



Research Article

## Effect of different levels and sources of phosphorus with and without pressmud and PSM on yield, quality and pod uprooting in groundnut crop

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**Abstract :** Field experiment was conducted at Navsari Agricultural University, Navsari (Gujarat) during summer seasons of 2002 and 2003 to study the effect of different levels and sources of phosphorus with and without pressmud and PSM (Phosphorus solubilising micro-organism) on yield, quality and pod uprooting. An application of 15 kg P from SSP+5t pressmud + 2.5 kg PSM ha<sup>-1</sup> producing highest pod, haulm yield and protein content. Whereas application of 10t pressmud results higher per cent pods lifted with plant<sup>-1</sup>.

**Key Words :** Groundnut, Phosphorus, Pod uprooting

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### INTRODUCTION

True to the same unpredictable legume it is difficult to decide the yield of groundnut. Harvesting method of groundnut crop is very much difficult on heavy soil than lighter type of soil. At the time of harvesting groundnut plant is uprooted, at that time all pods are not 100 per cent uprooted. This may be due to soil condition compaction, wet/dry condition of soil, plant type, depth of pod in soil and strength of peg (gynophores). Pods remain in soil after uprooting, this may leads to reduction in yield. Pod left in soil is very difficult to collect and very costly (not profitable). Soil compaction is one of the main reasons for pod remains in soil. To reduce this compaction organic matter (pressmud) is added in soil. Organic matter decreases bulk

density, decreases soil compaction, increases per cent pore, increases water holding capacity which is used full for crop growth and at the time of harvesting of groundnut crop. Thus, experiment was take to study how much per cent pods remaining in soil of groundnut crop under Vertisol soil south Gujarat conditions.

### EXPERIMENTAL METHODS

An experiment was laid out during summer seasons of 2002 and 2003 at University Farm, Navsari Agricultural University, Navsari. In this experimental plot, soil had organic carbon 3.9 g kg<sup>-1</sup>, available N 237 kg ha<sup>-1</sup>, available P 8.44 kg ha<sup>-1</sup> and available K 287.18 kg ha<sup>-1</sup> with pH of 8.0. Treatments were replicated three times in Randomized Block Design. Treatments were : T<sub>1</sub>-2.5 kg PSM ha<sup>-1</sup>, T<sub>2</sub>-5 t pressmud ha<sup>-1</sup> + 2.5 kg PSM ha<sup>-1</sup>, T<sub>3</sub>-10 t pressmud ha<sup>-1</sup> + 2.5 kg PSM ha<sup>-1</sup>, T<sub>4</sub>-15 kg P ha<sup>-1</sup> from DAP + 2.5 kg PSM ha<sup>-1</sup>, T<sub>5</sub>-15 kg P ha<sup>-1</sup> from SSP + 2.5 kg PSM ha<sup>-1</sup>, T<sub>6</sub>-30 kg P ha<sup>-1</sup> from DAP + 2.5 kg PSM ha<sup>-1</sup>, T<sub>7</sub>-30 kg P ha<sup>-1</sup> from SSP + 2.5 kg PSM ha<sup>-1</sup>, T<sub>8</sub>-15 kg P ha<sup>-1</sup> from DAP + 5 t pressmud + 2.5 kg PSM ha<sup>-1</sup>, T<sub>9</sub>-15 kg P ha<sup>-1</sup> from SSP + 5 t pressmud ha<sup>-1</sup> + 2.5 kg PSM ha<sup>-1</sup>, T<sub>10</sub>-

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