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Cropping Pattern and Nutritional Status of Soils in Hyderabad District of Pakistan

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Abstract

Intensive cropping systems, improper use of fertilisers or no fertiliser application, unreliable and poor quality of irrigation water, have led to reduce soil fertility in the district Hyderabad (Pakistan). Arid climate in the region, low precipitation and high evapotranspiration, dictate the need for irrigation of crops using water either from canals or tube-wells. As there is to date no comprehensive overview about the nutrient status of those soils and yield constraints due to *e.g.* micronutrient deficiencies (especially zinc in the soils of the study region), a study was initiated to assess cropping patterns and soil properties and nutrient constraints in representative units of the area. The objective of the study is not only to prepare the detail spatial maps for the soil fertility of the region but also to link the status of fertility with agricultural practices. GIS mapping of the district area showing zones of different nutrient constraints will be presented. Soil samples were taken from 80 different locations at depths of 0–15, 15–30 and 30–45 cm. The soil samples were analysed for texture, electric conductivity, pH, total nitrogen, available phosphorous, potash and micro nutrients (Zn, Cu, Fe, Mn, and B). The nutrient status of the wheat crop is currently assessed as well by diagnosis and recommendation integrated system (DRIS) and critical level (CL) approaches to further identify the most limiting nutritional factors. Data regarding fertiliser application, cropping pattern, crop rotation and irrigation practices will be linked to farmer's practices and recommendations be made to improve nutrient supply and increase crop yields.

Keywords: Farmer's practices, nutritional status, Pakistan, soil fertility