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Effect of Different Sowing Dates on the Yield of Tinda Gourd (*Citrullus vulgaris*) Var. *Fistulosus* under the Agroclimatic Conditions of D. I. Khan

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Abstract: An experiment on Tinda Gourd cv. local was conducted at the experimental area of Faculty of Agriculture, Gomal University, D.I. Khan during 1995 to determine the best date of sowing for obtaining high yield. Experiment comprises six dates of sowing viz. 28th Feb., 10th March, 20th March, 30th March, 9th April and 19th April, 1995. The parameters in this regard were days taken to germinate, flowering, fruit setting, maturity of first fruit, vine length (cm), fruit weight (g), number of fruits per vine and yield (tones/ha). The results obtained were significantly differed at 5% level of probability. The studies pertaining effect of different sowing dates showed that early seed sowing of Tinda speed up the germination days, flowering, fruit setting, maturity of first fruit and vine length. The yield results indicated that March is the best date of the sowing Tinda gourd under the agro-climatic conditions of D.I. Khan. This study also revealed early sowing to give better yield performance than late sowing.

Key words: Tinda Guard, *Citrullus vulgaris*, germination, sowing dates, yield

Introduction

Tinda (*Citrullus vulgaris*) belongs to family cucurbitaceae, and is one of the most important summer vegetables grown in Pakistan. It is palatable and tasty when cooked alone. As a result of its good taste and palatability it is known as "Dilpassand". It is rich in vitamins and minerals. Seeds and unripened fruit possesses great medicinal value. It can be grown in all types of soils. Sowing date is one of the most important factors affecting growth and yield of this crop. Water melon cv. Sugarbaby was sown on 5 different dates between 10th November to 15th December. Good plant growth, good fruit quality and highest yield was obtained from the plants sown on 21st November (Dessi and Patil, 1984). Yakimenko (1984) reported that out of 5 planting dates the early sowing on 3rd May gave the best yield in cucumber. When melon cv. *Macrophomina phaseolina* was planted at three different times in spring, it was concluded that highly yield was given by middle spring sowing (Bruton *et al.*, 1985). Delayed planting in musk melon cv. *Flexuosus* significantly decreased fruit weight and total fruit yield (Muhammad *et al.*, 1989). Farooq (1992) reported that the plants sown in the second week of March gave maximum fruit volume, fruit weight, number of fruits per vine, total soluble salts and yield per hectare. Whereas minimum duration for flowering and fruit maturity were recorded in late sowing of muskmelon seeds. Baloch (1994) stated that usually the Tinda seeds are sown from the end of January to mid-February in the plains and from May to July on hills near the edges on each bed. Burki (1996) observed that the early sowing of seeds of Tinda speed up the germination days, flowering, fruit setting, maturity of the fruit and vine length. This study also revealed that early sowing of Tinda seeds give better yield performance and quality of fruit than late sowing. Bajwa and Rehman (1998) reported that normally two crops of Tinda are raised; first in March-April and second in June-July.

Although it is a very important summer vegetable, but a very little work has been reported regarding its sowing time in the country in general and NWFP in particular. The present investigation was under taken to see the effect of different dates of sowing on the yield of Tinda Gourd cv. Local under

agro-climatic conditions of Dera Ismail Khan.

Materials and Methods

The research project was conducted to study the effect of different sowing dates on the yield of Tinda Gourd under the agro-climatic conditions of D.I. Khan at the vegetable farm Horticulture Department, Faculty of Agriculture, Gomal University, D.I. Khan. The experiment was laid out in Randomized Complete Block Design (RCBD) having six treatments and with four replication. The plot size was 3 × 5 m. The seeds were sown on the both sides of the raised beds which were three meters apart and plant to plant distance was 32 cm and were sown at the depth of 1 cm. All the other pre-sowing and post sowing cultural practices were carried out including leveling, manuring, weeding, hoeing, irrigation fertilizer in etc.

Data regarding the various parameters were recorded and analyzed statistically by using Analysis of Variance Technique (Steel and Torrie, 1980).

Results and Discussion

Days to germination: The data regarding days taken to germination are given in Table 1. The data shows that the maximum number of days 12.50 were taken by 28th February sowing followed by 10th March sowing, which took 9.25 days for germination, whereas the minimum number of days 6.50 were recorded in 19th April sowing for germination. These variations observed might be due to the variation in their external factors i.e. environment. Statistically, the sowing at 20th March, 30th March, 9th April and 19th April showed non-significant variations and thus it discourages the sowing of the crop among any one of these dates. These results corroborated the findings of Farooq (1992) who reported the similar number of days taken to germination in muskelon.

Germination percentage: The results obtained showed that the germination percentage of Tinda seeds were highly significant

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Table 1: Effect of different sowing dates on days to germination, germination percentage and days to flowering of Tinda Gourd

Treatment	Sowing dates	Days to germination	Germination %age	Days to flowering
T1	28th Feb.	12.50a	95.00b	47.25a
T2	10th Mar.	9.25b	90.25c	46.75a
T3	20th Mar.	6.75c	99.25a	43.25b
T4	30th Mar.	6.50c	78.25e	39.00c
T5	09th Apr.	6.50c	94.00b	37.00d
T6	19th Apr.	6.50c	83.00d	35.75c

Any two means in the column having common letter(s) are non-significant at 5% level

Table 2: Effect of different sowing dates on days to fruit setting, days to maturity and vine length of Tinda gourd

Treatment	Sowing dates	Days fruit setting	Days to maturity	Vine length (cm)
T1	28th Feb.	52.00a	68.75a	80.25a
T2	10th Mar.	49.25ab	66.50b	77.25a
T3	20th Mar.	48.25abc	61.50c	52.50b
T4	30th Mar.	46.25bc	61.50c	52.50a
T5	09th Apr.	48.50abc	56.50d	45.25c
T6	19th Apr.	45.25c	51.50e	46.25c

Any two means in the column having common letter(s) are non-significant at 5% level

Table 3: Effect of different sowing dates on No. of fruits/vine, average fruit weight and yield of Tinda gourd

Treatment	Sowing dates	No. of fruits/vine	Average fruit weight (g)	Yield (t/ha)
T1	28th Feb.	2.50bc	220.30d	1.86ab
T2	10th Mar.	3.50ab	228.30cd	2.03a
T3	20th Mar.	4.50a	314.50a	2.04a
T4	30th Mar.	2.50bc	281.80b	2.05a
T5	09th Apr.	1.50c	252.80bc	1.72b
T6	19th Apr.	1.25c	276.30b	0.94c

Any two means in the column having common letter(s) are non-significant at 5% level

(Table 1). Maximum germination of 99.25% was recorded in 20th March sowing and was significantly different from all other dates of sowing, closely followed by 28th February sowing with 95.00% germination. Minimum germination percentage of 78.25% was noted when seeds were sown on 30th March. There is only one percentage difference between 28th February and 9th April sowing and both are non-significant with each other. But 9th April produced lesser days to germination as well as lesser days to flowering proving it more suitable than 28th February. Similar results were also reported by Burki (1996) who stated that maximum germination percentage of tinda seeds were obtained in third week of March.

Number of days taken to flowering: The data in Table 1 shows that the results for days taken to flowering were significant. Maximum number of days taken to flowering 47.25 were recorded in 28th February sowing being at par with 10th March sowing which took 46.76 days while the minimum days of 35.75 were observed in 19th April sowing. These findings may be due to the change in temperature, because higher temperature (in the month of April) caused the delay in flowering which resulted in poor fruit setting. Similar findings were also observed by Farooq (1992) in muskmelon.

Days to fruit setting: The significant mean values for days taken to fruit setting as affected by time of sowing are given in Table 2. Early date of sowing i.e. 28th Feb. had the maximum number of 52.0 days taken to fruit setting, which

was at par with 10th March, 20th March and 9th April. Whereas the minimum number of days 45.25 to fruit setting were recorded in 19th April sowing. There is a difference of only one day between 30th March and 19th April sowings and both are non-significant. But 30th March sowing is favourable as compared to 19th April due to larger vine length. The trend of the results were almost similar to that of flowering parameter. Similar results were concluded by Farooq (1992) in muskmelon, in which he stated that earlier sowing will require maximum number of days for fruit setting in Muskmelon.

Days to maturity of first fruit: The data pertaining to number of days taken to maturity of first fruit are presented in Table 2. The difference among the dates of sowing with respect of days taken to maturity were highly significant. Maximum number of days 68.75 were taken when the seeds were sown on 28th February, followed by 10th March sowing with 66.50 days to maturity. The minimum number of 51.50 days taken to maturity was found in case of 19th April sowing. These results corroborated the findings of Burki (1996) who reported the similar number of days taken to maturity of first fruit in Tinda.

Vine length (cm): Table 2 shows vine length of Tinda as affected by different time of sowing and was found to be significant. Maximum vine length of 80.25 cm was noted in 28th February sowing which was at par with that of 30th and 10th March sowings, which were non-significant to each

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other. Although there is a little difference between 28th February and 30th March sowings but 30th March sowing is favoured due to less germination time, high germination percentage as well as less days to flowering as compared to 28th February. The minimum vine length of 45.25 cm was observed in 9th April sowing being at par with 19th April sowing with 46.25 cm vine length.

Number of fruits per vine: The data regarding the number of fruits per vine is given in Table 3. These treatments had significant differences in number of fruits per vine. The highest number of fruits (4.5) per vine was noted in 20th March sowing followed by 10th March sowing which gave 3.5 fruits per vine and were at par with each other. Minimum number of 1.25 fruit per vine was observed in 9th April sowing being at par with the 19th April sowing with 1.5 fruits per vine. These observed variation may be due to the difference in their environment or soil wherein these are sown.

Average fruit weight (g): The significant mean values for average fruit weight of Tinda gourd as affected by different sowing dates are given in Table 3. The maximum fruit weight (341.5 g) was recorded in 20th March sowing being significantly different from other treatments. It was followed by 30th March sowing with (281.8 g) of fruit weight. Minimum fruit weight of (220.3 g) was observed in 28th February. However, all the treatments differ significantly from one another. The results of 30th March, 9th April and 19th April were non significant with each other and all these follow the results obtained on 20th March.

Yield ($t\ ha^{-1}$): The significant data recorded on yield ($t\ ha^{-1}$) as affected by different sowing dates is being presented in Table 3. Results showed that maximum yield of $2.05\ t\ ha^{-1}$ was obtained in 30th March which was statistically at par with 20th and 10th March sowings, respectively. 19th April sowing produced significantly lower yield of $0.94\ t\ ha^{-1}$ being significantly difference of obtained yield among 10th, 20th and 30th March sowings, but 30th March sowing is favoured due to its satisfactory performance in the above mentioned parameters.

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