

## Performance of seed spices - nigella (*Nigella sativa* L.)

S.M. Tripathi, A.K. Dwivedi and Sanjive Kumar Singh\*

Department of Horticulture

C.S. Azad University of Agriculture & Technology, Kanpur-208 002

### ABSTRACT

The Varietal improvement of nigella has been successfully conducted at Department of Vegetable Science, C.S. Azad University of Agriculture & Technology, Kalyanpur, Kanpur. As a first step, the germplasm collections have been screened for earliness, yield and other desirable traits and a line KN-9701 was observed highly promising on the basis of yield evaluation test is vis a vis of the lines and one standard check "Azad Kalaunji 1". On the basis of over all mean, it has given on yield of 9.06 q/ha which was per cent higher besides being 10 days earlier in maturity over check. This line has also performed better in yield and other ancillary traits in Eastern, Central and Western regions of the state. Farmers of U.P. are adopting this variety very quickly and seed demand is in increasing order.

**Key words :**

### INTRODUCTION

Nigella (*Nigella sativa* L.) in vernacular is known as Mangrail or Kalaunji. It is grown during winter season. The seeds are used in pickles, candies etc. and possess medicinal properties. The seed contain 1.5 to 4 per cent essential oil which is used in food, flavour and pharmaceutical industries. It has very low productivity which may be mainly due to poor quality of seeds. Being such an important seed spice, not much research work was done on its improvement with a view to develop early, high yielding and disease resistant varieties the research work on improvement of this crop was undertaken.

### MATERIALS AND METHODS

Germplasm collections of nigella maintained at vegetable Research Station, Kalyanpur are being regularly selfed to maintain purity for a number of years. On the basis of observation recorded on yield and other ancillary traits. Eight line viz, KN-9701, KN-9601, KN-9501, Azad Kalaunji-1, KN-9901, KN-9402, KN-9401, KN-9801 were found promising. During 1998-99 these lines along with one standard check were sown in unreplicated 5 row each and bulked. The bulk-seed of selected plants was sown during 1999-2000 and again promising plant selection were made. The cycle was repeated during repeated

during 2000-01 and 2001-02. Finally the bulked seed of these promising lines were procured for conducting yield evaluation trial. Thus a trial consisting of eight lines and check was sown in randomized block design with three replications which was conducted for two years from 2003-2004 at Department of Vegetable Research Station, Kalyanpur. Farmers of U.P. are adopting this variety very quickly and seed demand in increasing order.

### RESULTS AND DISCUSSION

The performance of eight selected lines from the collection of nigella revealed that line KN-9701 has given the maximum average seed yield of 9.06 q/ha which significantly higher than check yielding only 6.97 q/ha registering an increasing of 29.98 over a period of two years. It has also given highest seed yield of 8.57 q and 9.56 q per ha during 2002-2003 and 2003-04 respectively. Besides, it was 10 days earlier in seed maturity and produces bold seed which contribute to enhance the market value of the variety. This variety has profuse branching with high number of fruits per plant (40-50) and more seeds per fruit (60-80). The high seed return was achieved under 60 kg each of nitrogen and phosphorus per ha at a row spacing of 30 cm and seed rate of 8 kg per ha. On the basis of these results, the line KN-9701 was adopting among farmers for general cultivation.

**Table 1.** Salient features of variety KN-9701 and check variety

Character	KN-9701	Azad Kalaunji-1 (Check)
Days to flower	55-65	65-70
Plant height (cm)	60-70	65-70
Days to maturity	130-140	140-150
Number of primary branches	5-8	4-7
Number of branches per plant	35-45	30-40
Number of fruit per plant	40-50	30-40
Number of seed per fruit	60-80	40-75
Average yield (q/ha)	9-10	7-8

**Table 2.** The performance of variety KN-9701 at Kalyanpur during 2002-03 to 2003-04 yield q/ha

S. No.	Variety	2002-03	2003-04	Average	% increase
1.	KN-9701	8.57	9.56	9.06	29.98
2.	KN-9601	8.22	9.24	8.73	25.25
3.	KN-9501	6.65	8.00	7.32	5.02
4.	Azad Kalaunji-1 (Check)	7.33	6.62	6.97	-
5.	KN-9901	5.19	7.66	6.39	(-) 8.32
6.	KN-9402	6.88	5.56	6.22	-
7.	KN-9401	5.73	6.40	6.06	-
8.	KN-9801	5.02	5.42	5.22	-
	CD at 5%	2.42	2.29	-	
	CV%	14.88	12.92	-	

## REFERENCES

1. J.P., Srivastava and S.M., Tripathi 2000. Breeding of seed spices-nigella (*Nigella sativa* L.). Proceeding of central Conference on Species and aromatic Plants, 20-23 September 2000 pp. 84-85.
2. Malhotra, S.K. 2004. Nigella. In Hand book of Herbs and Spices Ed. K.V. Peter woodhead publishing Ltd., Cambridge, England pp. 206-214.
3. S.M., Tripathi and J.P. Srivastava 2004. Mashalo vividh fashaloo ki unnatsheel prajaita evam beegopadan technique. Proceeding of Integrated Spices development Farmers Training pp. 1-8.

Received : Feb. 2012; Revised : April 2012;  
Accepted : May 2012.