Environmental Friendliness Fertilizer Recommendation: Phospor Callibration for Yard Long Bean Production in *Ultisol*

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The basic purpose of soil fertility evaluation is to provide information on the nutrient status of the soil and predict the relative response to added nutrient. The Crop Nutrient Requirement (CNR) value are those amounts of nutrients needed to produce optimum, economic yields from a fertilization standpoint. It is important to remember that these nutrient amounts are supplied to the crop from both soil and fertilizer. The amount are applied as fertilizer only when a properly calibrated soil test indicates very small extractable amounts of these nutrient to be present in the soil.

The nutrient status of cropped soils is variable continually changing due to the influence of fertilizer addition, nutrient losses by leaching or removal, and overall management. Site-specific estimates of the nutrient fertility status of soil are, therefore, very important to rational fertilizer use. Reliable site-specific information can only be accomplished through an orderly program of soil fertility evaluation in which proper attention is given to the following: 1) Techniques of soil sampling; 2) methods of soil analysis; 3) system for correlation of soil analysis and crop response; 4) model for interpretation of fertilizer response in field trials, and 5) procedure for preparing economically sound fertilizer recommendation. The objectives of this study is to built environmentally friendliness fertilizer recommendation base on soil analysis for vegetable production in *Ultisol* Jasinga. The Best Management Practices (BMP) for fertilizer recommendation base on soil analysis is not available for Indonesian vegetable farmer

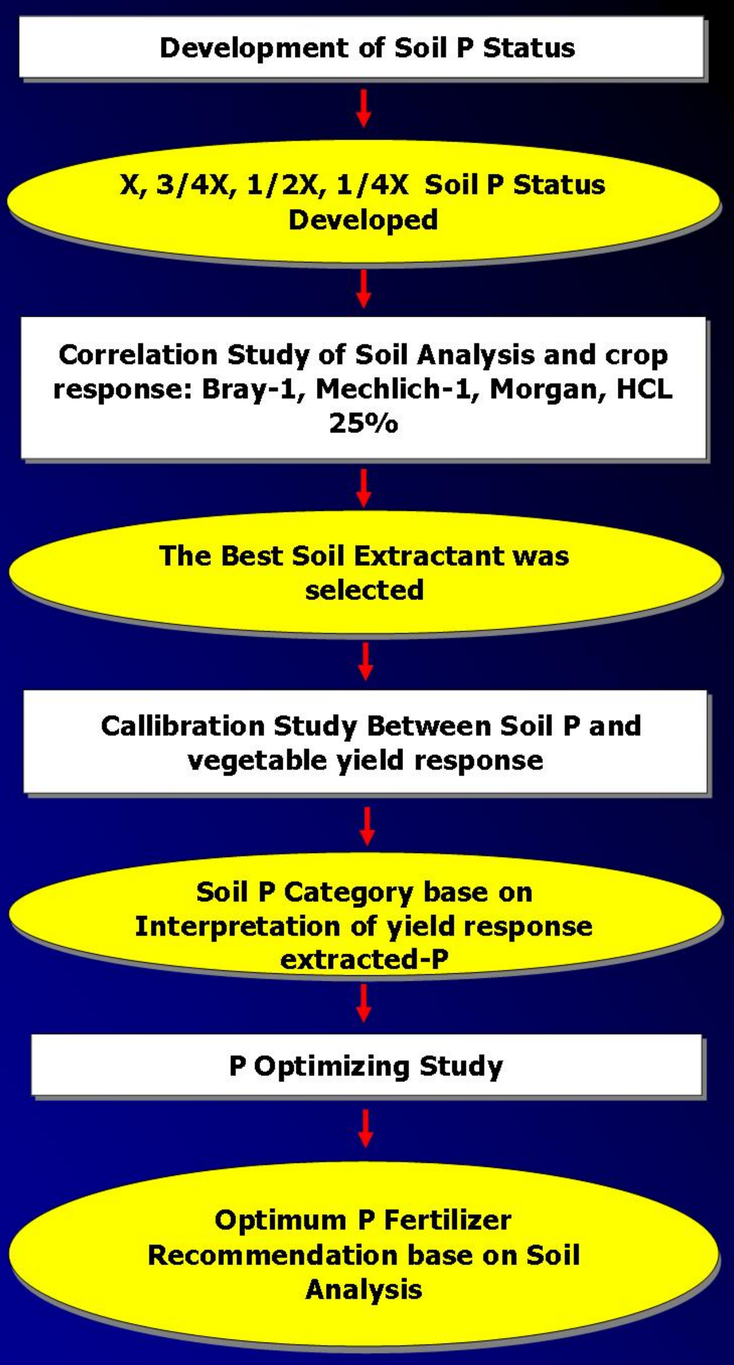

Figure 1. The Scheme of Fertilizer Recommendation Process Base on Soil Analysis

MATERIALS AND METHODS

The research was conducted at SANREM base camp in Hambaro Village, Nanggung, Bogor, Indonesia from December 2006 to December 2008. The research activities can be seen on Figure 1. The Correlation between extracted P and relative yield with several soil extractant presented in Figure 2, and Soil P category (Very Low, Low, Medium, High, and Very High) base on Crop response to soil extracted-P presented in Figure 3. Optimum fertilizer rate for each soil category will be determined. Cost analysis will be evaluated to built economically sound fertilizer recommendation.

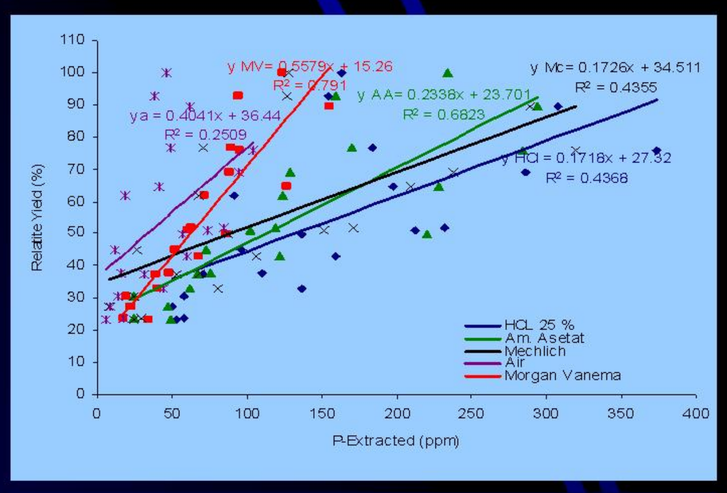

Figure 2. Correlation between extracted P and relative yield with several soil extractant

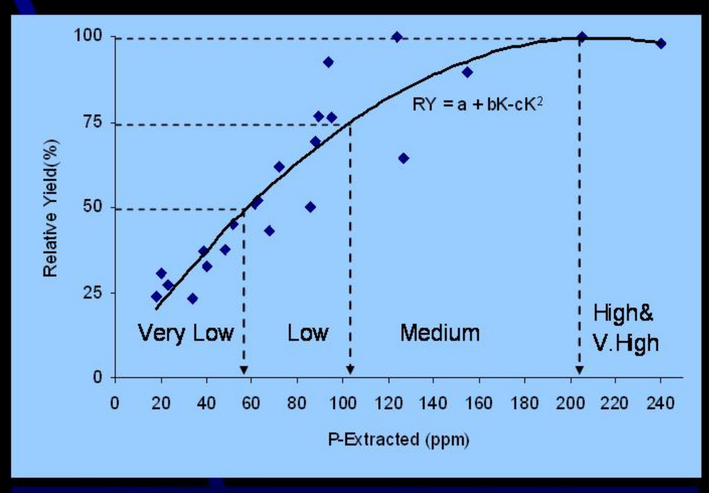

Figure 3. Soil P category (Very Low, Low, Medium, High, and Very High) base on Crop response to soil extracted-P

Table 1. Preplant Soil Analysis in Research Site, Hambaro Village, Nanggung, Bogor

Soil Character	Soil Index	Methods	Soil Character	Soil Index	Methods
pH H2O	5.20	pH meter	K (cmol/kg)	0.33	1 N NH_4Oac pH 7.0
pH KCl	4.10	pH meter	Na (cmol/kg)	0.07	1 N NH_4Oac pH 7.0
C-org (%)	1.70	Walkley and Black	KTK	27.98	1 N NH_4Oac pH 7.0
N-org (%)	0.21	Kjeldahl	Al (me/100 g)	1.14	1 N KCl
P Bray-1 (ppm)	10.8	Bray-1	H (me/100 g)	0.40	1 N KCl
K_2O Morgan (ppm)	167	Morgan	Tekstur :		
Ca (cmol/kg)	18.45	1 N NH_4Oac pH 7.0	Pasir (%)	10	Pipet
Mg (cmol/kg)	4.63	1 N NH_4Oac pH 7.0	Debu (%)	30	Pipet
			Liat (%)	60	Pipet

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