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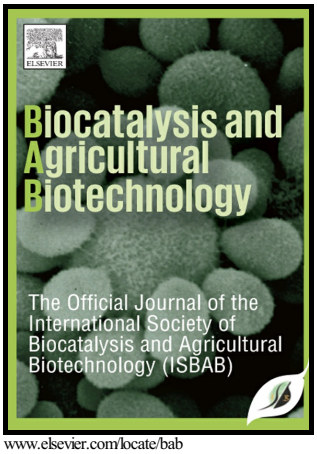

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PII: S1878-8181(17)30439-5
DOI: https://doi.org/10.1016/j.bcab.2018.06.011
Reference: BCAB784

To appear in: *Biocatalysis and Agricultural Biotechnology*

Received date: 22 August 2017
Revised date: 13 October 2017
Accepted date: 18 June 2018

Cite this article as: A. Soleymani and M. Miransari, Corn (*Zea mays* L.) yield and yield components as affected by light properties in response to plant parameters and N fertilization, *Biocatalysis and Agricultural Biotechnology,* https://doi.org/10.1016/j.bcab.2018.06.011

Corn (*Zea mays* L.) yield and yield components as affected by light properties in response to plant parameters and N fertilization

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Abstract

Light absorption and light extinction can importantly affect crop growth and yield production. Accordingly, two field (split plot) experiments were conducted to investigate: 1) the most optimum plant spacing (S) and density (D), which result in the highest rate of corn yield and yield components as affected by light absorption (L) and extinction (*K*), 2) the most efficient corn genotype (G) and the most optimum N fertilization rate (N), which effectively increase corn yield and yield components by affecting corn light properties. D and N were devoted to the main plots and S and G were used as the sub treatments. Light absorption was measured using a light meter and the coefficients of light extinction (*K*) were calculated. D, N and G as well as their interactions were the most effective factors on corn light properties, growth and yield. The crop density of 10-12 significantly affected corn growth and yield production. D12 resulted in the highest LAI (4.40), L (16.00%), and biological yields (20623.8 kg/ha). However, the highest *K* (0.79), grain yield (2398.8 kg/ha), and harvest index (14.36) were related to D6.