

## PERFORMANCE OF DIFFERENT VARIETIES AND PLANTING DATE ON GROWTH OF KNOLKHOL (*BRASSICA OLERACEA* VAR. GONGYLODES)

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### ABSTRACT

An experiment was carried out at the Horticulture instructional Farm of Sardarkrushinagar Dantiwad Agriculture University, S. K. Nagar during the period from *rabi* season of the year 2014-15 to determine the growth of knol khol as influenced by different planting date and varieties. The study was conducted with three planting date *viz.*, 1<sup>st</sup> November, 15<sup>th</sup> November and 1<sup>st</sup> December at four varieties *viz.*, White Vienna (V<sub>1</sub>) Palam Tender Knob (V<sub>2</sub>) Early White Vienna (V<sub>3</sub>) and Purple Vienna(V<sub>4</sub>), Among the planting date. 15<sup>th</sup> November planting significantly increased plant height, plant spread, East-West and North-South and leaf area found with variety Purple Vienna (V<sub>4</sub>).

**KEYWORDS:** Performance, Knol Khol, Planting Date, Varieties, Growth

### INTRODUCTION

Knolkhol or Kholrabi (*Brassica oleracea* var. *gongylodes*) family Brassicaceae and its known by many names in India. It is popular in Kashmir, West Bengal, Maharashtra, Assam, Uttar Pradesh, Punjab and some parts of South India. Formation of knob (tuber) which arises from a thickening of the stem tissue above the cotyledons. The fleshy edible proration is an enlargement of the stem, which develops entirely above ground and is used as a vegetable. Though the agro climatic conditions of North Gujarat is quite favorable and there is tremendous potential for taking up commercial cultivation of this crop during *rabi* season. The present paper gives the information about the planting date and varieties for obtaining higher growth.

### MATERIALS AND METHODS

The experiment was conducted at Horticulture Instructional Farm, Department of Horticulture, C. P. College of Agriculture, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar, Dist. Banaskantha, Gujarat, during the *rabi* season of the year 2014-15 in split plot design with three planting date *viz.* 1<sup>st</sup> November, 15<sup>th</sup> November and 15<sup>th</sup> December as main plot treatments and four varieties *viz.*, White Vienna (V<sub>1</sub>) Palam Tender Knob (V<sub>2</sub>) Early White Vienna (V<sub>3</sub>) and Purple Vienna (V<sub>4</sub>) as sub plot treatments which were replicated thrice. Seeds of White Vienna were obtained from IARI Regional Station Katrain, Kullu Valley-175129, Himachal Pradesh, Palam Tender Knob obtained from CSK Himachal Pradesh Agricultural University, Palampur (Himachal Pradesh), whereas Early White Vienna and Purple Vienna obtained from SKUAST, Sher-e-Kashmir University of Agricultural Sciences and Technology (Jammu.& Kashmir). All the recommended package of practices was followed to raise a good crop. five competitive plants were through in each net plot per replication and the observations were recorded on various growth parameters on these plants. The data was

statistically analyzed using analysis of variance according to the method described by Panse and Sukhatme (1978).

## RESULTS AND DISCUSSIONS

It is understood from appendices in Table 1 and figure 1 to 3 that vegetable growth of knolkhol was significantly influenced by the planting date exact stem girth. Significantly highest plant height, maximum spread East-West, maximum spread North-South and largest leaf area per plant was obtained from 15<sup>th</sup> November planting (26.42 cm, 37.57 cm, 35.98 cm and 264.27 cm<sup>2</sup>) where as lowest plant height, minimum plant spread east-west and north-south and smallest leaf area found with 1<sup>st</sup> November planting (23.14 cm, 31.42 cm, 32.40 cm and 231.64 cm<sup>2</sup>, respectively) Effect of different varieties on vegetative growth was found non significant for all characters under study except stem girth maximum stem girth was recorded with Purple Vienna (v<sub>4</sub>). 11.97 cm whereas minimum stem girth recoded with Early White Vienna (v<sub>2</sub>) 11.05 cm maximum scoring performance is better in Purple Vienna variety as compare to other varieties. The increase in number of leaves, leaf area, plant height and plant spread in 15<sup>th</sup> November planting due to favorable environmental conditions prevailed during initial growth of crop Present results are in close accordance to the finding of Ahmed *et al.* (2004), Ara *et al.* (2009), Singh (2010), Hossain *et al.* (2011), Uddain *et al.*, (2012) and Yadav *et al.* (2013) in cabbage and Cebula *et al.* (1996), Ozbakir *et al.* (2009) and Hossain *et al.* (2012) in knolkhol.

In light of the results obtained from present investigation, the results leads to the conclusion that planting date of 15<sup>th</sup> November and variety Purple Vienna achieved higher growth parameters of knoll khol under North Gujarat Agro-climatic condition.

## REFERENCES

1. Ahmed, M. J. and Siddique, W. (2004). Effect of sowing dates on growth and yield of broccoli (*Brassica oleracea* L.). *Asian Journal of plant Science* **3**(2): 167-169.
2. Ara, N.; Kaisar, M. O., Khalequzzaman, K. M., Kohinoor, H. and Ahamed, K. U. (2009). Effect of different dates of planting and lines on the growth, yield and yield contributing characteristics of cauliflower. *Journal Soil Nature*, **3**(1):16-19.
3. Cebula, S.; Kunicki, E. and Libik, A. (1996). The effect of cultivar and planting date on the yield and quality of white cabbage grown in submontane regions. *Acta Horticulture* **407**, 369-372.
4. Hossain, M. F.; Ara, N., Uddin, M. R., Dey, S. and Islam, M. R. (2011). Effect of time of sowing and plant spacing on broccoli production. *Tropical agriculture Research & extension*, **14**(4), 90-92.
5. Ozbakir, M. and Balkaya, A. (2009). Determining suitable sowing times and cultivars for kohlrabi (*Brassica oleracea* var. gongylodes L.) grown during autumn periods Samsun, Turkey. *Acta Horticulture* **830**:461-465.
6. Singh, B. K.; Pathak, K. A., Sarma, K. A. and Thapa, M. (2010). Effect of transplanting dates on plant growth, yield and quality traits of cabbage (*Brassica oleracea* var. capitata L.) cultivars. *Indian Journal of Hill Farming* **23**(2):1-5.
7. Yadav, M.; Prasad, V. M. and Ahirwar, C. S. (2013). Varietal evaluation of cauliflower (*Brassica oleracea* var. botrytis L.) In Allahabad agro-climate condition. *Trends in biological science* **6**(1): 99-100.

APPENDICES

Table 1: Effect of Planting Date and Varieties on Growth Characters

Treatments	Plant Height (Cm)	Plant Spread (E-W) (Cm)	Plant Spread (N-S) (Cm)	Leaf Area (Cm <sup>2</sup> )	Stem Girth (Cm)
<b>Planting Dates (D)</b>					
1 <sup>st</sup> Nov. (d <sub>1</sub> )	23.34	31.42	32.40	231.64	11.61
15 <sup>th</sup> Nov. (d <sub>2</sub> )	26.42	37.57	35.98	264.27	11.30
1 <sup>st</sup> Dec.(d <sub>3</sub> )	23.14	34.70	33.83	247.85	11.37
S.Em ±	0.6	0.8	0.6	4.9	0.2
C.D. (at 5 % level)	2.4	2.5	3.2	19.3	NS
C.V. %	8.6	8.1	6.5	6.9	6.1
<b>Varieties (V)</b>					
White Vienna (v <sub>1</sub> )	23.77	35.03	34.53	247.12	11.51
Early White Vienna (v <sub>2</sub> )	23.70	34.78	34.72	244.32	11.05
Palam Tender Knob (v <sub>3</sub> )	23.87	33.89	33.04	249.26	11.17
Purple Vienna (v <sub>4</sub> )	25.85	34.55	33.98	250.96	11.97
S.Em ±	0.6	0.6	0.5	5.5	0.2
C.D. (at 5 % level)	NS	NS	NS	NS	0.6
<b>Interaction</b>					
C.D. (at 5 % level)	NS	NS	NS	NS	NS
C.V. %	7.8	5.2	4.5	6.6	5.2

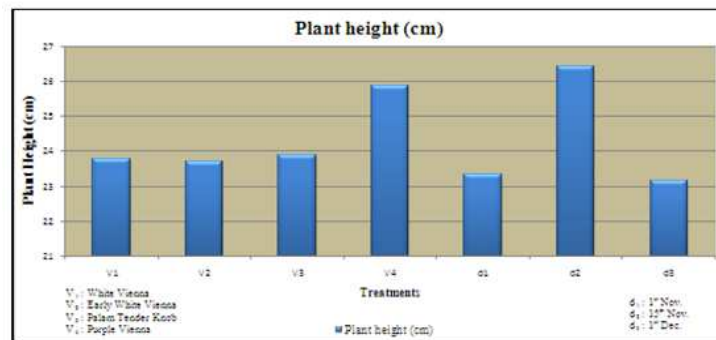


Figure 1: Effect of Different Planting Dates and Varieties on Plant Height (Cm)

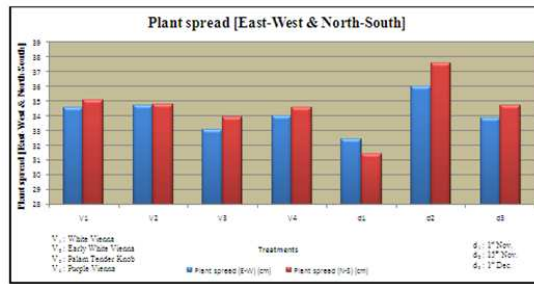


Figure 2: Effect of Different Planting Dates and Varieties on Plant Spread (East West & North South)

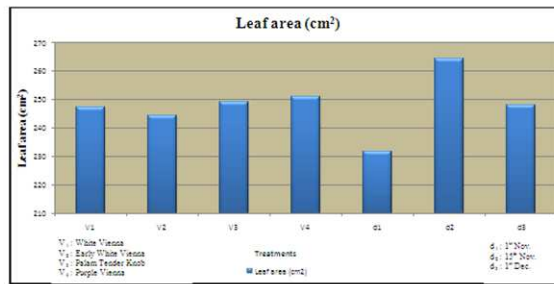


Figure 3: Effect of Different Planting Dates and Varieties on Leaf Area (Cm<sup>2</sup>)