



## Ti Plants for Hawai'i Landscapes

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*Cordyline fruticosa*, ti, is a member of the agave family (Agavaceae). Botanists had previously placed it in the lily family. Ti can add exciting color to a landscape with a tropical theme. Ti seedlings vary in color a lot and selecting them can be a stimulating plant-breeding hobby. Ti varieties can be easily obtained from plant nurseries and garden shops, and some nurseries specialize in ti.

During winter months, when the average temperature is lower, the day length shorter, and rainfall higher, the quality of ti plants is enhanced. A commercial garden could be developed around different types of ti. Many of them have outstanding color. Besides green, the foliage of ti cultivars can be red, orange, purple, or various combinations of these (blue has not yet been found in ti).

Because ti 'John Cummins' (Fig. 1) was often used to breed for orange foliage and did well in the shade, many of the excellent orange cultivars, such as 'Sonny Mathews' (Fig. 2), will grow better and develop more intense color in the shade. The indoor plant rental industry may want to explore the possibility of incorporating some of these in their plant rental inventory. Some of my favorite ti are 'Sonny Mathews', 'Apple Juno' (Fig. 3), 'Hongo Rust' (Fig. 4), 'Iwao Shimizu' (Fig. 5), and an exciting orange variety with no name (Fig. 6).

The red color of many ti will often be more intense in the sun but becomes mixed with a greenish tinge in the shade. Some red ti mentioned in various publications are 'Kauai Rose', 'Kauai Rosebud', 'Maui Beauty', 'Johnny Noble' (Fig. 7), 'Eugene Andre', 'Mahealani' (Fig. 8), 'Kilauea Iki' (Fig. 9), 'Kalama' (Fig. 10), and 'Kalani Koa'. Green and white or yellow variegated ti are also common. 'Dillingham' (Fig. 11), 'Poipu Hula'

(Fig. 12), 'Adele Miller' (Fig. 13), 'Maunakea Snow', and 'Bangkok Gold' (Fig. 14) are examples. Three ti with good color combinations are 'Will's I Gold' (Fig. 15), 'Tricolor' (Fig. 16), and 'Schubertii' (Fig. 17). My all-time favorite ti is 'Tutu Elena' (Fig. 18); it has rich green foliage with a touch of white and pink on the new foliage.

The precise environmental needs of most ti cultivars can only be obtained from research or experience. If we do not develop our cultivars for commercial uses, people in other countries will take them and exploit them for their own benefit.

Common green ti (Fig. 19), 'Onomea' (Fig. 20), and 'Auntie Loo' (Fig. 21) are three of the established cut-leaf types. Because the florists want smaller and flatter leaves and the lau lau producers require large leaves, production methods must differ. Green ti for florists is taken from plants with multiple shoots harvested approximately once a month, and green ti for lau lau producers is taken from single-stem plants harvested much less frequently. More attractive cultivars with the same shelf life as these are needed.

In the past, green ti "logs" were shipped in large amounts to places such as Japan. Today, we have more vigorous green ti varieties with larger leaves and wider-diameter logs. 'Kamehameha' (Fig. 22) is an example ('Emerald Green' may be the same as 'Kamehameha'). This cultivar is attractive for landscape uses. I also like a flat, green-leaf ti with no name (Fig. 23) that I collected from Foster Garden.

Many vigorous dwarf types are available that can be used as ground covers in either shade or sun conditions. Tropical ground covers such as lauae fern, kupukupu

fern, and psittacorum heliconia are high-maintenance because they must constantly be thinned to keep them attractive. I believe that dwarf ti would require less maintenance. Some examples of such dwarf ti are 'Iwao Shimizu', 'Baby Green Spoon' (Fig. 24), 'Cameroon' (Fig. 25), and 'Dwarf Mauna Kea' (Fig. 26). With breeding and selection, many more cultivars can be added to the list of vigorous and attractive dwarf ti ground covers.

'Peter Buck' (Fig. 27) is the only ti that is used to any extent in the landscape industry. With research on the precise environmental needs of the most attractive ti and more educational programs on ti for landscape architects, I believe that more ti will be used in the future. Figure 28 is an example of a homeowner using ti plants in the landscape. If black is your desire, you can use 'Negra' (Fig. 29).

Ti plants were used aesthetically at the Lyon Arboretum, in the gardens of the artists Hirose Tagami and Leland Miyano, and in numerous other Hawai'i gardens, especially in wet areas. Hotels with internal gardens can use ti plants in tropical-theme designs along with other colorful tropical plants. Tourists can then get a feeling of what exciting plant colors are available in the tropics.

Common pest problems of ti are aphids (Fig. 30), green loopers (Fig. 31), spider mites, banana rust thrips, snails and slugs, rose beetles, leafhoppers, mealybugs, *Cercospora* leaf spot (Fig. 32), *Phytophthora* leaf blight (Fig. 33), *Xanthomonas* bacterial blight (Fig. 34), and root-knot nematode. Magnesium deficiency (Fig. 35) and a physiological problem (Fig. 36) that resembles a disease are common problems with green ti. Generally, ti plants require low but constantly available fertilizer nutrients. Research shows that ti plants are vulnerable to fluoride toxicity.



1. 'John Cummins'



2. 'Sonny Mathews'



3. 'Apple Juno'



4. 'Hongo Rust'



5. 'Iwao Shimizu'



6. Exciting orange variety



6. Exciting orange variety



6. Exciting orange variety



7. 'Johnny Noble'



8. 'Mahealani'



9. 'Kilauea Iki'



10. 'Kalama'



11. 'Dillingham'



12. 'Poipu Hula'





13. 'Adele Miller'



14. 'Bangkok Gold'



15. 'Will's I Gold'



16. 'Tricolor'



17. 'Schubertii', a greener form



17. 'Schubertii', a redder form



18. 'Tutu Elena'



19. Common green ti



19. Common green ti



20. 'Onomea'



21. 'Aunty Loo'



22. 'Kamehameha'



23. Flat green ti collected from Foster Garden



24. 'Baby Green Spoon'



25. 'Cameroon'



26. 'Dwarf Mauna Kea'





27. 'Peter Buck'



28. Ti plants used by a homeowner in the landscape



29. 'Negra'



30. Aphid problem



31. Green looper problem



32. *Cercospora* leaf spot



33. *Phthophthora* problem



34. *Xanthomonas* bacteria problem



34. *Xanthomonas* bacteria problem



35. Magnesium deficiency



36. Physiological problem



36. Physiological problem