

**ESTIMASI KANDUNGAN NITROGEN JARINGAN  
PADA TANAMAN KARET DENGAN  
METODE *NORMALIZED DIFFERENCE RED EDGE*  
DI PT PERKEBUNAN NUSANTARA IX KALIWRINGIN  
KABUPATEN KENDAL, JAWA TENGAH**

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**ABSTRAK**

Kandungan unsur nitrogen pada tanaman karet berpengaruh pada produksi lateks. Cara penentuan unsur nitrogen pada kebun karet di PT Perkebunan Nusantara IX Kaliwringin menggunakan metode *Leaf Sampling Unit* (LSU) yang dirasa kurang efektif digunakan pada area yang luas. Penelitian ini bertujuan untuk menggunakan metode *Normalized Difference Red Edge* sebagai penentu estimasi nitrogen jaringan pada tanaman karet dengan cara survei utama untuk pengambilan sampel daun menggunakan metode *random sampling*, yaitu penentuan titik sampel dilakukan secara acak di setiap petak kebun sebanyak 30 titik (20 titik regresi dan 10 titik acuan). Seluruh sampel dianalisis unsur nitrogen jaringan menggunakan metode *Kjeldahl*. Hubungan antara indeks vegetasi NDRE dengan nilai nitrogen jaringan diuji korelasi *Pearson Product Moment*, uji regresi, dan Uji-t dilakukan untuk menguji signifikansi antara model regresi dengan nilai nitrogen jaringan tanaman karet. Hasil penelitian menunjukkan bahwa NDRE berkorelasi kuat dengan nitrogen jaringan tanaman karet ( $r = 0,591$ ). Nilai koefisien determinasi atau  $R^2$  diperoleh sebesar 0,544 dengan persamaan regresi  $y = 0,4892x + 0,3166$ . Hasil uji-t nilai prediksi nitrogen jaringan tanam karet dengan nilai acuan nitrogen jaringan tanaman karet menunjukkan tidak beda nyata, artinya persamaan regresi dapat digunakan untuk estimasi nitrogen jaringan tanaman karet.

**Kata Kunci:** NDRE, nitrogen jaringan, uji korelasi, uji regresi, uji-T

**ESTIMATION OF NITROGEN CONTENT  
IN RUBBER PLANTS USING  
NORMALIZED DIFFERENCE RED EDGE METHOD  
IN PT PERKEBUNAN NUSANTARA IX KALIWRINGIN  
KENDAL REGENCY, CENTRAL JAVA**

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**ABSTRACT**

Nitrogen content in rubber plants affects latex production. The method of determining nitrogen content in rubber plantations at PT Perkebunan Nusantara IX Kaliwringin uses the Leaf Sampling Unit (LSU) method which is considered less effective in a large area. This study aims to use the Normalized Difference Red Edge method as a determinant of tissue nitrogen estimation in rubber plants using the main survey for leaf sampling using the random sampling method, which is the determination of sample points is carried out randomly in each garden plot as many as 30 points (20 regression points and 10 reference points). All samples were analyzed for nitrogen content elements using the Kjeldahl method. The correlation between the NDRE vegetation index and nitrogen content values was tested using Pearson Product Moment correlation, regression tests, and t-tests, which were carried out to test the significance of the regression model and the value of rubber plant nitrogen content. The results showed that NDRE was strongly correlated with rubber plant nitrogen content ( $r = 0.591$ ). The determination coefficient value or  $R^2$  was obtained at 0.544 with the regression equation  $y = 0.4892x + 0.3166$ . The results of the t-test of the predicted value of rubber plant nitrogen content with the reference value of rubber plant nitrogen content showed no significant difference, meaning that the regression equation can be used for estimation of nitrogen content.

**Keyword: NDRE, nitrogen content, correlation test, regression test, T-test**

