



## RESEARCH PAPER

# Response of different liming materials and phosphorus levels on soil properties and soybean yield on a dystrodept of Nagaland

L. Somendro Singh\* and P.K. Singh

Department of Agricultural Chemistry and Soil Science, School of Agricultural Sciences, Medziphema Campus,  
Nagaland University, Medziphema (Nagaland) India (Email : [lairensomen@gmail.com](mailto:lairensomen@gmail.com))

**Abstract :** A split plot design (SPD) with sixteen treatments and replicated thrice during the *Kharif* season of 2018 and 2019 was conducted to evaluate the response of different liming materials and levels of phosphorus on yield attributes, soil properties and yield of soybean [*Glycine max* (L.) Merr.]. Application of liming materials and P levels significantly increased pods plant<sup>-1</sup>, 100 seed weight, grain and stover yield. Interaction effects of different liming material and P levels were also significant for number of pods plant<sup>-1</sup>, stover and grain yield. The highest yield was recorded with an application of calcium silicate @ 0.4 LR along with 80 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>. The maximum uptake of N, P, K, S and Ca were found with CS @ 0.4 LR and 80 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>. Their interaction was significantly influenced in nutrients uptake by soybean. Application of liming materials of CS @ 0.4 LR increased with pH-5.41 from the initial pH 5.31. The highest OC % was found in the plots receiving CS @ 0.4 LR (1.17%) and 80 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup> (1.24%). The available N, P and exchangeable Ca<sup>2+</sup> and Mg<sup>2+</sup> in soil increased by application of different liming materials and phosphorus levels and their interaction.

**Key Words :** Dystrodept, Liming materials, Phosphorus, Soil properties, Soybean, Uptake, Yield

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