

## EFFECT OF SOWING TIME AND DIFFERENT LEVELS OF MACRONUTRIENTS (N, P & K) ON THE GROWTH AND YIELD OF BLACK CUMIN (*Nigella sativa* L.)

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### Executive Summary

The seeds of black cumin (*Nigella sativa* L.) have been widely used in the treatment of different diseases and ailments. In Islamic literature, it is considered as one of the greatest forms of healing medicine. It has been widely used as antihypertensive, liver tonics, digestive, antidiarrheal, appetite stimulant, antibacterial and in skin disorders. The time of seed sowing and plant nutrition one of the most important factors that increase plant growth and yield. Thus, the main objective of the present investigation was to study the effect of sowing time and different levels of macronutrients (N, P & K) on the growth and yield of black cumin. The experiment was conducted at the Farm of Sher-e-Bangla Agricultural University, Dhaka during October to March, 2019-20, using variety BARI Kalozira-1. The experiment was laid out in a two factor Randomized Complete Block Design, with three replications. Factor A consisted of four different sowing times like ( $T_1$  =mid-October,  $T_2$ = early November,  $T_3$  = mid-November,  $T_4$  = early December) and Factor B consisted of four levels of macronutrients combinations (0, 40, 80,120 kg ha<sup>-1</sup>, 0, 25, 50 ,75kg ha<sup>-1</sup> and 0, 20, 40, 60 Kg ha<sup>-1</sup> N-P-K, respectively). There were 16 treatments combinations such as  $T_1F_0$ ,  $T_1F_1$ ,  $T_1F_2$ ,  $T_1F_3$ ,  $T_2F_0$ ,  $T_2F_1$ ,  $T_2F_2$ ,  $T_2F_3$ ,  $T_3F_0$ ,  $T_3F_1$ ,  $T_3F_2$ ,  $T_3F_3$ ,  $T_4F_0$ ,  $T_4F_1$ ,  $T_4F_2$  and  $T_4F_3$  and altogether 48 plots. Different sowing time and macronutrients significantly influenced on most of the parameters. In case of sowing time, maximum number of secondary branches (15.44), capsules per plant (22.17), capsule length (1.32cm), seeds / capsule (87.50), seed yield (1.11 t/ha) and 1000 seed weight (3.01g) of black cumin were recorded from  $T_3$  treatment. In case of macronutrients level, the maximum plant height (49.54 cm), capsules/ plant (22.73), capsule length & diameter (1.34cm & 0.98cm), seeds per capsule (91.62), seed yield (1.14 t/ha) and 1000 seed weight (3.05g) were recorded from  $F_2$  treatment. Among the treatment combinations,  $T_3F_2$  treatment gave the highest seed yield (1.34 t/ha) and the lowest (0.51 t/ha) was obtained from  $T_1F_0$  treatment. So, the  $T_3F_2$  treatment combination appeared to be the best for achieving the higher growth and seed yield of black cumin.

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