



## **Influence Of Dates Of Transplanting On Growth, Yield And Quality Of Onion (*Allium cepa* L.)**

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### **ABSTRACT**

The field experiment was conducted at Horticulture Instructional Farm, C. P. College of Agriculture, S. D. Agricultural University, Sardarkrushinagar during the year 2010-2011 to study the effect of dates of transplanting on growth and yield of onion. The experiment revealed that transplanting at 30<sup>th</sup> September was ideal for obtaining good growth and increased bulb yield of onion. Different dates of transplanting does not exert significant effect on plant stand per plot. The plant height (29.57, 57.77 and 60.63 cm) at 45, 75 and 90 DATP and number of leaves per plant (4.97, 8.73 and 10.89) at 45, 75 and 90 DATP were significantly higher with transplanting of seedling on 15<sup>th</sup> September i.e. D<sub>2</sub>. The neck thickness (1.30 cm) at harvesting time, bolting per cent (24.43%), diameter of bulb (4.82 cm), number of doubled bulb (25.08) per plot, weight of doubled bulb (2.97 kg) per plot, total yield (25.14 kg) per plot, unmarketable yield (7.83 kg) per plot and Total Soluble Solids (14.29%) were significantly higher with transplanting of seedling on 1<sup>st</sup> September i.e. D<sub>1</sub>. The minimum days required for maturity (147.33) was recorded with transplanting of seedling on 30<sup>th</sup> September i.e. D<sub>3</sub>. The maximum marketable yield (20.39 kg) was significantly higher with transplanting of seedling on 30<sup>th</sup> September i.e. D<sub>3</sub>.

**Key Words-** Onion, Growth and Yield, Dates of transplanting.

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### **INTRODUCTION**

Onion (*Allium cepa* L.) is one of the most important vegetable bulb crop grown in India from ancient time. The edible portion is a modified stem which is known as 'bulb' and develops under-ground. Onion is popularly used green as well as mature bulb. It is popular a salad crop and mature onion bulbs are widely used as a cooked vegetable in soups, stews and casseroles in addition to a flavoring agent in many other dishes. Because of its importance in cookery, onion is called "Queen of the kitchen" by Germans. It is one of the few versatile vegetable crops that can be kept for a fairly long period and can safely withstand the hazards of rough handling including long distance transportation.

### **MATERIAL AND METHODS**

A field experiment was conducted on sandy loam soil of Horticulture Instructional Farm, C. P. College of Agriculture, S. D. Agricultural University, Sardarkrushinagar during the year 2010-2011. Nine treatments comprising of three dates of transplanting viz., 1<sup>st</sup> September, 15<sup>th</sup> September, & 30<sup>th</sup> September were tested in Factorial Randomized Block Design with four replications.

The results revealed that growth and yield attributes viz., plant stand (%) per plot, plant height (cm), number of leaves per plant, neck thickness (cm) at harvesting time, bolting per cent, days taken for maturity, diameter of bulb (cm), number of doubled bulb/plot, weight of doubled bulb (kg/plot), total yield (kg/plot), marketable yield (kg/plot), unmarketable yield (kg/plot) and Total Soluble Solids (%).

## RESULT AND DISCUSSION

It is clear from the data (Table 1) that the maximum plant height (29.57, 57.77 and 60.63cm) at 45 DATP, 75 DATP and 90 DATP was observed with the seedlings transplanted on 15th September i.e. D<sub>2</sub>. Different date of transplanting does not exert significant effect on plant stand per plot. Number of leaves per plant (4.97, 8.73 and 10.89) at 45, 75 and 90 DATP was significantly higher with transplanting of seedling on 15th September i.e. D<sub>2</sub>. The neck thickness (1.30 cm) at harvesting time, bolting per cent (24.43%), diameter of bulb (4.82 cm), number of doubled bulb (25.08) per plot, weight of doubled bulb (2.97 kg) per plot, total yield (25.14 kg) per plot, unmarketable yield (7.83 kg) per plot and Total Soluble Solids (14.29%) were significantly higher with transplanting of seedling on 1st September i.e. D<sub>1</sub>. The minimum days required for maturity (147.33) was recorded with transplanting of seedling on 30th September i.e. D<sub>3</sub>. The maximum marketable yield (20.39 kg) was significantly higher with transplanting of seedling on 30th September i.e. D<sub>3</sub>.

A perusal of data in Table 1 revealed that the effect of dates of transplanting on bulb diameter was found significant. Significantly the maximum bulb diameter (4.82 cm) was recorded with the crop planted on 1st September i.e. D<sub>1</sub>, which was remained at same bar with the crop planted on 15th September i.e. D<sub>2</sub>. Maximum number of doubled bulb (25.08) was recorded with 1st September transplanting i.e. D<sub>1</sub>. Maximum weight of doubled bulb (2.97 kg) was recorded with 1st September transplanting i.e. D<sub>1</sub>. The minimum weight of doubled bulb (0.89 kg) was recorded with 30th September transplanting i.e. D<sub>3</sub>. A perusal of data on effect of dates of transplanting on Total Soluble Solids (%) revealed that it was found significant. Significantly higher TSS (14.29%) was recorded in transplanting on 1st September i.e. D<sub>1</sub>, but it was at par with treatment D<sub>2</sub> (15th September). The maximum bulb yield (25.14 kg) per plot was recorded with the crop planted on 1st September i.e. D<sub>1</sub>, which was statistically at par with 15th September i.e. D<sub>2</sub>. While the lowest bulb yield (23.21 kg) per plot was recorded with the crop planted on 30th September i.e. D<sub>3</sub>.

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**Table 1:- Influence of dates of transplanting on growth, yield and quality of onion (*Allium cepa* L.).**

Treatments	Plant population / plot (%)	Plant height (cm)			Number of leaves per plant			Neck thickness (cm)	Bolting (%)	Days to maturity	Bulb diameter (cm)	Number of doubled bulb	Weight of doubled bulb (kg)	Total yield /plot (kg)	Marketable yield /plot (kg)	Unmarketable yield /plot (kg)	TSS (%)
		45 DATP	45 DATP	75 DATP	45 DATP	75 DATP	90 DATP										
Dates of Transplanting																	
D1 - 1st September	75.32	23.43	50.80	53.66	4.50	7.37	9.43	1.30	24.43	153.92	4.82	25.08	2.97	25.14	17.31	7.83	14.29
D2 - 15th September	75.48	29.57	57.77	60.63	4.97	8.73	10.89	1.22	22.56	152.33	4.65	19.17	2.06	24.34	17.93	6.41	14.05
D3 - 30th September	77.23	25.47	55.90	60.13	4.57	7.77	10.02	1.03	9.88	147.33	4.38	9.25	0.89	23.21	20.39	2.82	13.63
S.Em. ±	0.88	0.55	0.96	1.02	0.08	0.14	0.18	0.023	0.69	1.84	0.08	0.78	0.08	0.52	0.39	0.22	0.17
C.D. at 5%	NS	1.60	2.82	2.96	0.25	0.41	0.55	0.067	2.00	5.35	0.23	2.29	0.23	1.53	1.15	0.65	0.50

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