

## Fig Growing and Marketing in Japan

Figs are among the oldest cultivated fruit having been traced to 5000 BC. Pliny the Elder, a historian and scientist who died in the Vesuvius eruption of 79 A.D. mentioned 29 types of figs in his early writings. Fig plantings were documented in Mexico in the mid 1500s and at the same time reported to be in China. In 1669 figs were tried in Virginia and in 1769 were planted in San Diego. It was not until 1900 when a pollinating wasp was introduced that it became a commercial crop.

There are early records in Japan of figs (ichijiku in Japanese). They first entered the country through Nagasaki in 1630. Others came to Japan from Korea. Industry did not develop until 1908 when a young Kohjiro Masui left Hiroshima for California and returned with a fig cultivar now called the Masui-Dauphine, (Sometimes spelled in English as Dolphin). It is unclear how this evolved but 90% of the figs grown in Japan are Masui-Dauphine. There is some speculation that it evolved from early California Smyrna figs. 98% of those sold commercially are Masui-Dauphine. Others grown include Rodos, Bahane, Wase Nihon Shu, King, Noride, White Genoa, Violette-Dauphine, Negro, Largo, Selesto and Brown turkey. Most of these are for home use or used for grafting tests at various agriculture experiment stations.

In the early 1960's a typhoon destroyed most of the figs in central Japan. Aichi-ken, the largest producing area was devastated. At the time the trees were kept much the same way they were in order producing areas and allowed to grow to 2 or 3 meters or more. Producing branches were kept apart but the trees got to be larger and suffered the typhoons wrath. At that time researchers developed the current system for tree management and growth that has proven to save time in harvesting and make it much easier for growers and the coop to figure each years crop. There are some small differences in how the fig trees are shaped or the new growth is maintained in the different producing areas of Japan.

### Tree Shaping and Care

Young trees are allowed to grow to about 2 meters in height before being slowly lowered over a period of ten days to reduce stress and breakage. They are fastened to supports about 40 cm above ground. The one vertical becomes a horizontal. In some cases two verticals will be encouraged and tied in opposite directions. Older trees can be found with 4 main horizontal arms in an X pattern. All the arms are tied to supports. Over a few years when the desired length is reached, 2.5 to 5 meters, the tips are routinely cut.

From these long horizontal limbs, new shoots for the years growth and production sprout. These are cut to keep the new uprights 50 cm apart. In some locations 30cm or

40cm are common but new verticals at 50cm have shown to produce more consistent production and keep leaves from touching. The spread of virus is a serious concern. Each year the new vertical will produce 18 to 20 fruit before the season ends.

The verticals are cut each year leaving about 7cm or 8cm of old growth, or 2 or 3 nodes. The following seasons new growth appears on the ends of the cut nodes. When new shoots appear, only the most outer one is left for the production. This is usually the strongest. During the growing season, the verticals will reach a height of more than one meter and produce 18 to 20 figs. These verticals are always supported either by framework or by plastic strapping that hangs from an overhead frame. Occasional side shoots are cut off. The average tree produces 220 figs in a 2 x 9 foot space.

Examples can be seen at the following links.

<http://www.hawaiiifruit.net/togofig/index.html>

<http://www.hawaiiifruit.net/hamafig/index.html>

<http://www.hawaiiifruit.net/figstation/index.html>

<http://www.hawaiiifruit.net/aifarm/aifigfarm.html>

The figs are generally harvested in a 100-day period from May to July.

Trees are mulched regularly to prevent excessive root growth as it is believed that the root

Growth will detract from the fruit growth. Various fertilizer formulas are used during the growing cycles from year to year. 10-8-10 is the most common formula and produced especially for figs. Trees over 25 years old often are given 14-10-7. Fertilizing is done 3 or 4 times a year. Trace elements are given every 4 years. In some cases, farmers put a few drops of olive oil on the base of the fig. The practice came from Greece where it is said to help prevent splitting and cause a more even ripening time. Hormone spray is also used to help with even ripening time on larger farms.

## Marketing

90% all fresh figs are marketed through JA, the Japanese Agricultural Cooperative and sold fresh. These are all Masui-Dauphine. The remainder includes farms that contract their crop to specific cake companies or commercial processors for jam or wine. There are some You-pick farms that are often run by the JA as well as farmers markets that usually sell figs other than Masui-Dauphine. Fig paste is also sold. Japan also imports figs from Iran, Turkey and Greece. There are over 18 thousand metric tons sold a year in Japan. Aichi ken produces 22.8% of that which was valued in 2003 at US

\$18,719,580. Chiba ken produces 400 metric tons. Wakayama-ken, Fukuoka-ken are also large producing areas.

The JA provides packaging to the farmers for different sizes but almost all packages are based on 500 grams, about 20 ounces.

Figs are sized and sold differently in different areas.

S size (50 to 60 grams) (Chiba)

M size (60 to 80 grams) (Chiba)

L size = 6 figs weigh 500 grams (Aichi)

L size = Chiba 80 to 120 grams (Chiba)

LL size = 5 figs weigh 500 grams (Aichi)

LL size = 120 to 150 grams (Chiba)

LLL size 150 gram + (Chiba)

A grade – good color but some damage or splitting. (Aichi)

B grade – off color. (Aichi)

The average brix is 13 to 17 although standards vary in different prefectures.

A 500-gram box of LL size figs usually retails for 450 yen, \$4.22. Greenhouse grown fruit is marketed separately at double the cost.

#### Related links and References

(Japanese)

<http://masui-farm.com/>

<http://agri.pref.hyogo.jp/nsiweb/web2/nougi/kenpo/khn4415.htm>

<http://www1.fctv.ne.jp/~tanr/fruit/fig/mfig.htm>

[http://www.pref.niigata.jp/nourin/syok/syok1/september/ichijiku\\_index.html](http://www.pref.niigata.jp/nourin/syok/syok1/september/ichijiku_index.html)

[http://www.mpstpc.pref.mie.jp/kids/museum/li\\_n\\_1a.htm](http://www.mpstpc.pref.mie.jp/kids/museum/li_n_1a.htm)

<http://wwwsoc.nii.ac.jp/cssj/link/gateway.html>

<http://www.city.kawanishi.hyogo.jp/event/tokusan/ichijiku/ichijiku.htm>

[http://www.hyogo.info.maff.go.jp/center/hanshin/no\\_1/1-1.html](http://www.hyogo.info.maff.go.jp/center/hanshin/no_1/1-1.html)

[http://www.ja-himawari.com/agri/ag\\_1\\_pro5.html](http://www.ja-himawari.com/agri/ag_1_pro5.html)

<http://diary.note.ne.jp/d/24368>

<http://www.keifuen.com/others.html>

(English)

<http://www.newcrops.uq.edu.au/listing/ficuscarica.htm>

<http://www.hort.purdue.edu/newcrop/morton/fig.html#Origin%20and%20Distribution>

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The 12 Trees project will use this system for fig produce in Kona.

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