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# **Performance of Different Gherkins Hybrids at Different Dates of Sowing Under Aswaraopet Conditions**

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**ABSTRACT:** A field experiment was conducted at Horticultural Research Station, Aswaraopet, Khammam district, Telangana state to study the effect of different sowing dates on growth and yield of different gherkins hybrids. There was significant difference in vine length, sex ratio, number of fruits per plant and yield per plant among different hybrids and different sowing dates. Maximum yields were obtained in all the cultivars by sowing in the month of September. Highest marketable yield of 60+ count fruits was recorded in Cassata. Among interactions Cassata sown in the month of September recorded highest marketable yield of 60+ count fruits (6.42 t/ha) which is on par with Sparta sown in the month of September (6.24 t/ha).

**KEYWORDS:** Gherkins, sowing dates, hybrids, yield

## **I.INTRODUCTION**

Gherkins (*Cucumis anguria* L.) commonly known as pickling cucumber is an important cucurbitaceous crop. It is a monoecious, annual, trailing or climbing vine. Its immature fruits are used for processing as pickles, eaten as a cooked vegetable and are used in curries. It is commonly grown in USA, Australia and Srilanka and was introduced in India during late eighties for export oriented production. The production of gherkins in India is concentrated in the three southern states, viz. Karnataka, Tamil Nadu and Andhra Pradesh. Karnataka accounts for almost 60 per cent of the total gherkins production and Tamil Nadu and Andhra Pradesh account for 20 per cent each (Anonymous, 2005). India exported 2,02,926.91 MT of Cucumber and Gherkins, worth Rs. 999.17 crores during the year 2015-16 with major destinations being USA, Russia, Belgium, France, and Spain (APEDA, 2016). It is a major dietary constituent to many European countries and the USA. Hence, almost the entire volume of gherkins produced in India is exported, with little or no domestic demand, except for some five star hotels (Acharya, 2006). It is a warm season crop and a temperature range of 18° – 32°C is ideal for its growth and better yield. The crop grows in a variety of soils rich in organic matter and having proper drainage.

There is steady demand for gherkins to meet the requirement of export oriented processing industries in Andhra Pradesh. High yielding gherkin hybrids are known to respond favourably to temperature, light intensity and day length. It is necessary to identify new areas suitable for cultivation, varieties and appropriate time of sowing also need to be standardised. Hence, an experiment was undertaken with an objective to study the effects of different dates of sowing on growth and yield of different gherkins hybrids in agro climatic conditions of Aswaraopet, Khammam, dist.

## **II.MATERIAL AND METHODS**

A field experiment was conducted during 2010 – 11 at Horticultural Research station, Aswaraopet, Khammam dist of Telangana (erstwhile Andhra Pradesh) situated at 17°15'00.5"N, 80°06'00.6"E and 166 m above mean sea level with an objective to find out suitable gherkins hybrids/varieties and appropriate dates of sowing. The experiment was laid out in Randomised Block Design in factorial concept with three replications.

The experimental soil was sandy loam with slightly acidic pH of 6.7. The treatments comprised of two factors i.e dates of sowing (September, October, November) as first factor and three hybrids (Sparta, Azax, Cassata) as second factor. The field was prepared and applied with uniform dose of FYM @ 25 t/ha, entire dose of phosphorous and potassium and 1/3<sup>rd</sup> dose of nitrogen as per recommendation as basal dose during last ploughing. The NPK fertilizers



were supplied in the form of urea, single superphosphate and muriate of potash respectively. The treatments were imposed as above and uniform crop stand was maintained with recommended cultural practices. The seeds were sown at a spacing of 125 x 50 cm in 4.5 x 4.5 m plots as per the treatmental combinations. Observations were recorded for vine length, number of branches per vine, number of days for first female flower appearance, node at which first female flower appeared, sex ratio, fruit weight, number of fruits per plant, total yield per plant, marketable yield and TSS, and the observations were statistically analysed based on the procedure suggested by Pasne and Sukhatane (1985).

### III.RESULTS AND DISCUSSION

The results of the experiment on parameters like vine length (cm), number of branches per vine, days taken for first female flower appearance, node at which first flower appeared, sex ratio, fruit weight, number of fruits per plant, yield per plant and marketable yield were presented in the table 1. There is no significant difference between three dates of sowing for vine length, number of days for first female flower appearance, node at which first female flower appeared, fruit weight and TSS. However, September sowing recorded significantly highest number of branches per vine (4.61) compared to October and November sowing. Sex ratio was highest in September sowing (2.29) which was on par with October sowing (2.24), number of fruits per plant was highest in September sowing (25.13) and lowest number of fruits was recorded in October sowing (20.10) which was on par with November sowing (20.42). September sowing recorded significantly highest yield (399.11 g/plant) and the lowest yield was recorded in October sowing (314.17 g/plant) which was on par with November sowing (316.81 g/plant). Highest Marketable yield was recorded in September sowing (6.07 t/ha) and the lowest marketable yield was recorded in October sowing (4.78 t/ha) which was on par with November sowing (4.825 t/ha).

Among three different hybrid varieties Cassata recorded highest vine length (141.90 cm) and least was recorded in Azax (126.0 cm) which was on par with Sparta (127.87 cm). Highest number of branches was recorded in Azax (4.84) which was on par with cassata (4.62). Number of fruits per plant was highest in Cassata (23.81) and Azax recorded lowest number of fruits per plant (20.07) which was on par with Sparta (21.77). Cassata recorded significantly highest per plant yield (371.16 g/plant) followed by Sparta (343.78 g/plant) and least per plant yield was recorded in Azax (315.16 g/plant). Similarly highest marketable yield was recorded in cassata variety (5.35 t/ha) which was on par with Sparta (5.23 t/ha) and lowest marketable yield was recorded in Azax (4.79 t/ha). There was no significant difference among varieties for number of days for first female flower appearance, node at which first female flower appeared, fruit weight and TSS.

Among interactions Cassata sown during September recorded significantly highest vine length (147.6 cm) which was on par with Cassata sown during November (139.7 cm). Lowest vine length was recorded in Azax sown during October (124.4 cm). Maximum vine length in September sown crop might be attributed to the prevailing conducive climatic conditions, which was in conformity with the findings of Ara *et al* (2009). Among interactions significant difference was observed for number of branches per vine, node at which first female flower appeared, fruit weight and TSS. Number of branches per vine was highest in Cassata sown during September (4.93) which was on par with Sparta sown during September (4.67). Highest number of fruits per plant was recorded in Cassata sown during September (27.05) closely followed by Sparta sown during September (25.20). Number of fruits per plant was lowest in Azax sown during October (18.47). Cassata sown during September (422.47 g/plant) recorded highest yield which is on par with Sparta sown during September (410.33 g/plant). Azax sown during October recorded lowest yield (288.50 g). Highest marketable yield was recorded in Cassata sown in the month of September (6.42 t/ha) which was on par with Sparta sown in the month of September (6.24 t/ha). Lowest marketable yield was recorded in Azax sown in the month of October (4.39 t/ha). There was superior and desired reproductive growth which might be due to the availability of congenial growing conditions when gherkins was sown in the month of September which resulted in higher yields.

### IV.CONCLUSION

In the present study gherkins crop performed well when sown during the month of September. It is evident that sowing of gherkins during September month can be advantages for obtaining good yields under Aswaraopet conditions. Among all the varieties Cassata is having good yield potential as it performed well at all three dates of sowing. Cassata and Sparta varieties of gherkins performed well when sown in the month of September.

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**Table : Performance of different Gherkin varieties at different dates of planting (2011-12)**

Treatm ent	Vine Length( cm)	No of branc hes per vine	No of days for first female flower appearance	Node at which first female flower appeared	Sex Ratio	Fru it weight (gm)	No. of fruits	TS S <sup>0</sup> Br ix	Yield/pl ant (60+cou nt) (gm)	Market able Yield t/ha
<b>Date of Sowing</b>										
Septem ber	136.17	4.61	26.56	3.50	2.2 9	15.8 2	25. 13	4.3 2	399.11	6.07
October	129.77	4.08	26.78	3.60	2.2 4	15.6 8	20. 10	4.4 1	314.17	4.78
Novem ber	129.83	4.13	26.56	3.47	2.0 7	15.5 2	20. 42	4.3 7	316.81	4.82
<b>Varieties</b>										
Sparta	127.87	4.36	26.56	3.53	2.2 4	15.6 9	21. 77	4.2 9	343.78	5.23
Azax	126.00	4.84	26.67	3.60	2.2 4	15.6 9	20. 07	4.4 1	315.16	4.79
Cassata	141.90	4.62	26.67	3.43	2.1 1	15.5 9	23. 81	4.4 0	371.16	5.35
<b>Interaction</b>										
D1S	132.5	4.67	25.67	3.50	2.2 3	16.0 2	25. 30	4.2 3	410.33	6.24
D1A	128.4	4.23	27.00	3.60	2.3 3	15.8 3	23. 03	4.4 0	364.53	5.54
D1C	147.6	4.93	27.00	3.40	2.3 0	15.6 2	27. 05	4.3 3	422.47	6.42
D2S	126.5	4.07	27.00	3.60	2.3 7	15.5 3	20. 32	4.3 0	315.67	4.80
D2A	124.4	3.77	27.33	3.70	2.2 7	15.6 3	18. 47	4.5 0	288.50	4.39
D2C	138.4	4.40	26.00	3.50	2.1 0	15.7 2	21. 52	4.4 3	338.33	5.14
D3S	124.6	4.33	27.00	3.50	2.1 3	15.5 1	19. 68	4.3 3	305.33	4.64
D3A	125.2	4.53	25.67	3.50	2.1	15.6	18.	4.3	292.43	4.45



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					3	2	72	3		
D3C	139.7	4.53	27.00	3.40	1.9 3	15.4 3	22. 87	4.4 3	352.67	4.02
C.D (0.05)										
Factor A	<i>NS</i>	<i>0.29</i>	<i>NS</i>	<i>NS</i>	<i>0.0 9</i>	<i>NS</i>	<i>1.5 1</i>	<i>NS</i>	<i>12.85</i>	<i>0.32</i>
Factor B	<i>9.11</i>	<i>0.29</i>	<i>NS</i>	<i>NS</i>	<i>0.0 9</i>	<i>NS</i>	<i>1.5 1</i>	<i>NS</i>	<i>12.85</i>	<i>0.32</i>
A x B	<b><i>9.54</i></b>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<b><i>0.1 5</i></b>	<i>NS</i>	<b><i>2.7 2</i></b>	<i>NS</i>	<b><i>30.40</i></b>	<b><i>0.69</i></b>