

RINGKASAN

Tersedianya kalium di dalam tanah dapat menjamin ketegaran tanaman, merangsang pertumbuhan akar, mencegah serangan hama dan penyakit, memperbaiki kualitas bulir, serta mengatasi kekurangan air. Kekurangan kalium dapat menyebabkan terhambatnya pertumbuhan, rendahnya kualitas dan hasil tanaman serta tanaman rentan terhadap hama dan penyakit. Penelitian ini bertujuan untuk: (1) mengetahui distribusi unsur hara kalium tanah di lahan sawah di wilayah Sub DAS Serayu Hilir Kecamatan Sampang, Kabupaten Cilacap, (2) mengetahui korelasi antara sebaran unsur hara kalium tanah dengan kadar kalium pada jaringan tanaman dan hasil padi sawah di wilayah Sub DAS Serayu Hilir Kecamatan Sampang, Kabupaten Cilacap, dan (3) menentukan rekomendasi pemberian dosis pupuk K di lahan sawah di wilayah Sub DAS Serayu Hilir Kecamatan Sampang Kabupaten Cilacap. Lahan sawah Kecamatan Sampang mendapat aliran air irigasi dari saluran irigasi primer Sungai Serayu.

Metode penelitian dilakukan dengan penentuan titik sampel sebanyak 9 diawali dengan pembuatan peta SLH (Satuan Lahan Homogen) berskala 1:50.000 dengan cara menggabungkan (*overlay*) Peta Administrasi, Peta Jenis Tanah, Peta Kelerengan, dan Peta Penggunaan Lahan. Pengambilan sampel tanah dilakukan secara komposit di setiap lokasi pengamatan. Pengambilan sampel tanah (*survei*) dilakukan pada masa vegetatif padi yaitu pada umur 45-50 hari. Sampel tanah diambil dengan melakukan pengeboran tanah pada kedalaman 0-25 cm dan 25-50 cm. Pengambilan sampel dilakukan sebanyak tiga titik secara acak dengan metode *zig-zag*. Variabel ukur yang digunakan yaitu pH H₂O, pH KCl, DHL (daya hantar listrik), potensial redoks, K-Tersedia, Kadar K, keadaan iklim, varietas tanaman, serta hasil tanaman padi gabah basah.

Hasil penelitian menunjukkan bahwa sebaran hara kalium di Kecamatan Sampang memiliki status rendah. Varietas tanaman padi yang dibudidayakan saat penelitian di Kecamatan Sampang terdiri atas Ciherang, HT Logawa, Inpari 32, dan IR64. Keadaan iklim di Kecamatan sampang termasuk iklim yang optimum untuk pertanaman padi. Hasil korelasi terbaik dengan hasil tanaman adalah antara K-Tersedia dengan hasil tanaman. Nilai K-tersedia memiliki koefisien determinan sebesar 47,37% terhadap hasil tanaman padi, sedangkan kadar K tanaman adalah sebesar 19,45% terhadap hasil tanaman padi. Rekomendasi pemupukan di lahan penelitian adalah 87,73 kg K₂O/ha atau setara dengan rata-rata 175,47 kg KCl/ha.

SUMMARY

The availability of potassium in the soil can ensuring plant vigor, stimulating root growth, preventing pests and diseases attack, improving grain quality, and overcoming water deficiency. Lack of potassium can cause stunted growth, low quality and crop yields and susceptibility to pests and diseases. This study aims to determine: (1) distribution of soil potassium nutrients in paddy fields in Serayu Watershed Downstream, Sampang District, Cilacap Regency, (2) distribution of soil potassium nutrient availability, K-content in plant tissue with rice yields in Serayu Watershed Downstream, Sampang District, Cilacap Regency, and 3) fertilizer recommendations potassium in paddy soil in Serayu Watershed Downstream, Sampang District, Cilacap Regency. The rice fields of Sampang District receive irrigation water from the Serayu River primary irrigation canal. The study method was conducted by determining 9 sample points by making of SLH (Homogeneous Land Unit) map with a scale of 1:50.000 by overlaying the Sampang District Administration Map, the Soil Type Map, the Slope Map, and the Land Use Map. Sampling of soil samples was carried out in composit way at each observation location. Soil sampling (survey) was carried out during the vegetative period of paddy which is at the age of 45-50 days. Soil samples were taken by drilling the soil at a depth of 0-25 cm and 25-50 cm. Drilling was done by taking three points randomly using the zigzag method. The variables mesured were pH H₂O, pH KCl, DHL (electrical conductivity), redox potential, K-available, K-content in plant tissue, climatic conditions, plant varieties, and wet grain rice yields.

The results showed that the distribution of potassium nutrients in Sampang District Low Land had a low status. The paddy varieties cultivated during research in Sampang District were consisted of Ciherang, HT Logawa, Inpari 32, and IR64. The climatic condition of Sampang District were in the optimal climates for paddy cultivation when there were evaluated. The best correlation result with crop yield was between K-available and crop yield. The value of K-available had a determinant coefficient of 47.37% of the yield of rice, while the K content in plant tissue had 19.45% of the yield of rice. The K fertilization recommendation in the research area is 87.73 kg K₂O/ha or equivalent to 175.47 kg KCl/ha.