THE ROLE OF SULFUR IN PRODUCTION OF QUALITY POTATOES

Noor A. Khan, Nawab Ali and Abdur Rab[1]

ABSTRACT

Nitrogen, phosphorous and sulfur (aluminum sulfate) were applied to study their effects on yield and quality of potato. The experiement was conducted at Lipton Tea Res Station, Khanpur (NWFP, Pakistan). Combined application of the three nutrient elements @ 123, 89 and 138 kg ha^{-1} significantly increased stems (4.55), leaves (105.70)/plant, plant height (70.33 cm) and canopy (90%) compared to 1.65 stems, 36.33 leaves and 2.58 tubers/plant in control. Plant height (38.33) and canopy (56.67%) were alos minimum in control. Total yield (15.43 t ha^{-1}) and proportion of large size tubers (66.44%) were obtained with nitrogen applied @ 185 kg ha^{-1} alone. Sulfur greatly reduced soil pH (5.40 to 5.82) compared to that (5.91 to 6.50) without sulfur application. Sulfur application through enhancing soil acidity, controlled potato scab whereas it ranged from 2.33 to 4 percent in the absence of sulfur. Similarly sulfur application increased tuber dry matter content ranging from 19.03 to 21.03 percent compared to tubers obtained from treatments where sulfur had not been applied. In those cases tuber dry matter ranged from 17.13 to 19 percent. Maximum tuber specific gravity (1.085) was recorded with 138 kg ha^{-1} sulfur applied alone compared to the minimum (1.053) in tubers from untreated plants. Maximum yield (15.43 t ha^{-1}), however, was obtained with nitrogen applied @ 185 kg ha^{-1} alone.