

CALCULATION OF THE NITROGEN DOSAGES AT 10 DAYS BEFORE FLOWERING BASED ON CHLOROPHYLL INDEX TO SOME CORN VARIETIES IN WINTER SEASON IN THAI NGUYEN

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Summary

An experiment including two corn varieties (LVN99 and LVN14) and 17 treatments with different N rates and timings was conducted in winter crops of 2011 and 2012 to develop a method for prescribing N rate applied at 10-day before heading of corn using chlorophyll meter index (SPAD). The results from the experiment shows that applied agronomic N use efficiency is dependent on N rate applied at both 8 or 9-leaf stage and 10-day before heading. Treatments without N application at 8 or 9-leaf stage have the highest agronomic N use efficiency ranging from 12.1 to 18.3 kg corn seed per kg N applied while the treatments with 75 kg N applied at 8 or 9-leaf stage have the lowest agronomic N use efficiency. Value of SPAD measured at 10-day before heading has high correlation with crop yield. Corn yield was predicted by SPAD value and N rate applied at 10-day before heading precisely and accurately by equation: $Y = -288.1007 + 17.52617 * CSDL + 1.144589 * N^3 - 0.2218583 * CSDL^2 - 0.001945353 * N^3 - 0.02703836 * CSDL * N$ with $R^2=0.92$. Using this equation, we may determine N rate when knowing SPAD at 10-day before heading to obtain target yield.

Keywords: *The chlorophyll, nitrogen, corn, Thai Nguyen, before flowering period of 10 days, winter season.*