



Florida Cooperative Extension Service

The Pineapple¹

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- **Scientific Name:** *Ananas comosus* (L.) Merr.
- **Family:** Bromeliaceae
- **Origin:** Brazil and Paraguay
- **Distribution:** Grows in all the tropical and warm subtropical areas of the world.

DESCRIPTION

Plant. Small, herbaceous, perennial, with long sword-like leaves, arranged in a spiral around a short stem. Leaves may or may not bear marginal spines.

Fruit. Develops from the inflorescence at the end of the stem, and it consists of many small, seedless fruits fused together. Size varies from 1 - 10 lbs or more. Oval to cylindrical in shape and yellowish to orange in color.

Season of Bearing. In the tropics fruit is produced almost continuously throughout the year. Fruits ripen 12 to 8 months after planting. In Florida greatest production occurs during the summer months.

Maturity. Fruits should ripen on the plant for maximum flavor and sugar content. Judging the degree of ripeness requires experience and knowledge of the particular variety.

CLIMATE

Pineapples grow and produce best where the temperature is warm and relatively uniform throughout the year. In Florida they survive a temperature of 28°F, but sustain much leaf damage, and are killed at low temperatures. Plantings therefore are restricted to southern coastal area. Prolonged exposure to temperatures in the low 40's result in internal breakdown or "heart-rot" of the flesh. On the other hand, extreme high temperatures cause sunburning and cracking of the fruit. The climate of Florida is not suited to large scale commercial production of pineapples.

SOILS

While most sandy Florida soils, if well drained, are satisfactory, pineapples thrive best in a sandy loam, mildly acid soil of medium fertility. They tolerate drought remarkably well, but adequate soil moisture is necessary for good fruit production.

VARIETIES

The following are known in Florida for their distinct fruit characteristics.

Red Spanish. 2-4 lbs, pale yellow flesh with pleasant aroma; squarish in shape. Well adapted for shipping as fresh fruit to distant markets. Leaves spiny.

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Smooth Cayenne. 5-6 lbs, pale yellow to yellow flesh. Cylindrical in shape and with high sugar and acid content. Well adapted to canning and processing. Leaves without spines.

Natal Queen. 2-3 lbs, golden yellow flesh, crisp texture and delicate mild flavor. Well adapted to fresh consumption. Keeps well after ripening. Leaves spiny.

Permambuco (Eleuthera). 2-4 lbs, with pale yellow to white flesh. Sweet, melting and excellent for eating fresh. Poorly adapted for shipping. Leaves spiny.

Alaska. 3-6 lbs, yellow flesh, sweet and tender. A poor shipper, very susceptible to physiological breakdowns of the flesh.

PROPAGATION AND PLANTING

Propagation is by planting new vegetative growth from the mother plant. There are four general types: "slips" which arise from the stalk below the fruit, "suckers" which originate at the axils of leaves, "crowns" which grow from the top of the fruits, and "ratoons" which come out from underground portions of the stem. "Slips" and "suckers" are the preferred planting material, especially if they are large and vigorous.

Pineapples are planted, preferably during the summer, in beds consisting of 2-5 rows of plants with walks between them 18-30 inches wide. Narrow walks are preferred with smooth-leaf varieties. Distance between plants in beds ranges from 10 to 18 inches each way depending on the vigor and size of the variety. Two-row beds are better for mechanical operations, but 5-row beds make more effective use of the land, and are adapted to home plantings.

Use of tar-paper or black plastic as mulch has become widespread because they help to eliminate weed competition and conserve moisture.

FERTILIZER

Pineapples respond better to nitrogen than potassium. However, some potassium must be used in most Florida soils. Phosphorus is needed only in soils deficient in this element. In Florida magnesium is more likely to be needed than calcium and may be applied in the fertilizer or as a foliar spray. Of the minor elements, iron is needed in higher amounts,

especially in soils with a pH of 6.5 or higher. Fortunately, and unlike most other plants, iron may be supplied to pineapples by foliar sprays of ferrous sulfate.

In Florida fertilizer applications containing 7-2-7-3 or 8-3-8-4 (N-P-K-Mg), with 40% of the nitrogen coming from organic sources, can be alternated with foliar sprays of urea (80 lbs/100 gal. water) mixed with ferrous sulfate (6-8 lbs/100 gal. water). Start with 1 oz. of 7-2-7-3 per plant four months after summer planting, followed four months later by urea and iron sprays. On the other hand, if plants are on beds covered with plastic, start with a preplant application of 1000 lbs of 8-3-16-4 to an acre or about 1½ ounces of fertilizer per plant on a basis of 12,000 plants per acre. After planting, apply foliar sprays of urea, ferrous sulfate and magnesium sulfate (15 lbs/100 gal. water) every four months.

FORCED FRUITING

Since pineapples flower erratically, it may be desirable to force plants into producing flowers and fruits. This can be accomplished, provided plants are mature enough, by treatment with one of the following materials: Calcium carbide, applied to the terminal bud either as a few grains (10-12) or in solution (30 gms to 1 gal. water). Foliar sprays of naphthaleneacetic acid (NAA) (1 gm in 10 gal water) or B-hydroxyethyl hydrazine (BOH). Of the three, BOH is the most effective. It is used commercially in Puerto Rico at the rate of 5 ml of 80% material for 1 gal of water. Most plants, treated when large and growing vigorously, will have fruit ready for harvest 5-7 months after treatment.

PESTS

There are several pests of pineapple in Florida, but the ones most likely to be troublesome are mealybugs and nematodes. Mealybugs are usually introduced with infested planting material. Preventive measures should be taken before planting by dipping "seed" material in a pesticide currently registered for that purpose.

Plants in beds should be checked frequently for mealybugs. Ants will bring in and spread mealybugs in pineapple plantings. If control measures are needed, contact the local Agricultural Extension Agent for current recommendations.

Nematodes weaken and destroy roots. Affected plants are unable to use fertilizer effectively, and lose vigor. Preventive measures are the only means to avoid nematode damage. They are as follows:

1. Use nematode-free planting material. Crowns and slips which have never been rooted in soil should be free of nematodes, as will any planting material from nematode-free soils.
2. Plant in nematode-free soil. "Virgin" soil is not necessarily free of the kinds of nematodes which injure pineapple, but is less likely to have injurious nematodes than land in which vegetables or ornamentals have been grown in preceding seasons.
3. Fumigate nematode-infested soil. Fumigation will not permanently eliminate nematodes from soil, but should reduce populations sufficiently for the pineapple to be well established before nematode numbers return to damaging levels. Please contact your local Agricultural Extension Agent for current control recommendations. Fumigation for pineapples should be deeper than for common vegetables, and waiting periods between treatment and planting time should be extended accordingly. Follow label instructions and safety precautions carefully.