

**CHARACTERISTICS OF THE CHEMICAL PROPERTIES OF SOIL
POST SOIL MINING FOR RAW MATERIAL FOR BRICKS AT
DIFFERENT TIMES IN SITIMULYO, BANTUL, YOGYAKARTA
SPECIAL REGION**

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ABSTRACT

Soil mining for brick industry raw materials can lead to land degradation and decreased soil fertility. This study aimed to identify and analyze the chemical characteristics of soils in post-mining land with different periods in Sitimulyo, Bantul, Special Region of Yogyakarta. Soil samples were collected using purposive sampling at a depth of 0–20 cm on non-mined land and on land 1 year, 5 years, and 7 years after mining activities. The analyzed parameters included pH, redox potential (Eh), organic carbon (C-organic), total nitrogen (N-total), available phosphorus (P-available), available potassium (K-available), cation exchange capacity (CEC), and exchangeable aluminum (Al-dd). The results showed differences in soil chemical characteristics based on the post-mining period. The 1-year post-mining land had the highest Eh (292 mV), the 5-year post-mining land had the highest CEC (6.433 me%), while the 7-year post-mining land had the highest pH (7.49), C-organic (1.450%), P-available (27.708 ppm), and K-available (1.276 me%). N-total was relatively high across all sites, while Al-dd was very low (0.006–0.01 me/100 g). These results indicate that soil mining affects soil chemical properties, and recovery efforts through organic matter addition and fertilization are required to optimize the reuse of the land for agricultural purposes.

Keywords: brick, post-mining, soil chemical properties, Sitimulyo