



Research Paper

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Response of boron and lime application on growth and seed yield of snowball cauliflower (*Brassica oleracea* var. *botrytis* L.) cv. PSBK-1

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ABSTRACT : In order to study the effect of lime and boron in different combinations as soil, soil + foliar and foliar application on the growth dynamics and seed yield performance of snowball cauliflower PSBK-1, a field experiment was conducted during *Rabi* season of 2008-09 under rainfed mid hill condition of Uttarakhand. It was found that application of lime and borax as basal @ 500 kg/ha and 5.0 kg/ha followed by foliar spray of boron @ 0.25% at 40,60,80 DAT was the best treatment for maximum number of leaves per plant (16.13), number of primary branches per plant (12.53), seed yield per plant (28.31g) and seed yield per hectare (7.96q) whereas, application lime and borax as basal @ 500 kg/ha and 5.0 kg/ha followed by foliar spray of boron @ 0.50% at 40,60,80 DAT was second superior treatment for highest plant height (92.06 cm), siliqua per plant (1100.11), siliqua length (6.14cm), seeds per siliqua (20.34) and at par with seed yield per hectare (7.65q) in cauliflower cv. Pusa Snowball K-1 in rainfed mid hill conditions of Uttarakhand.

KEY WORDS : Cauliflower, Growth, Seed yield, Lime, Boron, Snowball

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Cauliflower (*Brassica oleracea* var. *botrytis* L.), a cool season vegetable belongs to the family Brassicaceae. Pusa Snowball K-1, a late variety is most popular among the growers of hilly regions, since it fetches a good premium both as a curd as well as a seed crop. Varietal sensitivity to fluctuating temperature and faulty management practices by the vegetable growers are some of the reasons for low productivity. The soil of mid hill region of Uttarakhand are generally clay loam in texture and acidic reaction with pH range of 5.40 to 6.20. Cauliflower is a very sensitive crop to both acidic soil and boron deficiency. It directly or indirectly affects the curd and seed yield of *Brassica* species. Boron plays an important role in flowering and fertilization processes (Saha *et al.*, 1999). Its deficiency leads to sterility in plants by malformation of reproductive tissues affecting pollen germination and ultimately resulting in reduced seed set. Similarly, lime application has also been observed to influence the seed yield of cauliflower. It increases the curd diameter,

weight and yield by improving the base saturation (Kotur, 1993). Due to high rainfall in mid hills, leaching of nutrients and micronutrients is a common incidence leading to frequent deficiency of the elements in soil. Therefore, it should be overcome to get sustained and increased production. In order to formulate the correct dose of boron and lime for getting higher growth and seed yield in small and scattered land holding of hilly area, the present investigation was undertaken.

RESEARCH METHODS

The present investigation was carried out at research block of Department of Vegetable Science, G.B. Pant University of Agriculture and Technology, Hill Campus, Ranichauri, Uttarakhand during the year 2008-09. Ranichauri is located at an elevation of about 2000 meters above mean sea level with 30018' N latitude and 78024' E longitude. It falls under mid-hills of Western Himalayas.

The experiment was laid out in Complete Randomized