BIODIVERSITY OF ANTS (HYMENOPTERA: FORMICIDAE) BASED ON ELEVATION GRADIENT AT SAGO MALINTANG NATURE RESERVE, LIMA PULUH KOTA REGENCY, WEST SUMATRA

UNDERGRADUATE THESIS

BY

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ABSTRACT

The study of Ant Species Biodiversity (Hymenoptera: Formicidae) at Sago Malintang Natural Reserve, Lima Puluh Kota Regency, West Sumatra were conducted on September 2019-September 2021 to identify the species number and determine the diversity index at the study site, applied at different types of elevation gradient (0-1000, 1000-1500, 1500-2000 m.asl) used Standarized Quadra Protocol Methods. A total number of 41 species were collected belonged to five subfamilies, 10 tribes, 24 genera, and 1497 individuals. The largest number of individuals species level were *Carebara* cf. *affinis* at low elevation along with *Lophomyrmex bedoti*, at low and middle elevation, and *Pheidole quinata* at high elevation. There were several species collected all along the elevation, i.e *Nylanderia* sp. 1 of HH, *Pheidole* sp. 3 of HH, and *Ponera* sp. of HH. Myrmicinae became the major subfamily with most genera and species acquisition collected. About three new species were found, namely *Pheidole clypeocornis, Pheidole lokitae,* and *Phedole quinata*. The diversity index of each elevation was categorized as moderate (from low to high H' = 2,28; 1,76; 2,06). Evenness index was denoted as fairly even at low to middle elevation, (E = 0,70, 0,61) and nearly even at high elevation (E = 0,76). The percentage of Similarity Index was categorized as low percentage (QS = <50%). A various value of the species diversity was convinced from several factor such as temperature, humidity, vegetation, food resources, and the presences of human activity at the study site which may affected the diversity of ant species.

Keywords: Ants; Biodiversity; Elevation; Sago Malintang; Quadra Protocol

ABSTRAK

Penelitian mengenai Keanekaragaman Semut (Hymenoptera: Formicidae) pada Cagar Alam Sago Malintang, Kabupaten Lima Puluh Kota, Sumatera Barat telah dilaksanakan pada September 2019-September 2021 untuk mengetahui dan mengidentifikasi jumlah spesies yang didapatkan serta menentukan nilai indeks keanekaragaman pada kawasan penelitian berdasarkan gradien elevasi (0-1000, 1000-1500, 1500-2000 m.dpl) dengan metode *Quadra Protocol*. Didapatkan sebanyak 41 jenis semut yang tergolong ke dalam lima subfamili, 10 tribe, 24 genera, dan 1497 individu. Spesies dengan individu terbanyak adalah *Carebara* cf. *affinis*, ditemukan pada elevasi rendah dan *Lophomyrmex bedoti* yang ditemukan pada elevasi rendah dan sedang dan *Pheidole quinata* pada elevasi tinggi. Terdapat beberapa jenis semut yang ditemukan pada seluruh ketinggian, yaitu *Nylanderia* sp. 1 of HH, *Pheidole* sp. 3 of HH, dan *Ponera* sp. of HH. Myrmicinae tergolong sebagai subfamili terbanyak yang terkoleksi. Sebanyak tiga spesies ditemukan dalam penelitian ini yang belum ditemukan dari beberapa penelitian sebelumnya di Sumatera Barat: *Pheidole clypeocornis, Pheidole lokitae,* dan *Phedole quinata*. Nilai indeks keanekaragaman semut pada masing-masing gradien elevasi tergolong sedang (from low to high H’ = 2,28; 1,76; 2,06). Nilai Indeks Kemerataan dikategorikan ke dalam kategori cukup merata pada elevasi rendah dan sedang (E = 0,70, 0,61) dan hampir merata pada elevasi tinggi (E = 0,76). Nilai persentasi Indeks Similaritas tergolong rendah, ditandai dengan nilai Indeks QS = <50%. Perbedaan nilai keanekaragaman spesies didukung oleh beberapa faktor, seperti suhu, kelembapan, vegetasi, sumber pakan, dan aktivitas manusia yang mempengaruhi jumlah dan keanekaragaman semut pada lokasi ini.

Keywords: Elevasi; Keanekaragaman; Quadra Protocol; Sago Malintang; Semut