

ABSTRACT

The present investigation was focused evaluating various cultivars of Methi grown under temperate climatic conditions with three levels of Potassium nutrition. The study's main aim was to see and analyze the growth development, yield, and quality of Methi seed and leaves influenced by cultivars and Potassium levels and its impact on crop economics. Based on crop performance, a healthy snacks product i.e. Methi cooky, was developed to address the problems of rising diabetic disorders in the Indian population based on rural and artisan-specific available raw material.

A field experiment was conducted under temperate climatic conditions at Amrawati Orchards of Mukteshwar, Nanital, Uttarakhand during the Rabi season 2016-17 and 2017-18. The soil of the experimental field was sandy loamy in texture with organic carbon (2.88 %), low nitrogen and phosphorus, and moderate amount of potassium. The soil was acidic (pH 5.85) while the electrical conductivity (EC) was 0.364 dS/m. The experiment consisted of five varieties of Fenugreek (FGK-86, Kasuri Methi, Pant Ragini, Pusa Early Bunching (PEB), and FGK-91), and three levels of potassium (0, 20, and 30 kg/ha). These treatments were evaluated under a factorial randomized block design with three replications. The fenugreek variety Pant Ragini performed significantly better in respect of the number of branches per plant, fresh and dry weight of plant at harvest, number of pods per plant, length of the pod, number of seeds per pod, the weight of seeds per pod, 1000-seed weight, seed yield, biological yield, and harvest index. The application of 30 kg Potassium (K_2O) maximized growth and yield attributes, seed yield, biological yield, and harvest index significantly. The genotype Kasturi Methi with 30 kg Potassium (K_2O) gave a maximum gross return of (INR 142581/ha) per hectare, followed by Pant Ragini (INR 130755/ha) with 30 kg Potassium (K_2O). Under unfertilized conditions, the lowest gross value return of (INR 64505/ha) was fetched from FGK-86.

The maximum net return (INR 110541/ha) per hectare was obtained from Kasturi Methi with 30 kg Potassium followed by Pant Ragini (INR 99155/ha) with 30 kg Potassium and Kasturi Methi (INR 84055/ha) with 30 kg Potassium. The minimum (Rs. 33505/ha) net return was obtained from FGK-86 under unfertilized conditions during 2016-17 and 2017-18, respectively.

Higher cost benefits and returns were received in the case of Kasturi Methi even at lower productions due to the higher market prices of its green leaves due to its distinct flavour

The maximum B: C ratio of 3.45 and 3.84 was obtained from Kasturi Methi with 30 kg Potassium (K₂O) during 2016-17 and 2017-18, respectively. The second highest B: C ratio was received from Pant Ragini with 30 kg Potassium (K₂O) and minimum from FGK-86 under unfertilized conditions.

Cookies made from Methi leaves and seeds outperformed over standard check i.e., Britannia Nutri-Choice Essential, hence Methi cookies will potentially serve as alternative snacks for healthy and NIDDM patients.