

Kajian spasial kesehatan tanaman karet menggunakan citra multispektral Unmanned Aerial Vehicle (UAV) di perkebunan PTPN VIII Cibungur, Sukabumi, Jawa Barat = A spatial study of rubber plant health using multispectral images of Unmanned Aerial Vehicle (UAV) at PTPN VIII Cibungur Plantation, Sukabumi, West Java

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Abstrak

Tanaman karet menjadi komoditas perkebunan yang sangat penting di Kabupaten Sukabumi khususnya di perkebunan PTPN VIII Cibungur, karena hasil produk olahannya memiliki banyak manfaat dalam kehidupan masyarakat di sekitarnya. Maka perlu dilakukan adanya pemantauan mengenai kesehatan tanaman karet guna menjaga kualitas dan hasil produksi karet. Penelitian ini dilakukan untuk mengetahui persebaran kesehatan tanaman karet dan menganalisis hubungan kesehatan tanaman karet dengan menerapkan teknik penginderaan jauh. Teknik penginderaan jauh dalam penelitian ini menggunakan multispectral UAV. Analisis penelitian dilakukan dengan identifikasi kondisi tanaman menggunakan indeks vegetasi tanaman yaitu metode Normalized Difference Vegetation Index (NDVI). Data yang digunakan adalah data citra ortofoto NIR dan Red yang diperoleh dari perekaman langsung dengan menggunakan multispektral UAV. Didapatkan bahwa secara keseluruhan kesehatan tanaman karet di kawasan perkebunan karet PTPN VIII Cibungur didominasi oleh tingkat kesehatan baik dengan persentase sebesar 56%, tanaman yang memiliki tingkat kesehatan buruk hanya 3% dari total luas perkebunan karet. Hasil sebaran tanaman karet menunjukkan bahwa tanaman dengan kondisi sangat baik berada dibagian barat dan timur lokasi penelitian. Kesehatan tanaman karet dipengaruhi oleh beberapa faktor, seperti kondisi curah hujan, jenis tanah dan lereng.

.....Rubber plants are very important plantation commodities in Sukabumi Regency, especially in the PTPN VIII Cibungur plantation, because the processed products have many benefits in the lives of the surrounding community. So it is necessary to monitor the health of rubber plants in order to maintain the quality and yield of rubber production. This research was conducted to determine the distribution of rubber plant health and to analyze the relationship between rubber plant health by applying remote sensing techniques. The remote sensing technique in this study uses a multispectral UAV. Research analysis was carried out by identifying plant conditions using a plant vegetation index, namely the Normalized Difference Vegetation Index (NDVI) method. The data used are NIR and Red orthophoto image data obtained from direct recording using a multispectral UAV. It was found that the overall health of rubber plants in the rubber plantation area of PTPN VIII Cibungur was dominated by good health with a percentage of 56%, plants with poor health were only 3% of the total area of rubber plantations. The results of the distribution of rubber plants showed that plants with very good conditions were located in the western and eastern parts of the study site. The health of rubber plants is influenced by several factors, such as rainfall conditions, soil types and slopes.