

Land Grant Technical Report No. 13, MAY90

CUCUMBER VARIETY TRIAL
USING
VARIETIES FROM
KNOWN-YOU SEED CO.

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Cucumber (Cucumis sativus) is an important vegetable in American Samoa. An early variety trial (Navarro & Misa, 1986) tested Giant Climbing (Takii Seed Co.) and Marketer No. 2 (Known-You Seed Co.) varieties, and farmers were using Delight Green, Sure Green, Spring Swallow, New Market No. 3 (all from Known-You Seed Co.), and Progress (Takii Seed Co.) varieties. The Asian Vegetable Research and Development Center in Taiwan, Republic of China, compared 20 cucumber varieties, including New Market No. 3 and Delight Green, in 1988, and reported that Million Green and Delight Green were the highest yielding varieties (Tsay and Yang, 1989). Yield, it was found, was strongly affected by weather and field management. This cucumber variety trial will compare several currently used and potentially useful varieties available from the Known-You Seed Co., 26 Chung Cheng Road, Kohsiung, Taiwan, R.O.C., for the climate and environment of American Samoa.

MATERIALS AND METHODS

Eight cucumber varieties were tested in this trial, all from the Known-You Seed Co. Seeds were sown 12-FEB-90 in 5 x 5 x 5 cm peat pots containing Jiffy Mix Plus medium. After the first true leaves appeared, the seedlings were fertilized every 5 days with 50 ml of a 1% solution of 5-52-8 water-soluble fertilizer. The 18-day-old seedlings were transplanted to holes spaced 50 cm apart within rows and 1.5 m between rows. Each hole contained 10 g of 8-20-11-11(S)-0.3(Zn) fertilizer, and each plant was treated to a side-dressing using 20 g of 16-16-16 fertilizer 13, 26, and 39 days after transplanting. The vines were trained to climb a 1.5 m trellis. The field was mulched with a thick layer of coconut fronds. Fruit were harvested 3 times a week between 23-MAR-90 and 25-APR-90. During this period temperatures ranged from 21 to 32 °C, averaging 25 °C.

RESULTS & DISCUSSION

Progress variety (Takii Seed Co.) was initially included in this trial, but it was found to be very sensitive to Fusarium Wilt disease (Fusarium oxysporum f.). Its mortality rate was such that it was excluded from this trial.

Only Fountain variety gave significantly higher yield than the local favorite, New Market No. 3 (Figure 1).

Delight Green, Green Bowl, and Sure Green varieties gave consistent yields (Figure 2). Delight Green gave high productivity, vigorous growth, and good disease tolerance throughout the harvest period.

Spring Swallow, New Market No. 3, Vantage, and Million Green varieties produced most of the fruits during the first 3 weeks of the harvest period. Spring Swallow had especially high early productivity. At 8 weeks after transplanting it produced a yield similar to the yield of New Market No. 3 after 11 weeks. Because of its early maturing, Spring Swallow may be an alternative variety to New Market No. 3 if severe insect infestations are anticipated.

Fruit size and color are important factors for consumer acceptability. Fruit length, thickness, skin color, and fleshiness for the varieties tested are listed in Table 1. The fruit of Fountain variety is short and slender, which is appealing to Oriental consumers. It is sweet, juicy, and ideal to eat raw. However, it may be too small for the local market.

Delight Green variety has a high yield, good fruit size, and a stable productivity. However, its skin color is a mosaic green, and a market acceptance test may be prudent before recommending this variety to farmers.

Green Bowl and Sure Green varieties have very similar yield, fruit size, and shape. Their long, thick, and beautiful dark green fruit make them very attractive to the local market.

The size of Spring Swallow fruit is good for the local market, but during the late stage of plant growth the fruit became very small, which decreases its value.

Vantage and Million Green varieties performed poorly. Not only were yield low, but fruit size was small, rendering them unsuitable.

New Market No. 3 had the longest fruit and was a consistent producer. It is easy to see why it has become a local favorite variety.

CONCLUSIONS

New Market No. 3, Sure Green, and Green Bowl varieties have good fruit size, color, and productivity. Delight Green has potential as an alternative variety in American Samoa but because of its mottled skin color, it should first be tested for consumer acceptance. Spring Swallow variety gives a good, early yield and may be important when insect pests are abundant.

ACKNOWLEDGEMENTS

We wish to thank the Agricultural Development in the American Pacific (ADAP) Staff Development Taskforce for sponsoring Ms. Kuo.

REFERENCES

- Navarro, A. and M. Misa. 1986. Land Grant Technical Report No. 1: Vegetable Research, 1983 to 1985. Land Grant Program, American Samoa Community College, American Samoa Government, Pago Pago, American Samoa.
- Tsay, J.S. and S.T. Yang. 1989. Asian Vegetable Research and Development Center 1989 Progress Report, Shanhua, Tainan, Taiwan, R.O.C.

Table 1. Average fruit length and diameter, skin color, and branching ability of the cucumber plants.

Variety	Fruit length (cm)	Fruit diameter (cm)	color	Branching Ability
Delight Green	28.3	5.90	mosaic green	low
Fountain	23.6	4.67	green	low
Green Bowl	26.5	6.41	green	medium
Million Green	23.4	5.49	green	medium
New Market #3	29.0	5.65	green	medium
Spring Swallow	26.5	5.35	green	high
Sure Green	28.4	6.41	dark green	medium
Vantage	25.2	6.03	dark green	low

FRUIT YIELD OF DIFFERENT CUCUMBER VARIETIES

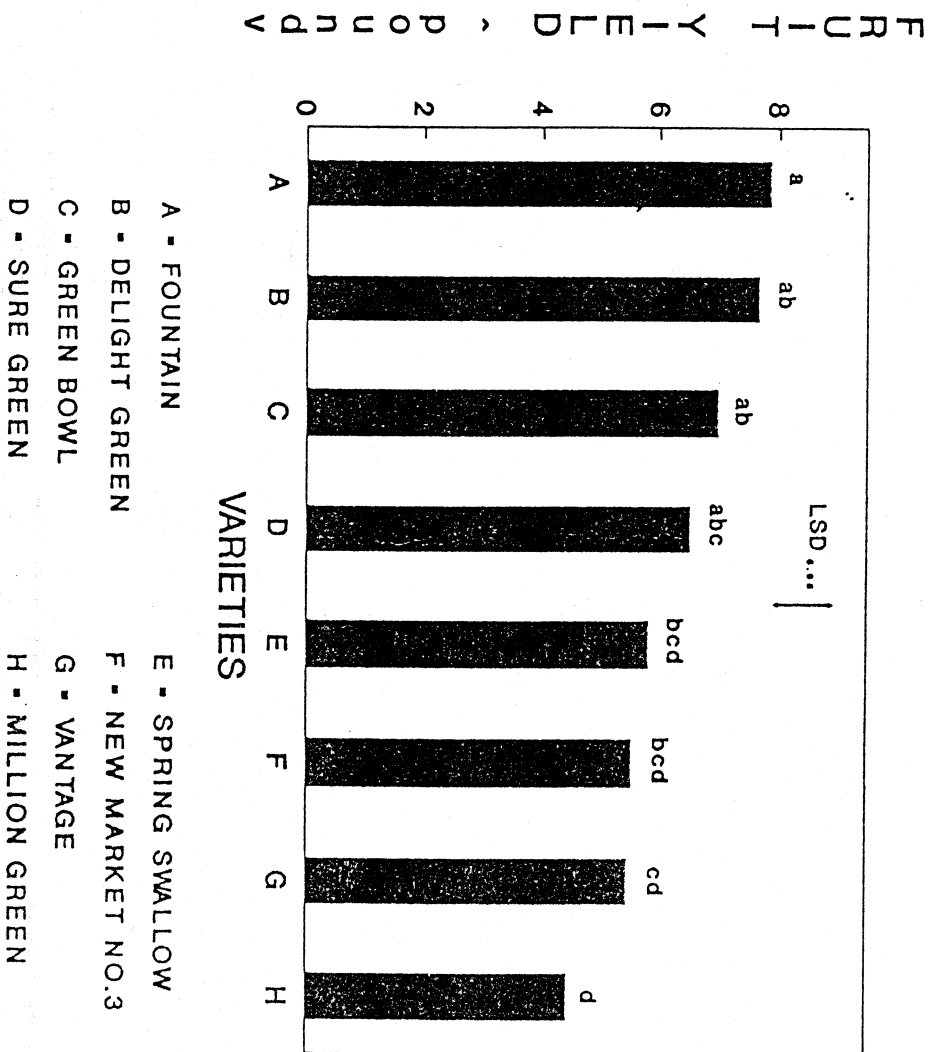


Figure 1. Fruit yield for the eight cucumber varieties.

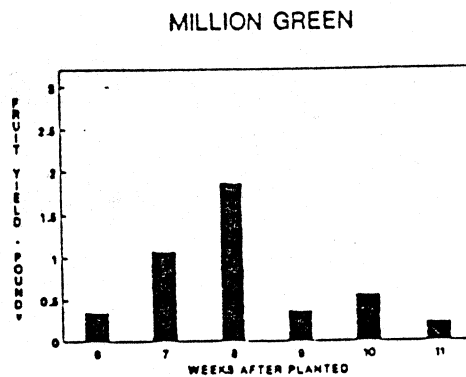
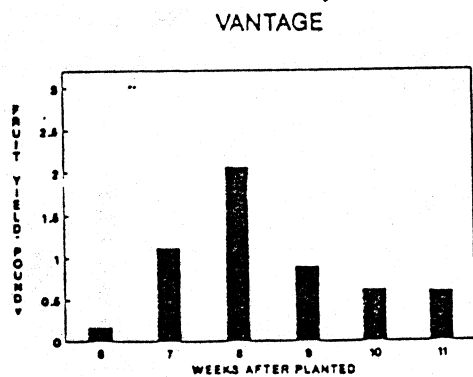
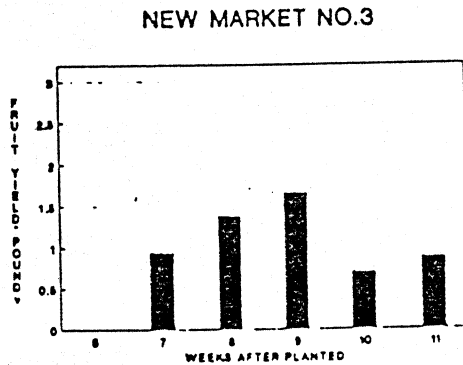
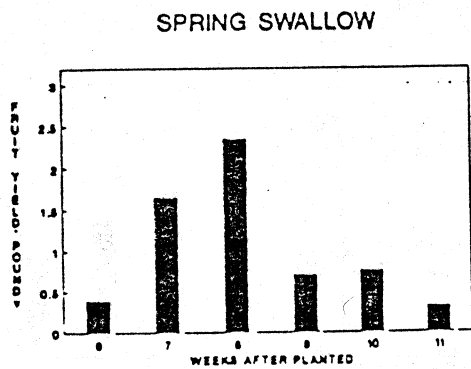
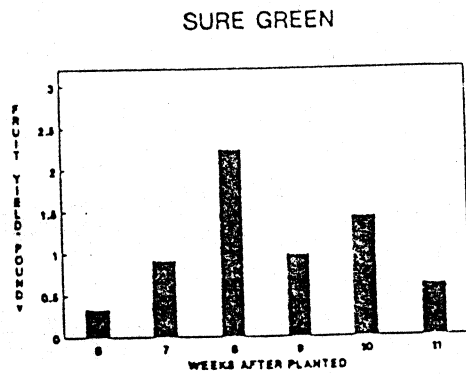
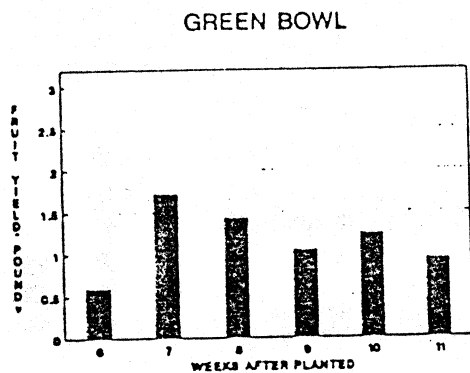
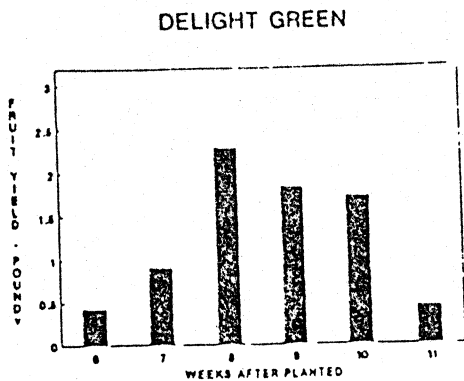
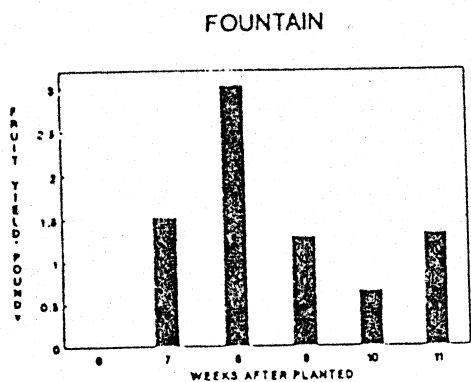


Figure 2. Fruit yield over time for the eight cucumber varieties.