

KEANEKARAGAMAN DAN KEMELIMPAHAN AKARINA (CLASSIS ARACHNIDA: SUPERORDO ACARIFORMES DAN PARASITIFORMES) PADA *LICHEN* DI TAMAN NASIONAL GUNUNG MERAPI, SLEMAN, YOGYAKARTA

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INTISARI

Akarina (superordo Acariformes dan Parasiformes) memiliki tipe habitat beragam. Jenis habitat sangat memengaruhi akarina, salah satunya terhadap *feeding habit*. Akarina tertentu memiliki habitat spesifik terhadap *lichen* karena berkaitan erat dengan kemelimpahan, diversitas dan komposisinya. *Lichen* menyediakan habitat, proteksi dan sumber makanan. Walaupun telah banyak studi luar terkait asosiasi akarina dengan *lichen*, belum ditemukan studi serupa di Indonesia. Oleh karena itu, penelitian ini bertujuan mengetahui diversitas, kemelimpahan, peranan ekologis dan faktor-faktor apa saja yang memengaruhinya pada habitat *lichen* di Bukit Plawangan dan Tlogo Muncar, Taman Nasional Gunung Merapi Sleman, Yogyakarta. Pengambilan sampel dilakukan pada bulan September – Oktober 2024. Pengambilan sampel *lichen* arboreal menargetkan berbagai tipe substrat vegetasi. Metode pengambilan sampel adalah sampling jelajah dengan interval ketinggian 10 mdpl, serta pengukuran parameter lingkungan dan parameter vegetasi. Sampel akarina dari *lichen* yang telah diekstraksi selama 48 jam dengan corong Berlese-Tullgren diidentifikasi menggunakan buku *a Manual of Acarology*. Perbedaan komposisi diversitas dan kemelimpahan akarina antar lokasi dianalisis menggunakan *Non-Metric Distance Similarity*, serta analisis keanekaragaman, kekayaan dan pemerataan family. Analisis faktor-faktor yang memengaruhi diversitas dan kemelimpahan akarina dilakukan menggunakan plot korelasi Spearman dan *canonical correspondence analysis*. Terdapat perbedaan diversitas dan kemelimpahan yang nyata antara kedua lokasi. Bukit Plawangan memiliki diversitas dan kemelimpahan akarina tertinggi dibandingkan dengan Tlogo Muncar. Akarina yang ditemukan didominasi dari subordo Oribatida (family Gymnodamaedidae dan Haplozetidae) dan ordo Trombidiformes (family Cunaxidae dan Bdellidae). Peranan berdasarkan *feeding habit* akarina pada yang ditemukan meliputi predaseus, pemakan *lichen*, fitofagus, bakteriovora dan saprofagus. Faktor-faktor yang berkorelasi kuat terhadap diversitas dan kemelimpahan akarina meliputi korelasi positif terhadap *growth form lichen* selain *crustose*, diameter pohon setinggi dada dan keterbukaan kanopi, serta korelasi negatif terhadap *growth form lichen crustose*.

Kata kunci: Acaria, diversitas, *feeding habit*, kemelimpahan, *lichen*.

DIVERSITY AND ABUNDANCE OF ACARINA (CLASSIS ARACHNIDA: SUPERORDER ACARIFORMES AND PARASITIFORMES) ON LICHEN IN MOUNT MERAPI NATIONAL PARK, SLEMAN, YOGYAKARTA

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ABSTRACT

Acari (superorder Acariformes and Parasitiformes) has diverse habitat types. The habitat type is very impactful, specifically on its feeding habit. A certain acari has a specific type of habitat towards *lichen* due to its strong relationship within its abundance, diversity, and composition. *Lichen* provides a habitat, protection and food source. Though there are already many foreign studies related to the acari and *lichen* association, there is still no similar research in Indonesia. Hence, this research aims to understand the diversity, abundance, ecological functions and factors influenced of acarina within lichen habitat in Bukit Plawangan and Tlogo Muncar, Taman Nasional Gunung Merapi, Sleman, Yogyakarta. Sampling was carried out in September - October 2024. Arboreal *lichen* sampling targeted various types of vegetation substrates. Purposive systematic sampling with 10 mdpl intervals is used as well as environmental and vegetation parameters measurement. Acari samples from lichens are extracted for 48 hours with a Berlese-Tullgren funnel. Thereafter, it is identified using the book "A Manual of Acarology". Differences in the composition of acarina between locations were analyzed using Non-Metric Distance Similarity and diversity, richness and evenness analysis. Factors influencing the diversity and abundance analysis was performed using Spearman correspondence plots and canonical correlation analysis. There were significant differences between Bukit Plawangan and Tlogo Muncar. Bukit Plawangan had the highest diversity, abundance and evenness compared to Tlogo Muncar. The Acari's composition was dominated by the suborder Oribatida (family Gymnodamaedidae and Haplozetidae) and the order Trombidiformes (family Cunaxidae and Bdellidae). The ecological roles of acari in Bukit Plawangan and Tlogo Muncar included predaceous, lichen eaters, phytophagous, bacterivorous and saprophagous. Factors which are strongly correlated with the diversity and abundance of acari include the positive correspondence (others *lichen* growth form, diameter at breast height, and canopy openness) and the negative correlation (only crustose *lichen*).

Keywords: Abundance, acari, diversity, feeding habit, *lichen*