ABSTRACT
A field experiment was carried out to study the effect of sulphur, zinc and iron nutrition on growth, yield and nutrient uptake by safflower on Vertisol at the Main Agricultural Research Station, University of Agricultural Sciences, Dharwad, during Rabi season 2002-03. The results indicated that application of 30 kg S per ha showed superior growth parameters like plant height, number of leaves per plant, number of branches per plant and dry matter per plant, yield components like number of capsules, seed weight per head, 1000-seed weight and nutrient uptake of N, P, K, S, Zn and Fe as compared to other treatments. Combinations of sulphur along with micronutrients had significant influenced on the growth, yield and nutrient uptake by safflower. The treatment receiving 30 kg S per ha + Fe + Zn foliar recorded the highest growth, yield and nutrient uptake as compared to 30 kg S per ha, 20 kg S per ha + Fe, Zn foliar, 10 kg S per ha + Fe + Zn foliar spray and control.

Key words: Sulphur, Zinc, Iron, Safflower, *Carthamus tinctorius* L.