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Technical Report

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Eggplant 'Ideal'
Open-pollinated local cultivar in Guam

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INTRODUCTION

Eggplant (*Solanum melongena*) is an important vegetable crop in Guam. It originated in India,but is now grown in many parts of the world. It comes in a variety of colors, shapes and sizes.

A local open-pollinated eggplant variety has been cultivated for its desired fruit size, color, and marketable qualities of fruits over decades in a private farm in Guam.

Mr. John C. Borja of Guam Department of Agriculture found this heirloom eggplant variety in 1982 and saved one mature fruit for seed production. Since then, he has improved this open-pollinated variety in an isolated area for several generations for home consumption and marketing potential in Guam, and to confirm its stability of field performance.

This variety was named **cultivar 'Ideal'** for its great potential use for many island cuisines and for its great adaptability to Guam (**Figs. 1 and 2**)

The University of Guam and the Guam Department of Agriculture are collaborating to increase production of cv. Ideal in Guam, by increasing seed production, and distribution of seedlings to farmers and gardeners at the Guam Department of Agriculture, Agricultural Development Services, Plant Nursery.

Fig. 1. Eggplant cultivar 'Ideal.'

Fig. 2. Eggplant cultivar 'Ideal' fruits.

PLANT FORM

Eggplant cv. Ideal has a bushy growth habit and is well-adapted to Guam's climate (**Fig. 3**). The plant can grow to the height of 122-183 cm (4-6 ft) and as wide as 91-122 cm (3-4 ft).

Leaves have a large green blade with purple midrib and petioles and a wavy lobed margin. The leaf range from 18-30 cm in length, and from 12-20 cm in width. Leaf arrangement is alternate, borne singly at each node. The stem is green with purple streaks and grows upright.

Fig. 3. Eggplant cultivar 'Ideal' growing in the northern soil.

FLOWER

Flower initiation occurs between 30 to 40 days after transplanting. A flower consists of petals, sepals, stamens, and carpels. There are five to six light purple petals fused at the base of a flower, with a dark purple midrib (**Fig. 4**). The flowers open in the morning and close at late afternoon.

Cultivar 'Ideal' flowers are produced individually or in clusters of two to four on the same stem or branch. An individual flower on the stem grows pointing downward with a long pistil (female part) projecting beyond the stamens (male part) which promotes self-pollination by releasing pollens from the anthers onto the stigma of the same flower (**Fig. 5**).

Fig. 4. A flower of eggplant cultivar 'Ideal' consists of fused light purple petals with dark purple midrib.

Fig. 5. Downward orientation of flowers.

FRUIT

The first fruit harvest occurs around 55-60 days after transplanting. 'Ideal' plants produces an average of five to seven fruits per plant per month.

One fruit can weigh an average of 136-250 g (0.3-0.5 lbs.). Harvestable fruit length can vary between 15-23 cm (6-9 in) with fruit width ranging between 5-8 cm (2-3 in).

Eggplant 'Ideal' fruits are generally short and teardrop-shaped, having purple or purple-green skin with slight green streaks. The calyx supporting fruit is green and sometimes with tiny thorns.

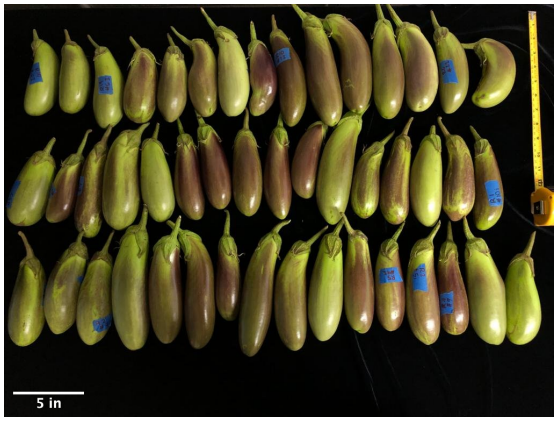


Fig. 6. Fruits of open-pollinated eggplant 'Ideal' at different stages of development.

As the nature of an open-pollinated variety, cultivar 'Ideal' produces fruits with a slight variation in size, color and shape (**Fig. 6**). Fruit diversity is an advantage for those growers marketing to consumers that differ in their fruit preference.

Eggplant 'Ideal' Used in Island Cuisine

John Borja

Eggplant 'Ideal' with local hot peppers and Kangkong.

John Borja

Eggplant 'Ideal' with coconut. milk.

John Borja

Grilling eggplant 'Ideal.'

Saving Seeds of Eggplant 'Ideal" for Future Production

Step 1. Control Pollination

✓ *Self-pollination*

- Make sure pollination occurs within the same flowers or among flowers of cultivar 'Ideal' plants.
- **NO** cross pollination with other eggplant cultivars to avoid any contamination.

Fig. 7. Bagging a flower to ensure self-pollination.

Fig. 8. Growing potted eggplant 'Ideal' plants in insect cages.

✓ *Isolation*

- Protect flowers from insect visits (**Fig. 7**).
- Grow eggplant 'Ideal' in isolated insect cages (**Fig. 8**) or at an isolated field (**Fig. 9**).

Fig. 9. Growing eggplant 'Ideal' in an isolated field. Recommended Isolation distances is 650 ft (200 m) away from other eggplant cultivar growing fields.

Step 2. Harvest fully matured fruits

- When a fruit matures for seed production, the color changes to yellow and the fruit becomes bigger. Mature fruits are ready to harvest at 75-80 days after transplanting (**Fig.10**). It is recommended to harvest well developed fruits from healthy plants.

Fig. 10. **Left**: Marketable fruits for consumption; **Right**: Fully mature fruits for seed production.

Step 3. Washing and Drying

1. After harvest, keep yellow mature fruits at room temperature for 1-2 weeks for further seed maturation.

2. Remove seeds and wash in water.

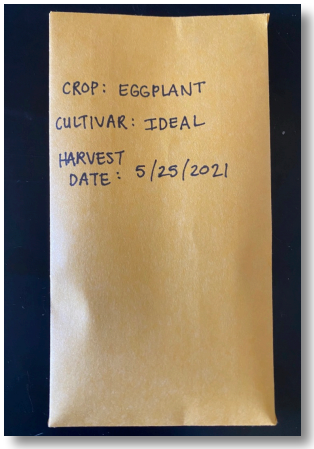
3. Dry seeds on paper.

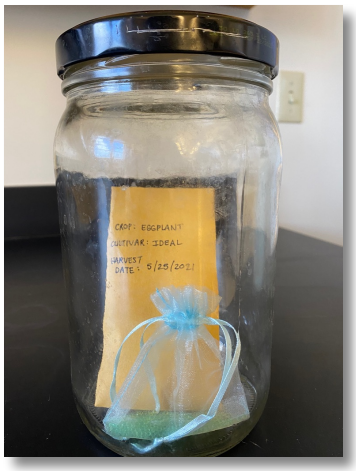
Step 4. Storing Seeds

1. Cultivar 'Ideal' produces as many as 1,000 to 2,000 seeds from a mature fruit. Dry seeds are ready to plant or store for future planting.

2. Keep dry seeds in an envelope or small plastic bag. Make sure to label the name of cultivar and harvest date.

3. Store seeds in a jar or a plastic container with desiccant such as silica gel or charcoal, and keep it in a refrigerator (40°F or 4°C.)





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Acknowledgements

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