

NATIVE VERSUS EXOTIC PLANTS

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Much has been written in recent years about the need to plant only “native” species. But the key questions are often overlooked. Is a plant best adapted to where it is “native”? Once urban soils have become homogenized and modified with all sorts of construction debris, is any plant “native” to that site? Are all introduced species “bad”? Shouldn’t **adaptation** of a plant to a site or region be considered instead of just “native” vs. exotic? Just because a plant is “native” to an area, does that mean that the location/conditions are where it grows best? All these are questions that need to be considered.

Our focus should be on plants adapted to a site and with acceptable “manners” relative to the desired purpose. The plant that grows best on a site may or may not be the most desirable and it may be a native or it may be an exotic.

In many instances I feel **requirement** is often confused with **tolerance**. For example, my research that created the micronutrient fertilizer, Micromax, was done with tomato and pyracantha only. That was in 1978. Micromax has been the number 1 selling micronutrient fertilizer in the world for years. How can it be that research data from one vegetable and one woody shrub relates to thousands of species worldwide? I believe it is because **all or nearly all** plants have the same **requirement for optimum micronutrient nutrition**. To study this question I have grown an array of species of plants with a wide array of micronutrient levels. Azaleas were dark green and thrived in a narrow band of micronutrient levels. The same was true for African violet and blueberry. On the other hand, juniper, arborvitae, marigold, and crabgrass were green and attractive over a huge range of micronutrient levels, hundreds of times wider than for the azalea. **BUT all of the test species grew best with the same level and combination.** These data support the view that plants have vastly different degrees of **tolerance**, yet for optimum growth, about the same **requirement**.

Now consider the initial questions raised:

Is a plant best adapted to where it is native? If a plant grows faster, produces more flowers and seeds which germinate readily and establish new plants more rapidly in a new location vs. where it is native to which site is it best adapted? The new location of course! This is exactly the situation with the *Melaluca leucadendron* or punk tree in south Florida vs. its native habitat of Australia. In its native range in Australia, it is not an aggressive, invasive tree. A striking reverse situation exists with *Pinus radiata*, Monterey pine, native to the California coast where it grows at a moderate pace and is not especially vigorous. Yet in New Zealand and South Australia, Monterey pine grows vigorously and creates magnificent timber.

A study of fossils reveals that many plants were “native” to locations far removed from where they are currently “native”. Conditions change and with the change plant species shift or adapt.

Just because a plant is “native” to a site **does not** necessarily mean that site and conditions are optimum for its growth.

Once urban soils have become homogenized and modified with construction debris is any plant “native” to that site? No, other than crabgrass and then only because it has, perhaps, the widest **tolerance** of all species. On the other hand, many species have such a wide **tolerance** that they can grow reasonably well under such adversity.

For example, southern wax myrtle, *Myrica cerifera*, is native over a wide range of conditions throughout the southeast USA. It is native to the almost pure sand soils of the Ocala National Forest in north central Florida, to stream banks where flooding frequently occurs, to alkaline soils along limestone outcroppings and acid soils along the swamps of southern Georgia. This is a species with a huge **tolerance** for growing conditions, **and** it does well in nearly all urban conditions.

In order to have successful plantings on highly disturbed urban sites, we must look to plants with a wide range of tolerance. Along with wax myrtle, one of the most tolerant and adaptable shrub species that works well is *Nandina domestica*, native to China. *Nandina* would be at the very top of my list of broadleaf evergreen shrubs with many attractive qualities **and** good manners—native or non-native. *Nandina* has attractive foliage, flowers, and fruits, is nearly disease- and insect-free, produces few invasive seedlings or rhizomes, is easy to maintain, and grows well in a huge range of conditions.

Are all introduced species “bad”? Absolutely not. Nandina, lacebark elm, Chinese pistache, *Pittosporum tobira*, and on and on are introduced species that are well adapted to much of North America that have good manners and make good “citizens”.

On the other hand, melaluca, tree of heaven, Japanese honeysuckle, kudzu vine, and many other **species are too well adapted**: grow too vigorously and reproduce too freely so as to be undesirable in the view of current day society.

The bottom line is that just because a plant is growing “native” under certain conditions, **does not** mean that it is at its peak or optimum. It simply means that it is able to **tolerate** the current conditions and survive. Further, relative to the evolution of the species and the changing local site conditions or site conditions of a much larger region, the species may be relatively “new” and will become more vigorous and aggressive in the future as conditions become more favorable or it may be on its way out because it has reached its limits of tolerance and will eventually become extinct. At this point in time no one knows. However, we get a “feel” for the answer from various experiences. Because of the positive plant response and adaptation to such an array of conditions, southern wax myrtle appears to be still expanding its “native” environment. On the other hand, black cherry, *Prunus serrotina*, appears to be less and less tolerant to environmental conditions and may become extinct in another century or two.

In my view, it would be simplistic and foolish to plant only natives. Likewise, it would be foolish to plant only introduced species. Our focus should be on species **adapted** to the site and with acceptable manners regardless of where they happen to be “native’ at a particular time in the glob al picture.

Carl Whitcomb is author of ‘Know It and Grow It: a guide to the identification and use of landscape plants’, 820 pages, 8.5 by 11 format, hard cover, over 2000 black and white photos of most of the woody plants, native and exotic, that can be grown east of the Rocky Mtns. \$60.00 + shipping.

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