

### GROWING INDOORS AND UNDER GLASS

Most citrus can be grown and fruited in greenhouses or solariums. For most varieties cross pollination is not required for trees to set fruit. There is no need for bees.

Your trees will arrive bareroot or in a 4" pot. See "PLANTING IN A CONTAINER" (Page 7)

Trees grow fastest with night temperatures above 70°F. They tend to become dormant below 55°F and may suffer freeze damage below 27°F. Give tree as much light as possible. Fluorescent grow-lights may enhance growth. Midsummer shading in a greenhouse may be necessary to hold temperatures below 100°F.

Prune back leggy branches to keep free full. It will put out new growth where pruned. Keep tree moist. Do not allow it to dry out. Also don't leave the tree in standing water. Frequent misting of the foliage or use of a humidifier is advisable in the winter months in a heated, dry home to prevent leaf drop. More information on plant care is on page 10 through page 13.

Avoid sudden changes in environment. If moving trees indoors to outdoors, or vice versa, place trees in semi-shade for a month. After a period of time, soil elements may become spent. If this occurs, re-pot by partially bare-rooting tree and pruning top back. Remove any large circling roots and replant in fresh planter mix.

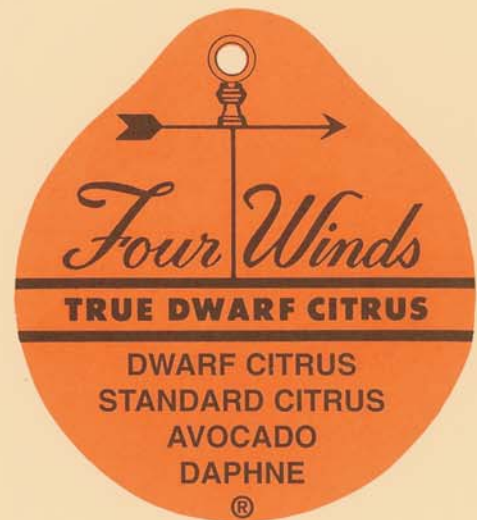


True Dwarf Washington Navel Orange, four years old.



Three-year-old Washington Navel Orange.

## HOW TO GROW



**FOUR WINDS GROWERS**

Box 3538, Mission San Jose District, Fremont, CA 94539

### Floyd C. Dillon

(June 21, 1900 - January 18, 1963)

Floyd Dillon made a Western dream come true—and Western gardening is richer because he did.

Sixteen years ago Mr. Dillon switched careers—from department store executive to amateur gardener with a purpose. He would grow what no one else had produced. He would grow dwarf citrus—dwarf, eight foot trees capable of bearing oranges, lemons, limes, limequats, kumquats, mandarins, tangors, tangelos, and tangerines.

In 1950 we reported the success of his experiment in *Sunset*.

In 1957 and 1958 the *Journal of the California Horticultural Society* recognized his accomplishment by publishing the complete story of the development of Four Winds True Dwarf Citrus. In that story of his search, you get many glimpses of the man.

In his own words; "We have learned a great deal about citrus in the 13 years we have pursued the subject. But looking back, it seems that we have learned even more about men and their dedication to a cause.

"Coming as we did from the field of business, we entered a new world. We can never forget the patience, and the willingness to help, of the professional men in citrus work."

The "we" in his report was more than an editorial "we."

His work is being carried on ably by his son, Donald, who joined with him as a citrus grower in 1953.

(Reprinted with permission, *Sunset Magazine*, March, 1963)

The Four Winds family now includes Don Dillon and his wife, Mary Ann. Fred Real ably served as foreman from 1950 to 1993. Nila Simmons, office manager, came to work in 1966. In 1973 Don Dillon Jr. and Michael Andrade added their considerable talents and enthusiasm to the operation. In 1988, Don's daughter and son-in-law, Mary Helen and John Seeger, commenced operations at a new growing ground in Winters, California. Three generations have been devoted to making garden citrus a happy experience for all of you.

### WHAT ARE TRUE DWARF CITRUS?

Our objective is to produce trees whose ultimate size will be approximately eight feet, in the ground. In patio containers, they will be smaller.

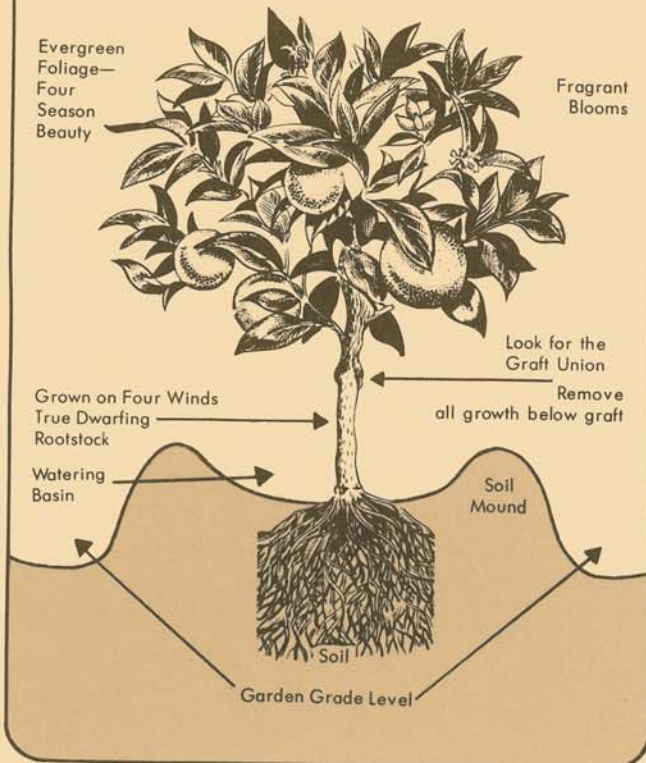
True Dwarf citrus are grafts, **not** self-rooted cuttings. Dwarfing is achieved by using specific cultivar dwarfing root-stocks to which we graft orchard-proven, specific cultivar varieties.

Plant experts rate plant materials by what they call their "F's":

- 1) **Functional.** Compatible with today's outdoor intimate garden living.
- 2) **Form.** Dwarf, occupying 1/4 the space of orchard trees, suited to today's smaller lot size, lower architecture.
- 3) **Four season.** Year-round beauty.
- 4) **Foliage.** Evergreen, very decorative.
- 5) **Flowers** that are attractive and
- 6) **Fragrant**, producing
- 7) **Fruit**—colorful, highly decorative.
- 8) **Flavor-full**, good to eat or drink.

Four Winds True Dwarf citrus fulfill these requirements. You may plant any time of the year, because our trees are container grown. Unlike balled trees, you get all the roots.

### FOUR WINDS TRUE DWARF CITRUS



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### PLANTING LOCATION

**A sunny, wind-free, southern exposure is best.** Don't crowd, for even though the tree is a dwarf it will need room for its eight-foot ultimate size.

**Lawn areas** should be avoided except where the lawn has **good drainage**. See page 5. Provide generous watering basin. Water regularly and thoroughly.

**If adequate growing heat** is a problem, select a site to provide extra heat, as in a sun pocket provided by reflected heat from surfaced areas; house, walls, fence, patio, walks, driveways, overhangs with southern exposure.

**If in doubt, leave the tree in the can.** Place it where you would like it to grow. You can soon tell if the plant is happy. If not, try another spot.

**True Dwarf citrus thrive** when planted in containers. Thus, they are mobile—can be moved around like furniture.

### BEFORE PLANTING

#### Good Drainage is Essential

Assure this by:

1. In the ground, plant in a mound, well above the garden grade (see sketch, page 2).
2. Plant in a raised bed.
3. Grow in a patio container.

**Test your drainage.** Dig a hole 30" deep. Keep it filled with water to saturate the soil. The next day refill it with water. Your drainage is OK if the water level drops 2" in two hours. If the water does not drain, plant in a raised bed or tile out the hole.

A True Dwarf citrus tree is a long-time, permanent valuable acquisition. Insure it through adequate, positive drainage.

#### Soil Requirements

Citrus are grown successfully in soils ranging from adobe to river bottom sand. However, soils rich in humus are best.

### PLANTING IN THE GROUND

**Remove the plant from can.** Note the abundant fibrous root system. Strighten out any circling roots before planting. Cut off and remove any broken roots.

**Conduct drainage test** (see page 5), and plant tree in test hole.

**Backfill the hole** with soil mix containing planter mix blended with an equal part of soil from the hole. Add no fertilizer to the mix; however, do apply some to soil surface after planting.

**Plant the tree high** (see sketch, page 2). The first (upper) roots can be visible. Provide a liberal-size basin for watering around the tree. Stake if necessary.

**Water.** Fill basin slowly. After it has soaked in, fill the basin once more and let it soak in. Soak again in about one week, and weekly thereafter, more or less depending on your soil and climate. **Keep the soil moist.**

### PLANTING IN A CONTAINER

The most popular planter for a five-gallon-size tree is 16 to 20 inches. This provides room for many years of root growth. Smaller containers may be quite satisfactory for two to four years.

**Four Winds True Dwarf** citrus are unique, having root systems that fit readily into containers of average depth.

**Soil mix**—Use a light, well drained planter mix. Add no fertilizer.

**Drainage**—Be sure there are numerous drainage holes in the bottom of the container. Remove the plant from the can.

Place the tree in the container. The graft should be well above the desired soil level. Add prepared soil mix.

Allow two to three inches from soil to top of container for water.

Firm the soil around the root ball.

**Water thoroughly.** Scatter balanced fertilizer as recommended on package and water in once more. Water again in two days. Water every week, or more often if necessary. **DON'T LET THE TREE DRY DRY OUT.**



Don Dillon indicates the graft union of Washington Navel orange on the True Dwarf rootstock

# NOW, 31 VARIETIES OF FOUR WINDS TRUE DWARF CITRUS

YOU CAN NOW HAVE FRESH CITRUS FRUIT THE YEAR-ROUND

## ORANGES

**Robertson Navel** - Best selling winter-ripening variety. Early and heavy bearing. Cultivar of Washington Navel.

**Washington Navel** - California's famous winter-ripening variety. Sweet, seedless fruit ripens in winter/early spring.

**Lane Late Navel** - Richly flavored fruit stays sweet and juicy from March to September! Australian hybrid.

**Trovita** - Spring ripening. Good for coastal areas to desert. Few seeds, heavy producer, excellent flavor.

**Valencia** - Summer-ripening orange. Fifteen months to ripen. Grow your own orange juice.

**Midnight Valencia** - Seedless summer fruit, sweeter than traditional Valencia. For eating or juice.

**Moro** - Deep blood coloration, almost purple-red, even in California coastal areas. Very productive, early maturity, distinctive aroma, exotic berry-like flavor.

**Sanquinella** - A deep blood red juice and rind. Tart, spicy flavor. Stores well on tree.

## MANDARIN ORANGES

**Dancy** - The best-known Mandarin type. On fruit stands at Christmas time.

**Owari Satsuma** - Hardest of all mandarins. Ripens in November - December. Seedless.

**Clementine (Algerian)** - From North Africa. Ripens about a month after Satsuma.

**Fremont** - Bright reddish-orange. Flavor rich and sprightly. Tender and juicy. Heavy bearing winter ripening.

**Kara** - Hybrid. Fruit larger than Satsuma parent. March-June. Juicy, sprightly flavor. Rich color.

**Kinnow** - Spring-ripened fruit lasts for months. Beautiful willow-like foliage.

**Murcott** - In Florida called Honey. Flesh orange colored. Tender, very juicy, rich tangerine flavor. Spring ripening.

## LEMONS

**Eureka** - California classic lemon with abundant crops of commercial quality fruit. Handsome vigorous tree.

**Lisbon** - Another major commercial variety. Upright dense foliage, preferred in desert and inland.

**Meyer** - Most popular in home gardens, prolific fruit is slightly sweeter than other lemons.

**Variegated Pink** - Distinctive green and white foliage and young fruit. Pink fleshed fruit, fuchsia buds.

## GRAPEFRUIT

**Oro Blanco** - Produces sweet fruit even in areas of low summer heat. Huge, intensely fragrant flowers.

**Marsh Seedless** - Best in hot areas. An especially beautiful tree. Good espalier type.

**Rio Red** - Popular red-fleshed sport recently introduced from Texas. Needs summer heat.

**Chandler Pummelo** - This grapefruit relative has sweet, firm, pink flesh. Ripens best in warmer inland areas.

## LIMES

**Bearss Seedless** - True lime of Tahiti type. Fruit larger than Mexican lime. Good in cool areas. Year round.

**Mexican** - (Key lime) Small, sometimes seedy fruit with genuine tropical flavor year-round. Frost sensitive.

**Rangpur** - Not a lime (a sour Mandarin). Dwarf if on Four Winds True Dwarf rootstock. Orange colored fruit at Christmas.

**Kaffir Lime** - Citrus hystrix - aromatic leaf essential for Thai cooking; used in soups, vegetables, curry.

## TANGELOS / KUMQUATS

**Minneola** - Deep reddish-orange colored fruit in winter. Leave fruit on tree for rich tangerine-like flavor in late spring through summer.

**Nagami Kumquat** - Olive size and shape, bright orange fruit, fruits best in warmer areas. Late spring ripening.

**Meiwa** - Sweet round fruit, prized flesh. Candied or in marmalade. Grows best in hotter locations.

**Eustis Limequat** - A Lime X Kumquat hybrid. Year round. Prolific bearing, most areas. Erratic branching.

**Calamondin** - (Kalamansi; Philippine lime) Prolific fruit production. Zesty acid juice. Handsome compact habit.



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**WATERING**

**Good drainage is essential. Keep the soil moist. Don't let the tree dry out.**

**In the ground**, maintain a deep basin as wide as the tree. Citrus need a moist soil and air for roots—avoid airless and soggy soil. Allow time for it to drain between waterings.

**In light, well-drained soil**, water established trees about once a week in dry weather.

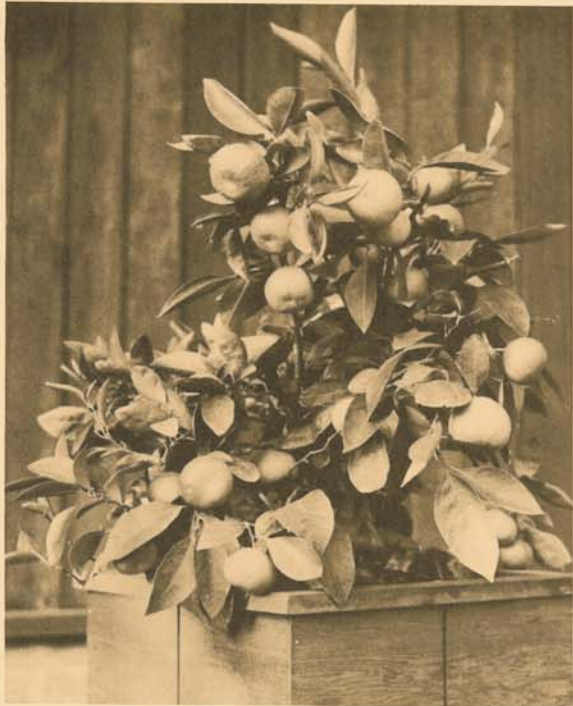
**In heavy clay soils**, the air spaces are tiny. Excess water cannot drain away rapidly. Water deeply every two to three weeks, or more in dry weather. Allow time for it to drain and the surface to dry out, but don't go so far as to let new growth wilt.

**In well-drained containers**, water twice a week in normal summer weather—more often during hot spells—less frequently in the winter.

Newly-planted trees need more frequent watering until they are established.

If new growth wilts or leaves are dull, you are waiting too long to water.

If you observe excessive fruit and leaf drop a few days **after** a heavy watering, the tree became too dry **before** it was watered. In the future, be thorough and consistent. Don't let the tree dry out.



Four Winds True Dwarf Kara Mandarin

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**FERTILIZING**

Citrus are heavy feeders. It is best to use a balanced fertilizer which contains nitrogen, potassium and phosphorus (18-6-12 for example) and trace elements such as iron, zinc and manganese.

Fertilize regularly as directed on the label. However, we recommend fertilizing lightly **all year around**.

Yellowing leaves usually are an indication of lack of fertilizer or poor drainage.

**MINOR ELEMENTS**

**Leaf Feeding**

Citrus trees may develop deficiencies of minor food elements. Zinc, iron and manganese are most effective when sprayed on a new flush of growth. This should be applied when new growth is about two-thirds mature. Iron, zinc and manganese may also be added to the soil in chelate sequestrene form, scattered in the basin with other fertilizers.

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**SUCKERING**

**Know where the graft is on your tree.** Remove all growth below it—it is worthless and takes vitality away from the top. (See sketch and photograph Pages 2 and 7.) This is especially so with younger trees.

**Suckers** are generally very vigorous and thorny and have quite a different leaf than the top. **Remove them** as soon as observed.

**PRUNING**

Trees may be pruned to any desired shape. They will look fuller with occasional pruning to shape leggy branches. Pinching back tips of new growth will help trees to round out. Some trees may develop erratic thorny juvenile growth **above** the graft. If so, cut it back at any time.

Avoid pruning in cold winter months to insure best protection against the cold. Pruning can be done at any other time of year.

### PEST CONTROL

Fortunately, citrus have few insect pests. Since trees have edible fruit, insecticides should be used sparingly and carefully.

Keep tree free from insects by washing dust off foliage occasionally with water. Always read and follow **all** directions carefully on pesticide labels and wear required protective clothing. Measure amount to be used carefully to prevent damage to tree.

There are insecticides available for use on citrus at your local nursery or home-improvement center. Rather than make recommendations, we will tell you what we use for some common insect pests.

Aphids ..... Malathion or light oil (1% solution)

Ants ..... Diazinon bait

Earwigs ..... Diazinon bait

Snails & Slugs .... Snail bait

Scale ..... Malathion or light oil (1% solution)

Red spider mites Light oil or miticide

We never spray if it is above 90° or below 40° or if it is windy.

### MULCHES

Liberal use of mulches will conserve precious water. Less water is needed as evaporation is reduced and weeds are inhibited.

Redwood shavings, fir bark, gravel or crushed rock make good mulches.

To avoid root diseases, keep mulch at least six inches away from the tree trunk.

### FROST PROTECTION

The age, location, variety and condition of the tree, degree and duration of cold determine possible frost damage. Healthy, well-fertilized trees can tolerate brief dips into the upper twenties. Limes and lemons are more sensitive to cold than mandarins, kumquats, and oranges. Anti-transpirant sprays add a few degrees of protection. Landscape lighting, Christmas lights and/or drop cloths add warmth. **Uncover during the day—the covering should not touch foliage.**

### CITRUS PUBLICATIONS

A 32 page booklet, *The Story of Four Winds True Dwarf Citrus*, is available. This includes the history of Four Winds and information on espaliering; growing citrus on trellises. Price \$1.50

We also have available the 174 page HP Book *Citrus: How to Select, Grow and Enjoy* by Richard Ray and Lance Walheim. It is very informative with excellent color photos. Price \$20.00 includes postage and tax.

### COMMON QUESTIONS

**We are most interested in your success with Four Winds True Dwarf citrus trees.**

Here are some frequently-asked questions and our answers:

**Q -How often should I water?**

A - Every week, more or less depending upon weather.

**Q -My tree continues to have loss of bloom. Why do bloom or small fruit drop off? Why do the leaves drop off? Why do leaves drop off, twigs die back?**

A - Correct watering is generally the solution. Trees in a windy location frequently have this problem.

**Q -Why does established fruit drop off?**

A - Orchardists have this problem "June Drop," caused by extremely hot, dry, windy spells in summer, fall — this despite adequate watering. Some "June Drop" is unavoidable. Be sure your trees are well watered. If in container move temporarily to protected, wind-free location.

**Q -My tree grows at rapid rate, has for years, but doesn't fruit — why?**

A - Possibly a rootstock sucker has taken over, especially if it's noticeably thorny. Find bud union—cut off all growth below it (see sketch, page 2).

**Q -Why is the foliage yellow?**

A - Citrus use more nitrogen than most other garden plants. See page 11 for more information.

**Q -How long does it take for fruit to ripen?**

A - This varies greatly: Lemons, limes-6 months, Winter oranges and many other citrus-12 months, Summer oranges, grapefruit-18 months.

Visit our interactive web site for answers to your citrus growing questions. <http://www.fourwindsgrowers.com>