

Abstract

The main objective of the study was to evaluate the effect of Farm Yard Manure (FYM) and calcium ammonium nitrate (C.A.N) on vegetative growth, leaf yield, vitamins A and C as well as nitrates (anti-nutrients) content of vegetable amaranth in Lugari District. The effect of traditional method of cooking on the levels of these micronutrients and anti-nutrients was also evaluated. The incorporation of different concentrations of both FYM (10-20 tons/ha) and C.A.N (100-400 kg/ha) significantly improved the vegetative aspects and yield of the plant, during the rainy and dry seasons. The FYM and CAN, however, reduced b-carotene (vitamin A pre-cursor) content of the vegetable amaranth, with slightly higher accumulation during the rainy season than during the dry season. Application of different concentrations of FYM and CAN fertilizer as well as the plant age showed no clear trend on the vitamin C content in both seasons. However, there was a greater accumulation of nitrates, especially with age of the plants when FYM and CAN was applied. Cooking during both seasons reduced the beta-carotene, vitamin C and nitrates by up to 30%, 70%, and more than 50%, respectively. In summary, addition of FYM and CAN significantly increased the yield and quality of vegetable amaranth, but also increased the nitrate anti-nutrients while cooking significantly decreased the said attributes.