Journal of Agroecology and Natural Resource Management
p-ISSN: 2394-0786, e-ISSN: 2394-0794, Volume 4, Issue 4; July-September 2017, pp. 338-338

http://www.krishisanskriti.org

Integrated Nutrient Management: A Sustainable Practice for Potato Production in Gangetic Alluvial Zone of West Bengal

Shubhadip Dasgupta[1], Arindam Sarkar[2*] and Golam Moinuddin[2]

[1]Department of Agricultural Chemistry and Soil Science, Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Nadia, West Bengal-741252
[2]Regional Research Station, Bidhan Chandra Krishi Viswavidyalaya, Jhargram, Paschim Medinipur, West Bengal-721507
E-mail: [*]arin.psb@gmail.com

Abstract—*A field experiment was carried out to investigate the influence of Integrated Nutrient Management (INM) on nutrient uptake and potato yield (Solanum tuberosum L.) in the Gangetic alluviam belt of West Bengal. Different levels and combinations of organic (crop residue, farmyard manure and bio-fertilizer) and chemical fertilizers were tested. Plant samples were collected for nutrient other bio-chemical analysis. Plots receiving only organic manures reported least amount of nutrient uptake (36-44.6, 7.5-11.0 and 44.66-72.66 kg/ha for N, P and K respectively). The nutrient uptake was significantly higher when chemical fertilizer was applied. Maximum response was found (up-to 161, 221 and 354 % increment for N, P and K respectively compared to control) when different sources were combined together. Strong correlation has been found between nutrients uptake, tuber dry weight, specific gravity, ascorbic acid and reducing sugar content suggesting role of nutrients uptake on tuber yield and quality. With increasing nutrient uptake, up-to 80 % increment in tuber yield was found from these plots. We found that sole use of organics was not effective enough to supply nutrients. Thus, we strongly recommend the integration of organics with chemical fertilizers in this potato growing area better crop quality and yield.*

Keywords*: potato crop, crop nutrient uptake, integrated nutrient management, tuber quality, organic manure.*