

ASA-CSSA-SSSA Meeting Abstract
Participatory approach in soil testing and nutrient management in small-holder farms of Nepal

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Awareness of sustainable crop production technologies for high-quality food products and the healthy environment has been rapidly increasing in Nepal. A participatory approach to soil testing and nutrient management can provide an opportunity for smallholder farmers to learn about soil fertility status of their farm, and implement techniques for improving crop production and profitability. We established a participatory research in cereal crop-vegetable production systems in Chitwan, Nepal to estimate the soil fertility status, and demonstrate soil testing and integrated nutrient management practices. Soil fertility status of 67-farms was analyzed by using soil testing field kits, and farmers were trained on integrated nutrient management practices. Soil pH and EC were measured with a combo meter and nitrogen, phosphorus, and potassium (N-P-K) were analyzed by using the colorimetric technique. Results from the soil testing showed a range of soil pH and EC to be 5.7 to 8.04 and 0.06 to 1.31 dS/m, respectively. Status of N-P-K ranged from low to high. More importantly, farmers learned to evaluate soil fertility status of their farm, understood the value of periodic soil testing for sustainable crop and vegetable production, and gained knowledge of integrated nutrient management practices. This research revealed the need for farmer training on improved management practices for improving soil quality and agricultural sustainability in Chitwan, Nepal. The participatory approach in agricultural research could serve as a practical and cost effective tool for delivering improved management practices to smallholder farmers.

ASHS Poster Abstract

Soil Testing Survey and Soil Fertility Management Practices of Smallholder Farmers in Chitwan, Nepal

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Vegetable production is increasing rapidly as a cash crop in the Chitwan district of Nepal. Warm temperatures and access to water favor year-round production. Farmers are looking for improved soil fertility and pest management practices for assured production and profitability. A soil survey was conducted 1) to establish baseline data on soil fertility status and 2) to document farmer practices related to soil testing and knowledge of fertilizer and pesticide use. The survey was conducted on forty-six farmers' fields in April 2017 in collaboration with US Aid Horticulture Innovation Lab and Center for Agriculture Research and Development (CARD)-Nepal. Soil pH and EC were measured with a combo meter and nitrogen, phosphorus, and potassium (N-P-K) were analyzed by colorimetric tests. Questionnaires were administered to farmers to gather information about previous soil testing and management practices. Results from the soil survey showed range of soil pH and EC to be 5.7-8.04 and 0.06-1.31 mS/cm, respectively. Status of N-P-K ranged from low to high. Survey responses showed that farmers have never tested their soil before and have not ever received training in fertilizer use. Results found animal manure, compost, urea, and diammonium phosphate (DAP) to be the most common fertilizer inputs. Most farmers reported they have had received training in use of pesticides due to previous CARD-Nepal workshops. These findings indicate an apparent lack of soil testing facilities near Chitwan, Nepal and suggest a need for farmer training on best management practices for soil fertility and fertilizers.