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INFORMATION ON SOME TROPICAL AND SUBTROPICAL
FRUIT TREES
AT THE
LAND GRANT AGRICULTURAL EXPERIMENT STATION
MALAEIMI, AMERICAN SAMOA

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ABSTRACT

In 1985, twenty-five species of tropical and subtropical fruit and nut trees were introduced to Tutuila, American Samoa. These trees were planted at six sites throughout the island, including one site at the Land Grant Agricultural Experiment Station at Malaeimi. What follows are brief descriptions of many of these tree species, taken from several sources, to aid people in learning something about the trees.

Acerola Cherry. Malpighia glabra. Family and genus named after Marcello Malpighi (1628-1694) (Malpighiaceae). An evergreen to semideciduous shrub, 6 to 10 feet high and 4 to 6 feet wide. Leaves are shiny and ovate, 1 to 3 inches long with smooth edges. The 1/2-inch diameter flowers are white to pink and appear toward the end of the dry season. The fruit is bright red, tinged yellow, cherry-like, obscurely 3-lobed with a sweet to tart flavor. Each fruit contains 3 triangular, ridged seeds. The fruit, high in vitamin C, is usually too acidic to eat raw, but is excellent in jelly. The tree grows well in clay or sandy soils, but is susceptible to root-knot nematodes.

Carambola, Star-fruit. Averrhoa carambola L. Wood-Sorrel Family (Oxalidaceae). Carambola, a Malaysian tree, is cultivated for its fruit. It has many branches and ranges in height from about 20 to 30 feet. It has dense evergreen foliage, each leaf half a foot long, consisting of 3 to 11 oval, smooth, paired (or nearly so) leaflets, with an extra leaflet at the tip. Small clusters of tiny red, dark pink to white flowers appear on bare branches or at leaf bases. Fruit is sometimes borne on three-year-old trees. The fruit is waxy, greenish-yellow to orange, oblong, 2 to 5 inches long, with five length-wise ridges. A thin, fragrant skin covers a watery, acid, pleasant-tasting pulp. Two varieties are raised: one is strongly acid and best to eat when preserved; the other is sweet and good when raw.

Durian. Durio zibethinus L. Murr. Bombax Family (Bombacaceae). A large-sized tree of 100 ft or more, perhaps a native of Borneo, is famous for its fruit. Twigs and underside of the short-stemmed, shiny, dark green leaves are covered with silvery or coppery scales. Leaves are oblong, 3 to 7 inches long, and fragrant when crushed. White flowers, 2 inches long, are clustered on the branches, have a scaly, five-lobed calyx, five petals, and a staminal column bearing many unpleasant smelling stamens. The greenish-yellow, ovoid, five-celled fruit is 6 to 12 inches long and 5 to 6 inches in diameter, with a thick spiny rind enclosing a creamy, delicious, but unpleasant-smelling (rotten onion!) pulp. The large yellow seeds are sometimes cooked and eaten.

Gramichama, Grumixama. Eugenia dombeyi, Skeels; synonyms, E. brasiliensis, Lam., Stenocalyx brasiliensis, Berg. Myrtle Family (Myrtaceae). A native of Brazil, this slow growing tree may reach 10 to 20 feet high and 6 to 8 feet wide. Its leaves are elliptical, glossy, deep green, and 2 to 3 inches long. The small white flowers produce a purple-black fruit about 3/4 inch in diameter. The thin skin covers a soft white flesh with a sweet, mild acid flavor. The seeds are round or hemispherical, with usually 1 or 2 per fruit. The tree does best when there is plenty of moisture.

Grapefruit, Pomelo. Citrus paradisi Macf. Rue Family (Rutaceae). The grapefruit, a native of the West Indies, is much like the pummelo, but the fruit is smaller, juicier, and clustered, with pulp commonly pale green to yellow. The Marsh variety is seedless, with some forms having a pink pulp. Grapefruit is said to excite the flow of the salivary and gastric juices and thus to stimulate the appetite.

- Jackfruit, Jak-Fruit, Jaca. Artocarpus integra (Thunb.) Merr. (Moraceae). A large tree with dark green leaves about 6 inches long. The fruit are borne during the rainy season. They are oval to oblong with a rough green rind and may weigh up to 40 pounds. The pulp is eaten raw or cooked and has a sweet to tart flavor. Seeds are enclosed in a slippery, juicy covering, and may be roasted or boiled. They taste like chestnuts. The Jackfruit is a close relative to the breadfruit, A. communis.
- Lemon, Lemī. Citrus limon (L.) Burm.f.; synonym, C. limonia Osbeck. Rue Family (Rutaceae). The lemon is a small tree from Southeast Asia. The leaves are 2 to 4 inches long, edges scalloped, their stems very narrow-margined; thorns large; fruit oval, 3 to 5 inches long, tip pointed, skin more or less rough, pulp juicy, sour, with 8 to 10 segments.
- Lime. Citrus aurantiifolia (Christmann) Swingle. Rue Family (Rutaceae). The lime is somewhat like the lemon, originating in India or Southeast Asia, but the leaves are smaller, the fruits smaller, more nearly globose, and the skin thinner, smoother, greenish yellow. Many varieties are known, including the Kusaie, Rangpur and Tahiti.
- Longan, Dragons Eye. Euphoria longan (Lour.) Steud. Soapberry Family (Sapindaceae). The longan, an evergreen 25 to 40 feet high and equally wide, is from China. The twigs are brownish woolly. The leaves are compound, 8 to 10 inches long and have 6 to 12 alternate or nearly opposite, oblong, leathery, blunt or pointed leaflets 2 to 6 inches long. Panicles of small, yellowish-white, brownish-woolly flowers, each with five sepals and five petals, are borne at branch tips and leaf basis. The ripe fruit are yellow to brown, globose, 1 inch in diameter, and hang in grape-like clusters. Its crust is thin, nearly smooth, marked with a fine honeycomb pattern covering white, juicy, edible pulp, which is separate from the single, shiny, dark brown seed. The pulp tastes like that of the litchi but is less flavorful. It is commonly eaten raw. In China, the pulp is also canned, or the fruit is dried, like that of the litchi.
- Loquat. Eriobotrya japonica (Thunb.) Lindl. Rose Family (Rosaceae). The loquat is a low, evergreen, drought-resistant tree 10 to 20 feet high, which is used both decoratively and as a fruit tree in central China, its home, and in many warm countries. The fruit is often stung by the Mediterranean fruit fly. Best and largest fruit is borne on grafted trees between altitudes of 3000 and 5000 feet. Near the ends of branches are long-oval, thick, tooth leaves, 5 to 10 inches long, shiny above, rusty-woolly beneath, on short petioles. White, fragrant, five-petaled flowers, about 1/2 inch in diameter, develop in the fall in rusty clusters at branch ends. The yellow, downy, globose fruit, which is about 1.5 inches long, with a pleasant acid-flavored, white or yellow flesh enclosing a few large seeds, ripens in clusters. It is eaten raw or cooked.
- Litchi, Lychee, Leechee. Litchi chinensis Sonn. Soapberry Family (Sapindaceae). The litchi, a thick-foliaged, broad-crowned fruit tree from Southern China, grows slowly to a height of about 30 feet. The leaves are compound and have 2 to 4 pairs of shiny, oblong, drooping leaflets, 3 to 7 inches long, lighter below, very pale green when young. They are less distinct and

fewer-veined than those of the longan. The flowers have five sepals and no petals. A good tree bears 200 or more pounds of fruit during the summer, some beginning when 5 years old, some not in 20 years. The perishable fresh fruit, highly prized for its delicious flavor, is a good source of ascorbic acid and phosphorus. The dried fruit, called "litchi nuts", is shipped long distances, being prepared in China by drying in the sun. Much is also canned in syrup, when, like the fresh fruit, the pulp is white and has a grape-like consistency. The dried fruit is quite different, having reddish-brown, sticky, shrunken, sweeter pulp, much like a raisin. The large brown seed enclosed in the pulp of each fruit is short-lived, dying 4 or 5 days after picking. The fruit is usually preferred to the longan, is larger, and has a rougher red shell. Litchi trees need considerable moisture. They are injured by several insect pests.

Orange, sweet. Citrus sinensis (L.) Osbeck; synonym, C. aurantium var. sinensis L. Rue Family (Rutaceae). The orange is a medium-sized tree from China. The leaves are 3 to 4 inches long, more or less scalloped, their stems narrow-margined; thorns few to none; fruit globose, to 3 inches in diameter, skin orange, smooth and tight, pulp juicy, sweet, with 10 to 13 segments, the core solid.

Pummelo, Shaddock. Citrus grandis (L.) Osbeck; synonym, C. maxima (Burm.) Merr. Rue Family (Rutaceae). The pummelo, a native of Malaysia and Polynesia, is a tree 15 to 30 feet high. The leaves are 3 to 8 inches long, scalloped-edged, their stems broadly winged, with slender or no spines. The fruits are solitary, globose to pear-shaped, about 6 inches in diameter, with smooth, pale yellow skin, and comparatively dry, yellow or reddish, sour pulp in 11 to 14 segments. The pulp is used raw in salads and cooked in jam with the rind.

Rambutan, Rambotang, Rambustan. Nephelium lappaceum L. (Sapindaceae). A native of Malaysia, this large, spreading tree may grow 35 to 40 feet high. Its compound leaves are composed of 5 to 7 pairs of shiny, dark green elliptic leaflets about 4 inches long. The small green flower (a calyx with no petals) has fine hairs and is divided into 4 to 6 lobes. A single tree usually contains both male and female flowers. The fruit is red or orange-yellow, about the size and shape of a hen's egg, borne at the tips of branches in a bunch of 10 to 20. It has 1/2 inch long, soft, fleshy spines, resembling burrs. A white, juicy, sweet pulp surrounds a large seed. In the hot, humid tropics, the tree usually fruits twice a year. The bark is used as a folk medicine.

Rollinia. Rollinia deliciosa Safford. Custard-Apple Family (Annonaceae). Rollinia is a medium-size Brazilian tree or shrub. Leaves are elliptic, acuminate, 8 to 11 inches long. The flowers bear wings on the three outer petals. The fruit are much like that of the sugar-apple, being roundish oblate, 3 to 5 inches in diameter, cream-yellow with a cream-colored flesh that is juicy and sweet. The tree is noted for its rapid growth.

Sapodilla, Chico, Chicle tree. Manilkara zapota (L.) van Royen; synonyms, Achras zapota L., Sapota achras Mill. Sapodilla Family (Sapotaceae). A smooth,

variable, evergreen tree ranging in height from 15 to 60 feet, from Central America, where it forms forests on lime soil, is the main source of chicle for chewing gum. To obtain the gum, trees are tapped only once in two or three years. In a few hours a tree yields about 60 quarts of white latex containing about 25 to 50% chicle, which undergoes many processes to prepare it for the final product. The shiny oblong leaves, about 2 to 5 inches long and 1 to 2 inches wide, are clustered at rusty ends of branches, and among them in season and solitary on long stems at leaf axils appear white, green, or brown six-parted flowers, about 1/3 inch long, that are fragrant at night. The fruit is brown, globose to ovoid, 1 to 2 or more inches long, and has a thin skin covering reddish or brownish, soft, sweet, edible pulp with 1 to 12 black shiny seeds. It is a favorite fruit in tropical America, and the tree is cultivated for the fruit there and in many other tropical regions. The wood is hard, fine, red, and useful for many articles.

Sapote, black. Diospyros ebenaster Retz. Ebony Family (Ebenaceae). A Mexican and West Indian tree which grows to about 45 feet high. It has smooth, blunt leaves, 4 to 8 inches long, and a green to black, smooth, globose fruit about 4 inches in diameter, which is insipid to eat raw but is good cooked with lemon or preserved. Green fruit is said to have poisonous properties and has been used to aid in narcotizing fish.

Sapote, white. Casimiroa edulis Llave and Lex. Rue Family (Rutaceae). A broad-crowned tree from Mexico and Central America has palmately divided leaves 5 to 8 inches in diameter, with 3 to 7 oval, leathery, short-stalked leaflets. Flowers are small, five-parted, greenish or whitish, in short clusters at branch tips and leaf axils. The rounded, shallowly five-lobed, somewhat applelike fruit is about 3 inches in diameter and has a thin green or yellow skin covering soft, whitish, juicy, edible, sweetish pulp, which surrounds 3 to 5 seeds. In Mexico the bark, leaves, and seeds, which contain a glucoside, are used medicinally to induce sleep. The wood is white, soft, and not durable.

Soursop. Annona muricata L. Custard-Apple Family (Annonaceae). The soursop is a small evergreen tree from Peru and Ecuador. Its leaves, smooth and shiny-green on top, for a time have a reddish down underneath. The flowers ordinarily appear singly or sometimes opposite the leaves, are yellowish and about 2 inches in diameter, have 6 thick petals and a peculiar odor. The shiny, dark green, irregularly heart-shaped, softly spiny fruits 6 to 8 inches long, weigh 1 to 6 pounds. The pulp is like white cotton saturated with a sour juice, from which a pleasing, refreshing drink are made in parts of tropical America. The fruits are also eaten by livestock. Inch-long, black seeds are embedded in the pulp. Both leaves and fruit have a peculiar odor.

Sugar Apple, Sweetsop. Annona squamosa L. Custard-Apple Family (Annonaceae). A semi-deciduous tree from Peru and Ecuador, 15 to 20 feet tall with narrow, pale green, lanceolate leaves 2 to 4 inches long. Flowers appear singly or in clusters of 2 to 4, are greenish yellow, 1 inch long with the 3 outer pedals oblong, thick, and rounded at the tips. Fruits are

round to conical, 2 to 3 inches in diameter, yellowish green, and covered with large, prominent knobs. The white pulp is sweet and slightly acidic in sections that fall apart. It contains some brown seeds the size of small beans. Both leaves and fruits have insecticidal properties.

Surinam Cherry. Eugenia uniflora L. Myrtle Family (Myrtaceae). *Eugenia* includes about 900 species of trees and shrubs distributed throughout the tropics. The Surinam Cherry, from Brazil, is a large evergreen shrub or small tree 10 to 20 feet tall and 6 to 8 feet wide. The glossy green leaves are 1 to 2 inches long, ovate; flowers white to cream-colored, single or few together, with four round petals about 1/3 inches in diameter; fruits deeply eight-ribbed, red to black with a like colored flesh, spicy, acid, with 1 or 2 large seeds. Good eaten fresh or in jellies and jams. The tree makes an excellent hedge.

Tamarind, Wi'awa'awa. Tamarindus indica L. Pea Family (Leguminosae); Senna Subfamily (Caesalpinioideae). The tamarind is a slow-growing tree, probably a native of tropical Africa and Asia, where it is a favorite fruit and shade tree. It can reach a height of 80 feet. It has open, spreading branches and graceful, feathery foliage, each leaf having 10 to 20 pairs of 1/2 inch long leaflets. The flowers are small, red and yellow, and have 3 petals, which equal the four-lobed narrow calyx. The pod is velvety, reddish brown, thick, 2 to 8 inches long, and its brittle shell never opens voluntarily. It encloses a few seeds embedded in a thick, sticky, brown pulp, from which a pleasant-tasting syrup is made for use in drinks, curries, and chutneys. This pulp, which contains much sugar and tartaric acid, has cooling and laxative properties and is also used as a gargle. In India, the leaves and the bark are used as medicines.

Wampi. Clausena lansium (Lour.) Skeels; synonym, C. wampi (Blco.) Oliver. Rue Family (Rutaceae). The wampi is a shrub or small tree from southern China. The leaves have 5 to 9 alternate, oval, shiny, resin-scented leaflets, each about 2 inches long. It bears many small, white, five-parted flowers in clusters at branch tips. The fruits are globose berries with 5 sections, 1 inch in diameter, hairy, yellowish brown, with white pulp, tasting like gooseberries or grapes. They are eaten raw, in jam, or made into a drink, and in Thailand are considered one of the finest of fruits.

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