

Intisari

Penelitian ini bertujuan untuk mengetahui sebaran kandungan fraksi-fraksi silika pada lapisan permukaan dan bawah permukaan tanah di beberapa satuan topografi dari bukit Menoreh, Samigaluh, Kulon Progo. Titik pengambilan sampel tanah ditentukan berdasarkan satuan topografi dan kedalaman tanah yang berbeda. Setiap satuan topografi yang terdiri dari puncak, lereng atas, lereng tengah, lereng bawah, dan kaki lereng terdapat tiga kali ulangan dengan masing-masing titik diambil pada dua kedalaman yaitu 0-20 cm dan 20-40 cm, sehingga terdapat 30 titik sampel. Fraksi silika di dalam tanah dianalisis menggunakan metode ekstraksi silika berurutan, mulai dari fraksi Si terlarut (*mobile Si*), Si terjerap (*adsorbed Si*), Si organik (*organic Si*), dan *occluded Si*. Hasil penelitian menunjukkan bahwa secara umum kandungan fraksi silika dari yang tertinggi ke terendah yaitu fraksi Si terlarut (*mobile Si*) > fraksi *occluded Si* > fraksi Si organik (*organic Si*) > fraksi Si terjerap (*adsorbed Si*). Kandungan fraksi Si terlarut tertinggi berada di kaki lereng, fraksi *occluded Si* dan Si organik tertinggi berada di puncak lereng, serta fraksi Si terjerap tertinggi berada di lereng bawah, yang mana terdapat pada kedalaman 0-20 cm, kecuali fraksi Si organik yang terdapat pada kedalaman 20-40 cm. Faktor satuan topografi berpengaruh secara signifikan terhadap sebagian besar fraksi silika di dalam tanah, kecuali fraksi *occluded Si* yang dipengaruhi secara signifikan oleh interaksi antara faktor satuan topografi dan kedalaman tanah.

Kata kunci: silika, satuan topografi, kedalaman tanah

Abstract

This research aims to determine the distribution of silica fractions in the surface and sub surface layers of soil in several topographic units of Menoreh Hill, Samigaluh, Kulon Progo. Soil sampling points were determined based on different topographic units and soil depths. Each topographic unit, consisting of the peak, upper slope, middle slope, lower slope, and foot of the slope, had three replicates, with each point taken at two depths, 0-20 cm and 20-40 cm, resulting in 30 sampling points. The silica fraction in the soil was analyzed using sequential silica extraction methods, starting from the mobile Si fraction, adsorbed Si fraction, organic Si fraction, and occluded Si fraction. The results showed that, in general, the silica fraction content from highest to lowest was mobile Si > occluded Si > organic Si > adsorbed Si. The highest mobile Si fraction content was found at the foot of the slope, the highest occluded Si and organic Si fractions were found at the peak, and the highest adsorbed Si fraction was found at the bottom of the slope, which was at a depth of 0-20 cm, except for the organic Si fraction, which was found at a depth of 20-40 cm. Topographic unit factors significantly influence most silica fractions in the soil, except for the occluded Si fraction, which is significantly influenced by the interaction between topographic unit factors and soil depth.

Key words: silica, topographic unit, soil depth