

ABSTRACT

Coffee is one of the crops that contribute to the country's economy through Indonesia's export activities, a problem that often occurs in coffee plant cultivation activities is the presence of weeds. This study aims to identify weed species, analyze dominance, diversity, similarity, and weed community coefficient in coffee plantation areas at altitude 1.000-1.200 masl, 800-1.000 masl, and 600-800 masl. This research was conducted in Marancar District, South Tapanuli Regency, North Sumatra Province and Chemistry Laboratory of Muhammadiyah University of South Tapanuli in January 2024. The method used in this research was descriptive method by analyzing descriptively for weed data and presented in tabular form. Weed sampling was carried out by purposive sampling with the quadrat method using observation plots measuring 1m x 1m with a total of 9 plots at each height so that there were 27 observation plots in total. The variables observed were weed dominance, diversity index, similarity index, community coefficient, ambient temperature, soil pH, soil moisture, and weed species. At an altitude of 1.000-1.200 masl, 800-1.000 masl, and 600-800 masl there were 18 families, 30 species, and 4,655 individual weeds. The dominant weed structure along with the SDR value obtained at an altitude of 1.000-1.200 masl was *A. conyzoides* 38,05, *M. hirtus* 19,26, *E. indica* 12,64, and *S. prostrata* 9,28. The altitude of 800-1.000 masl was *A. conyzoides* 28,07, *O. hirtellus* 25,38, *S. prostrata* 11,55, *S. remota* 8,27, and *D. sanguinalis* 6,22. The altitude of 600-800 masl was *C. prostrata* 30,83, *D. sanguinalis* 17,74, *A. conyzoides* 10,74, *H. capitata* 8,46, and *O. claytoniana* 8,05. Based on the results of the study, the diversity index value (H') of altitude 1.000-1.200 masl 1,14 (classified as medium), altitude 800-1.000 masl 1,65 (classified as medium), altitude 600-800 masl 1,63 (classified as medium). Similarity index value of altitude 1.000-1.200 masl and 800-1.000 masl 37% (classified as low), altitude 800-1.000 masl and 600-800 masl 39% (classified as low) and altitude 1.000-1.200 masl and 600-800 masl 23% (classified as very low). The community coefficient value of the three altitudes was 52,2%, meaning that weed control at each altitude was different. The evenness index value of altitude 1.000-1.200 masl 0,44 (classified as medium), altitude 800-1.000 masl 0,64 (classified as high), and altitude 600-800 masl 0,55 (classified as medium).

Key words: Altitude, coffee, diversity, dominance, weeds.