

## PERFORMANCE OF SOME PARTHENOCARPCUCUMBER HYBRIDS GROWN IN FIBRE GLASSHOUSE DURING SPRING SEASON AT ISLAMABAD

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Four hybrid varieties of cucumber namely Egnazia, Belares, Maram and Serano were evaluated for their performance under a fibre glasshouse with fan and pad system at NARC Islamabad. Empty fertilizer bags containing growing media of farm yard manure, soil and sand in the ratio of 1:1:1 were utilized and seedlings were transplanted in each bag at a distance of 30 cm. Data on time taken to flowering, fruit setting, fruit maturity, number and weight of fruit per plant, average weight of individual fruit and yield were recorded. Maximum yield of 9.15 kg/m<sup>2</sup> was recorded in Serano bearing 11.50 fruits per plant on an average followed by Maram which yielded 7.74 kg/m<sup>2</sup>. Serano had the highest fruit weight per plant (1646g) followed by Maram (1393g). The varieties did differ statistically in respect of time taken to fruit maturity which ranged from 44.5 to 50.0 days.

### INTRODUCTION

Cucumber (*Cucumis sativus* L.) is one of the important summer vegetables of Pakistan. In plains of Punjab, the normal crop of cucumber is grown during spring season and sequential pickings are ready for harvest during the period ranging from May to June. From July onward the supply of cucumber is curtailed due to unfavourable conditions. The parthenocarpic hybrid varieties of cucumber are available which possess prolonged ability of fruiting. But these cannot be successfully tried in the open because of unfavourable conditions. The enhanced yield can only be obtained if these varieties could be planted inside greenhouse or fiber glasshouse.

Nikulenkova (1986) evaluated 34 long fruited, parthenocarpic cucumber hybrids for their potential for greenhouse cultivation. He reported that spring - summer rotation gave better results than winter - spring in terms of yield and quality. The parthenocarpic cucumber hybrid Evadan gave the highest total yield of 27.4, to 31.8 kg/m<sup>2</sup>. Biryukova (1988) recommended the small fruited Soviet hybrid cucumber 'To-

polek' for summer cultivation in greenhouse bearing cylindrical fruits 12-14 cm long, 3.4 to 4 cm in diameter, weighing 110 - 130 g with total yield of 12-20 kg/m<sup>2</sup>. Yurina *et al.* (1986) reported single fruit weight ranging from 250 - 260 g in a parthenocarpic hybrid variety 'Gribovchanka'. In a trial to evaluate parthenocarpic cucumber hybrids in greenhouse, Bulatova (1987) observed that short fruited 'Stella' gave total yield 2.7 to 3.5 kg/m<sup>2</sup> higher than the long fruited 'Moskovskii Teplichny'. Gordii *et al.* (1986) conducted a varietal trial to compare parthenocarpic and bee-pollinated cucumber hybrids exceeded in yield by 1 to 1.6 kg/m<sup>2</sup>. In greenhouse trials, the Soviet hybrid N110 Kh 412 gave the highest yield of 29.1 kg/m<sup>2</sup> followed by Dutch hybrid 'Farbio' with fruit yield of 28.6 kg/m<sup>2</sup> (Nosova, 1987). While conducting comparative study trial with greenhouse cucumbers, hybrid varieties of cucumber namely, Stella, Zozulya, Aprel and Skii and Movir were also reported to be the most promising (Boss *et al.* 1986). Related studies were also conducted by Kydryashov and Ktiitov (1988) who found

parthenocarpic hybrids Zozulya, Aprel and Skii the best having high stable marketable yields of 47.8 to 48.4 t/ha. Similarly Ometsinskii *et al* (1987) recommended hybrid varieties Eskiz, Etyud, Ekho, Zozulya, Maram and Farbio for their suitability of cultivation in un-heated greenhouses.

#### MATERIAL & METHODS

Four parthenocarpic cucumber hybrids namely, Egnazia, Belares, Serano from Royal Sluis, Holland and Maram from Turkey were evaluated for their performance under fibre glasshouse regulated by fan and pad system, at NARC, Islamabad. The seeds were sown in black polyethylene tubes containing growing media of farm yard manure, soil and sand in the ratio of 1:1:1 on March 3, 1986. Empty fertilizer bags containing the same ratio of growing media were utilized for transplanting seedlings on April 1, 1986. Three seedlings were transplanted in each bag at a distance of 30 cm and bags were arranged to maintain 60 cm row to row distance. Data on time taken for flowering, fruit setting, fruit maturity, number and weight of fruit per plant, individual fruit weight and average yield ( $\text{kg/m}^2$ ) were recorded.

The experiment was laid out in randomized complete block design replicated four times. Each replication comprised fifteen plants of each variety. The observations were made on randomly selected five plants of each variety in each replication.

The data were analyzed by the analysis of variance and test of significance was applied following Duncan's Multiple Range Test.

#### RESULTS AND DISCUSSION

The parthenocarpic hybrid variety Belares took a maximum period of 34.3 days to flowering followed by 'Egnazia' (33.3) and Maram (32.8) but statistically these were at par with one another. However, Serano took a minimum time of 30.3 days to

flowering (Table -1).

Serano was early taking 44.5 days to maturity while Maram, Belares and Egnazia were relatively late taking 48.50 to 50.0 days for fruit maturation. Nikulenka (1986) and Yurina *et al* (1986) also reported variations in time of maturity by different cultivars of cucumber. Differences in the time of flowering and maturity may be attributed to the genetic make-up of the hybrid varieties. Sequence of maturity of all the hybrids was the same as it was in flowering. Maximum number of fruits per plant (11.5) were recorded in Serano followed by Maram and Egnazia bearing 9.75 and 9.25 fruits per plant respectively. Belares produced minimum number of fruits per plant (8.00).

The results regarding average weight of fruit per plant were highly significant (Table -1). Maximum weight of fruit per plant (1646g) was recorded in Serano followed by Maram (1393g). Minimum fruit weight per plant (1208g) was noted in Egnazia. Belares with fruit weight of 1215 g was statistically at par with Egnazia. The average weight of single fruit ranged from 131.6 to 151.1 in hybrid varieties tested in the trial. Variations in fruit weight have also been reported by Biryukova (1988) and Yurina *et al* (1986) who studied different hybrid varieties under greenhouse conditions.

Highest fruit yield of  $9.15 \text{ kg/m}^2$  was recorded in Serano which was followed by Maram ( $7.75 \text{ kg/m}^2$ ). Belares and Egnazia yielding  $6.75$  and  $6.70 \text{ kg/m}^2$ , respectively were statistically at par with each other.

Many workers such as Bulatova (1987), Biryukova (1988), Nikulenka (1986) and Nosova (1987) who conducted evaluation trials on greenhouse cucumbers also reported yield variations ranging from 12.0 to  $31.8 \text{ kg/m}^2$  in different hybrid varieties.

It is obvious from the foregoing results that cultivars even under the same conditions behave differently because of their

peculiar genetic make-up. In this experiment, highest yield of 9.15 kg/m<sup>2</sup> was re-

corded in hybrid variety Serano whereas yield upto 31.8 kg/m<sup>2</sup> has been reported by different workers.

**Table 1 Relative performance of cucumber hybrids grown in fibre glass house.**

Name of hybrid Variety	Time required for flowering (days)	Time required for fruit setting. (days)	Time required for fruit maturity (days)	Number of fruit/plant	Weight of fruit/plant (g)	Average weight of single fruit (g)	Average yield (kg/m <sup>2</sup> )
EGNAZIA	33.25 a	36.5 ab	49.0 a	9.25 *ab	1208.*b	131.6	6.70 *b
BELARES	34.25 a	38.0 a	50.0 a	8.00 b	1215 b	151.1	6.75 b
MARAM	32.75 ab	36.3 ab	48.5 a	9.75 ab	1393 ab	142.7	7.75 ab
SERANO	30.25 b	34.0 b	44.5 b	11.50 a	1646 a	144.2	9.15 a
N . S.							

Means not followed by same letters differed significantly at 1% level by Duncan's Multiple Range test.

\*Means not followed by same letters differed significantly at 5% level by Duncan's Multiple Range test.

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