA

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**Abstract:** Wasps are good bio-indicators and bio-controllers for environmental conditions. The present study was on the diversity of wasp fauna in various location of Dakshina Kannada district, Karnataka State and Kasaragod district, Kerala State. The wasp were collected by insect sweep net and hand picking method. Most of the species were appeared in the early morning from 6.00 am to 11.00 am and 3.00 pm to 6.00 pm. The present study on wasp in these two districts, 17 species of wasps belonging to seven families were identified. Of the total 17 species, 15 species were reported in Dakshina Kannada and 10 species were found in Kasaragod District. There is great seasonal variation in the wasp species. *Phimenes flavopticus*, *Sceliphron sps.* are found in monsoon. *Chalybion californicum*, *Evania appendigaster*, *Sphex ichneumoneus* are found in winter. *Ropalida brevita*, *Lipotriches sp.* *Sceliphron madraspatnum* found throughout the year.

**Key words:** Bio-indicator, Vespidae, Kasaragod, Seasonal, Sweep Net

## 1. INTRODUCTION

Insects have very distinct life histories and have a dramatic impact on the assessment of diversity. Wasp are flying stinging Arthropods present all over the world. As a group, wasps provide extraordinarily important ecological services, including pollination, predation and parasitism. They are good bio-indicators and bio-controllers for environmental conditions. Wasps are carnivorous in some stage, feeding on insects, worms, spiders, and so forth. Some wasps are omnivorous, feeding on a variety of fallen fruit, nectar and carrion. Over the past two decades many investigators recorded the decline in population of wasp species due to environmental problems like climate change, deforestation, fragmentation of natural and agriculture foraging habitats, pesticides and pollution. In order to formulate effective conservation strategies there is an urgent need to generate information regarding the diversity of certain wasp species. The present study was carried out to determine the diversity of wasp fauna in various location of Dakshina Kannada district, Karnataka State and Kasaragod district, Kerala State.

## 2. MATERIALS AND METHODS

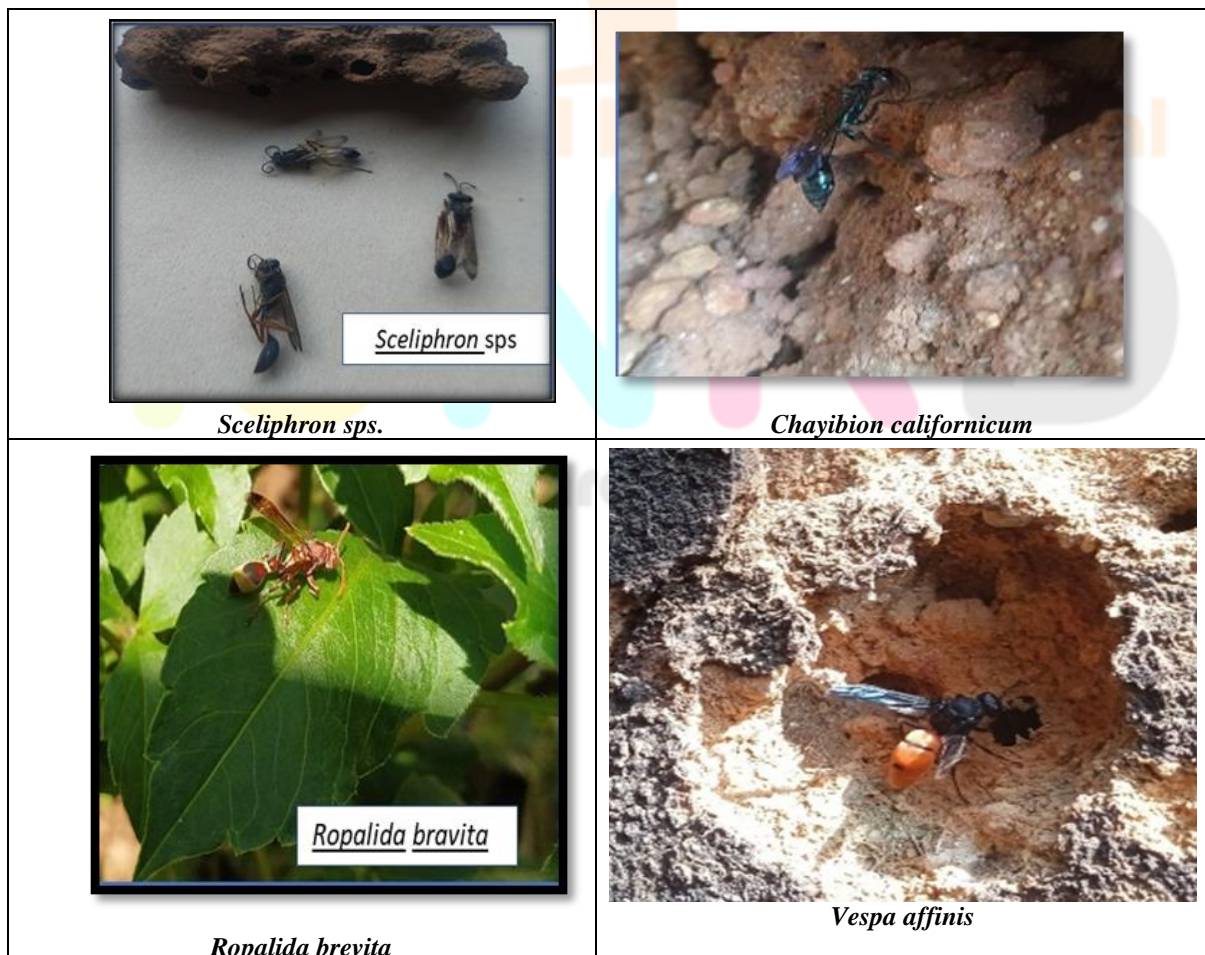
The study was carried out in the two districts, Dakshina Kannada of Karnataka State and Kasaragod District of Kerala State during July 2018 to March 2022. These two study areas are border district of Karnataka and Kerala State. The wasps were collected by insect sweep net and hand picking method. Most of the species were appeared in the early morning from 6.00 am to 11.00 am and evening 3.00 pm to 6.00 pm.

## 3. RESULTS

In the present study on these two districts, 17 species of wasps belonging to seven families were identified (Table 1). Out of 17 species, 15 species were reported in Dakshina Kannada and 10 species were found in Kasaragod District. There is a great seasonal variation in the wasp species. *Phimenes flavopticus*, *Sceliphron sps* are found in monsoon. *Chalybion californicum*, *Evania appendigaster*, *Sphex ichneumoneus* are found in winter. There are some species which are found throughout the year. *Ropalida brevita*, *Lipotriches sp.* *Sceliphron madraspatnum* found throughout the year.

Sl.No	Family	Species	Place	Season
1	Sphecidae	<i>Sceliphron spirifex</i>	Dakshina Kannada, Kasaragod	Monsoon
2		<i>Chayibion californicum</i>	Dakshina Kannada, Kasaragod	Winter
3		<i>Sphex ichneumoneus</i>	Dakshina Kannada, Kasaragod	Winter
4		<i>Sceliphron caementarium</i>	Dakshina Kannada	Monsoon
5		<i>Sceliphron madraspatnum</i>	Dakshina Kannada	All season
6	Vespidae	<i>Phimenes flavopictus</i>	Dakshina Kannada, Kasaragod	Monsoon
7		<i>Ropalida brevita</i>	Dakshina Kannada, Kasaragod	All season
8		<i>Vespa affinis</i>	Dakshina Kannada	Summer
9		<i>Vespa orientalis</i>	Dakshina Kannada	Summer
10		<i>Rhynchium brunneum</i>	Dakshina Kannada, Kasaragod	Summer
11		<i>Ropalidea marginata</i>	Dakshina Kannada	Monsoon
12		<i>Vespa tropica</i>	Dakshina Kannada, Kasaragod	Monsoon
13	Euminidae	<i>Delta pyriforme</i>	Dakshina Kannada	Summer
14	Evanidae	<i>Evania appendigaster</i>	Dakshina Kannada, Kasaragod	Winter
15	Pompiloidea	<i>Pompiloidea Sp.</i>	Dakshina Kannada	All season
16	Chrysididae	<i>Chrysididae Sp.</i>	Kasaragod	Summer
17	Halictide	<i>Lipotriches sp</i>	Kasaragod	All season

. Table 1: Check list of Wasps species identified





**Fig. 1 Wasps species observed during the study**

#### 4. DISCUSSION

Present study reveals a good number of wasp population at the survey sites of Dakshina Kannada. This might be correlated to the fact that, this region has good availability of diversified feeding habitat of rich vegetation supports wasp activities. They were abundantly seen during March, April and May and during winter season few species under go hibernation. The present study suggests similar research work on large scale to explore the wasp species left over in the study regions and its surrounded areas. Less diversification due to maximum anthropogenic disturbances may be reason for the absence of other few species of wasp in Kasaragod District. In fact, the species richness is positively correlated with the density and diversity of links within species, which can stabilize ecosystem services.

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