

Article title	Evaluation of Rape Response to Different Sources of Phosphate Rock in an Alkaline Soil
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Abstract	<p>A greenhouse experiment was conducted to evaluate the agronomic effectiveness of one unground, as received from Tunisia, and eight finely ground phosphate rock (PR) sources from Syria, Kazakhstan, Jordan, Russia, Mali, Burkina Faso, Tanzania, and China as compared with TSP for rape grown on an alkaline soil (pH 7.7). The P rates applied were 0, 5, 10, 25, and 50 mg P kg<sup>-1</sup>. The rape was grown to maturity. The yield of rapeseed obtained with each P source was fitted to a linear function with P rate. The relative agronomic effectiveness (RAE) of each PR with respect to TSP was calculated as the ratio of the slopes of the response function. The results show that RAE ranged from 0 to 88%, depending on the reactivity of PR. RAE correlated highly with the solubility of all PR sources as measured by 2% citric acid (CA) (<math>R^2=0.947</math>) in a semi-log function. When the unground, highly reactive PR was excluded in the correlation, <math>R^2</math> was increased to 0.957 with 2% CA. The correlation was also very high (<math>R^2=0.963</math>) when the RAE of the unground PR was plotted against its solubility measured in the finely ground form along with other finely ground PR sources. Low-reactivity PR with 2% CA-soluble P as low as 2.5% P can be 50% as effective as TSP in increasing yield of rapeseed even in alkaline soils. Use of indigenous PR sources, especially high reactive, for rapeseed production is feasible in those countries where agricultural soils are alkaline.</p>
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