ratio toward a higher proportion of female flowers hold considerable practical value. Pinching, or tipping, is one such technique, in which the apical meristem is removed to break apical dominance and stimulate the emergence of two or more lateral branches from the nodes below the pinch (Rajput et al., 2020). While first- and second-generation branches tend to produce a higher proportion of male flowers often creating a misleading impression of low productivity for farmers the third-generation branches induced by pinching typically bear a greater share of female flowers. Consequently, pinching offers a simple, low-cost method of enhancing female flower production without requiring chemical inputs.

Despite this physiological basis, farmers frequently lack clear guidance on the appropriate timing of pinching to maximize its benefits, and much of the existing literature emphasizes chemical growth regulators over accessible mechanical practices. This represents a notable research gap, particularly for resource-limited farmers who require low-input, easily adoptable techniques. Pinching, being simpler to execute than hormonal spraying, is well suited to farmers with limited technical knowledge. Therefore, the present study was undertaken to determine the optimal timing of pinching in cucumber and to evaluate its effect on sex expression and yield. It is hypothesized that timely pinching improves the proportion of female flowers and enhances yield compared to unpinched plants. Furthermore, this study aims to provide practical, evidence-based recommendations that farmers can readily adopt to improve cucumber productivity.

2 Materials and Methods

2.1 Selection of site

The experiment was conducted at Kawasoti municipality ward number 17 Nawalparasi East district. It lies in the vegetable zone under PMAMP-PIU Nawalparasi East. The study site lies 4.7 km south from Mahendra Highway of Danda. It lies at an elevation of 195 m above sea level, the latitude and longitude are 27.50 °N and 84.08 °E respectively. The research site lies in the Nepal Churia range. 56% of the area lies under the lower tropical zone. The maximum and minimum temperature of the site is 31.45 °C and 20.03 °C respectively.

2.2 Experimental materials and treatment applications

The used variety in the experiment was Kamini and seeds of cucumber were bought from nearby agro vet. The used fertilizers were also brought from nearby fertilizer distributor of Kawasoti municipality. Well-decomposed farmyard manure (FYM) was applied at 1,500 kg/ropani in the experimental plot. Similarly, chemical fertilizers were applied at 7-2-5 kg/ropani (Urea, DAP and Potash). Full doses of FYM, P_2O_5, and K_2O_5 and half doses of nitrogen were placed equally in the whole plots at the time of land preparation. The remaining dose of nitrogen was applied in two equal split doses, first at 20 DAT and second at the time of flowering.

2.3 Experimental design and data collection

The experiment was conducted in a Randomized complete block design (RCBD). There were a total of five treatments and each treatment was replicated four times. Therefore, the number of plots was twenty, and each plot contained sixteen plants in two rows, and eight plants were taken randomly as sample plants. The treatments applied were different levels of Pinching as Treatment 1: Control (No pinching), Treatment 2: Pinching at 15 DAT, Treatment 3: Pinching at 20 DAT, Treatment 4: Pinching at 25 DAT, Treatment 5: Pinching at 30 DAT. The experimental field consists of twenty plots with an individual plot size of 9 m^2. A spacing of 0.75 m×0.75 m was maintained between plant to plant and between rows. 50 cm spacing was maintained between plots in the same block and 50 cm between the blocks.

2.4 Data record and analysis

Eight plants per plot, excluding border plants, were taken as sample plants for study. Plant growth and yield characters were recorded. All the recorded data were arranged systematically in Microsoft Excel version 16.89.1. To determine the significance difference between treatments, analysis of variance was carried out using R studio version 4.4.1. Duncan's Multiple Range Test (DMRT) was used for mean separation at 5% level of significance. recorded and analyzed statistically by least significant difference test.