

A Public Services Division Department

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These purplish leaf spots on ixora are due to P and K deficiencies. A cold snap will also enhance the appearance of these symptoms.



The yellowing of leaves is termed chlorosis and indicates a high pH root zone (alkaline soil). Treatment with iron and manganese supplements may help.

Ixora Shrubs are Litmus Test for Several Soil Nutrient Problems:

Reddish-purple spots on plants aren't always an indication of disease.

With certain plants, different ailments or pests cause remarkably similar symptoms. This is referred to as mimicking symptoms and can lead to a who dunnit mystery. This is fun when you know the plants and the confusing possibilities. Especially when there is a budding (or experienced) diagnostician that has been through the basics and thinks they know it all.

For example, take the reddish-purple leaf spots on the older leaves of ixora which for all the world resemble a fungal leaf spot disease or cold injury. These spots resemble the leaf symptoms that occur on red tip photinia and Indian hawthorn, *Rhaphiolepis* spp., shrubs when they are infected by the entomosporium leaf spot fungus.

Spraying the ixora with fungicides will not help. With ixora, these spots are caused by MACRO-nutrient deficiencies. Dr. Tim Broschat, University of Florida at Ft. Lauderdale, has found this ailment occurs in calcareous, sandy "soils", (sound familiar?) typical of my yard and most others in Naples. His research showed that when **BOTH** phosphorous (P) and potassium (K) were missing, the spots occurred. He also reported premature leaf drop and thus, thin looking hedges. There may be a significant reduction in flowering as well. How to avoid this? Test your soil first. If it is alkaline and mostly sand, don't plant this shrub! If it is too late, and you have inherited a landscape of ixora as I have, there are two choices:

1) Add the missing nutrients! But, avoid using soluble nitrogen based fertilizers and a lot of nitrogen in an attempt to "push" growth. The new growth will need more of the nutrients that are not available. Thus, more red spots and/or chlorosis, a yellowing of the leaves due to iron/manganese deficiency (another common ailment with ixora), will appear. Use slow release nitrogen based fertilizers. The same thing goes for K. Because K isn't retained in a sandy "soil" root zone, use slow release K fertilizer. Dr. Broschat has recently recommended a slow

release fertilizer with a ratio of 8N-4P-12K-4Mg plus other micronutrients for all plant material, turf and ornamentals! A slow release fertilizer in the range of 9-11-11 plus iron and micronutrients should satisfy ixora requirements. Apply enough fertilizer (requires some math) so that you give older plants 2 ounces of nitrogen per 100 sq. ft. of root zone. For the first two years with younger plants, use 4 ounces of actual nitrogen per 100 sq. ft. of root zone area. That would be a little under 1.5 cups (12 ounces) of 9-11-11 fertilizer for the higher rate. Apply 3 times per year, say in February, May and August. Don't forget to mulch your hedges this will eventually contribute to the build-up of organic matter in the root zone and improve nutrient availability. More organic matter will also reduce nematode populations that can also plague older varieties of ixora. Often, the plants were grown in containers too long. This leads to a compromised root system composed of girdling roots that are not very efficient. Examine the roots before you buy!

Chlorosis: Iron and manganese chlorosis can be alleviated by soil applications of Sequestrene 138 or foliar applications of Sequestrene 330 have helped in some situations. In another report, manganese sulfate plus Hamplron 845 (a DPS-iron chelate) helped some but not all plants.

2) How about a face lift? Ixora are planted *ad nauseum*. If the ixora hedge is struggling replace those sorry looking ixora with some of these flowering shrubs: 'Petite Pink' oleander; 'Imperial Blue' plumbago; or Mexican bluebell also called false-petunia (*Ruellia tweediana* 'Purple Showers'- the only sterile variety); yesterday-today-and-tomorrow (*Brunfelsia grandiflora*) or a native plant, Jamaican caper (*Capparis cynophallaphora*). There are a lot of new plants coming into the garden centers. I must admit that I recommend hibiscus with the "buyer beware" that they are a high maintenance plant, but the flowers are worth it! Do some reading on these new plant varieties or species before buying huge quantities. Diversity makes for a more exciting landscape!

To learn more about different shrubs, get a copy of, 'Your Florida Guide to Shrubs' by University of Florida Drs. Ed Gilman and Robert Black. It is available at Barnes and Noble or <http://www.upf.com>.



A hedge of ixora in peak bloom compliments the spindle palms in this well-balanced landscape design.

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