

ABSTRACT

Tuberose (*Polianthes tuberosa* L.) is a perennial summer flower grown by smallholders in Kenya for export. However, its production and export volumes have declined drastically due to nematode infestation. This study evaluated the effect of *Cleome gynandra* accessions on nematode management on tuberose. Experiment was conducted at the Horticulture Research Field, Egerton University, Kenya using a randomized complete block design with four replications. The treatments were: five accessions of *C. gynandra* namely 'Simlaw', 'Egerton', 'Taastrup', 'PS' and 'IP8', applied at 6 kg/m² and compared with *Brassica napus*, solarization and untreated control. Data was collected on growth and yield parameters, nematode infestation and quality of tuberose. Data collected was subjected to analysis of variance at $p \leq 0.05$ and means separated using Tukey's test. Biofumigation with *Cleome gynandra* accessions helped to reduce nematode population by 34%, gall numbers by 83% and galling index by 96% when compared with the control. Use of biofumigation helped to improve plant height and leaf number of tuberose by 16% and 87%, respectively, when compared with the control. Use of biofumigation helped to improve spike length by 32%, marketable spikes by 80%, and flower yield by 90% and reduced nonmarketable spikes by 95% when compared with the control. Based on the above results, use of *Cleome gynandra* accessions and other biofumigants such as rape seed can be used to manage nematodes and improve growth, yield and quality of tuberose.

Keywords: Nematode management; Biofumigation; Flower Growth; Flower