Safer Choice of Summer Crop in Arsenic Endemic areas of West Bengal Delta

Sanchita Mondal, P. Bandopadhyay, R. Kundu and S. Pal

Department of Agronomy, Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Nadia, West Bengal 741235, India
E-mail: sanm04@gmail.com

Abstract—*Groundwater supported irrigation is one of the main reasons for arsenic contamination in crops. Summer rice does the maximum damages with its high water requirement when moisture recharge is at minimum. Further, it contributes to a further arsenic enriched rhizospehere which affects the crops grown beyond summer. Identification of the alternative options left with the farmer in summer for replacement of summer rice led to understanding the arsenic loading in the alternative crops along with their economics. A field experiment was conducted at farmer's field at Nonaghata-Uttarpara village under Haringhata block, Nadia district in summer (2009-10 and 2010-11) to asses arsenic contamination of summer crops (C_1: summer rice, C_2: green gram, C_3: jute and C_4: sesame) as well as the profitability in the search of a alternative to summer rice. Among the prevailing choice of summer crops with the farmer, arsenic uptake was minimum with green gram (C_2), followed by sesame (C_4) and jute (C_3). The maximum arsenic uptake recorded with summer rice that mostly contaminates the food chain. Rice equivalent yield was the highest with summer rice (C_1) followed by jute (C_3) and green gram (C_2). The highest return per rupee investment was recorded with green gram (C_2) followed by jute (C_3) and summer rice (C_1). From the experiment, it can be concluded that green gram (C_2) is the better option for the farmers in arsenic contaminated area with greater yield potential, highest return per rupee investment and less arsenic uptake.*

Keywords*: Arsenic, Summer, Rice, Green gram, Jute, Sesame*