

# AVAILABLE P ENHANCEMENT IN ANDISOLS UNDER PASTURE AND ROCK PHOSPHATE AMENDED WITH POULTRY MANURE

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Poultry manure (PM) is a great nutrients source for plant growth. PM enhances soil properties and increases the crop yield. As an important strategy to decrease the amount of inorganic phosphorus (P) fertilizers, the combined use of rock phosphate (RP) with PM has been found to be more advantageous for sustainable agriculture than their single use.

The aim of this study was to assess the effect of PM on P availability in Andisols under pastures as well as in the dissolution of RP.



Poultry manure

## Incubation 1



Available P

## Incubation 2



Acid phosphatase activity

## Incubation 3



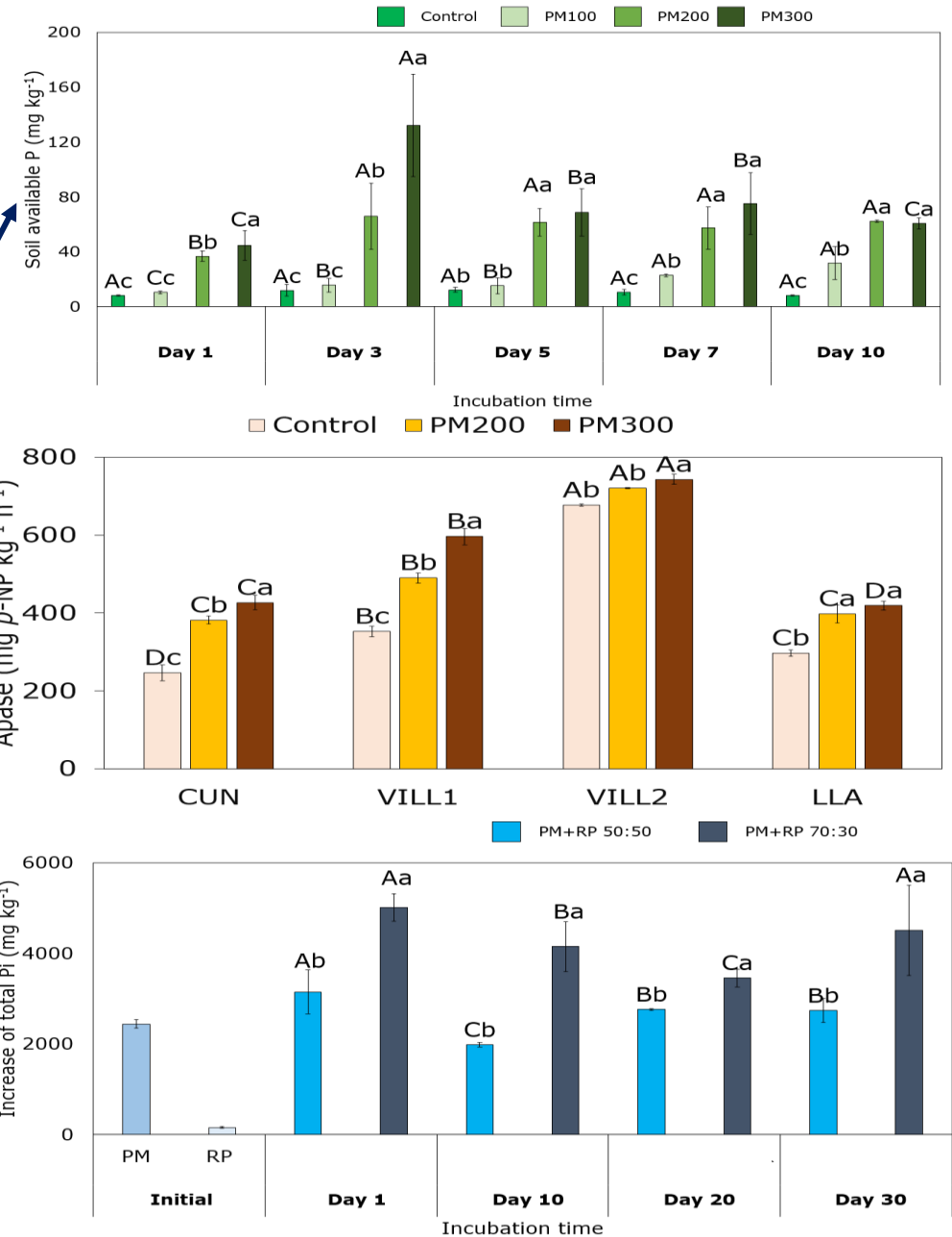
Total inorganic P

**Table 1. Selected properties of Poultry manure (A); Andisols (B); and rock phosphate (C).**

A)	Moisture %	pH (H <sub>2</sub> O)	Total OC	Total N (g kg <sup>-1</sup> )	Total P
Poultry manure	56.1	8.77	267.8	37.1	25.0

B) Soil	Soil order	Soil Family	Density (g cm <sup>-3</sup> )	pH (H <sub>2</sub> O)	Olsen P (mg kg <sup>-1</sup> )	Total OC (g kg <sup>-1</sup> )	Total N (g kg <sup>-1</sup> )
BAR	Andisol	<i>Typic Hapludand</i>	0.85	5.7	10.0	87.0	2.1
CUN	Andisol	<i>Acrudoxic Hapludand</i>	1.05	6.0	11.0	32.9	8.2
VILL1	Andisol	<i>Acrudoxic Fulvudands</i>	0.65	5.2	6.1	130.3	7.7
VILL2	Andisol	<i>Acrudoxic Fulvudands</i>	0.65	5.2	6.9	130.3	6.6
LLA	Andisol	<i>Typic Durudands</i>	0.84	6.1	2.8	82.7	5.3

C)	pH H <sub>2</sub> O	Total P g kg <sup>-1</sup>	CaO	MgO	CaCO <sub>3</sub> %	Reactivity
Rock phosphate	8.72	82.8	30	1.2	10	90



**Figure 1.** Poultry manure effect on available P (A) and acid phosphatase activity (B) in pasture Andisols as well as in the dissolution of rock phosphate (C).