

## Why is there purple veining of tomato leaves?

**Answer: Based on the verbal description and not actually examining the plant, the following descriptions of Nitrogen and Phosphorus deficiencies seem most likely. Phosphorus deficiency also causes a backward curl of the leaf and a strong, dull purple tint.**

**Nitrogen.** The chlorotic symptoms (see Figure 4) shown by this leaf resulted from nitrogen deficiency. A light red cast can also be seen on the veins and petioles. Under nitrogen deficiency, the older mature leaves gradually change from their normal characteristic green appearance to a much paler green. As the deficiency progresses these older leaves become uniformly yellow (chlorotic). Leaves approach a yellowish white color under extreme deficiency. The young leaves at the top of the plant maintain a green but paler color and tend to become smaller in size. Branching is reduced in nitrogen deficient plants resulting in short, spindly plants. The yellowing in nitrogen deficiency is uniform over the entire leaf including the veins. However in some instances, an interveinal necrosis replaces the chlorosis commonly found in many plants. In some plants the underside of the leaves and/or the petioles and midribs develop traces of a reddish or purple color. In some plants this coloration can be quite bright. As the deficiency progresses, the older leaves also show more of a tendency to wilt under mild water stress and become senescent much earlier than usual. Recovery of deficient plants to applied nitrogen is immediate (days) and spectacular.

**Phosphorus.** These phosphorus-deficient leaves (see Figure 5) show some necrotic spots. As a rule, phosphorus deficiency symptoms are not very distinct and thus difficult to identify. A major visual symptom is that the plants are dwarfed or stunted. Phosphorus deficient plants develop very slowly in relation to other plants growing under similar environmental conditions but without phosphorus deficiency. Phosphorus deficient plants are often mistaken for unstressed but much younger plants. Some species such as tomato, lettuce, corn and the brassicas develop a distinct purpling of the stem, petiole and the under sides of the leaves. Under severe deficiency conditions there is also a tendency for leaves to develop a blue-gray luster. In older leaves under very severe deficiency conditions a brown netted veining of the leaves may develop.

***Above information take from:***

***A Companion to [Plant Physiology, Fourth Edition](#) by Lincoln Taiz and Eduardo Zeiger***

***Topic 5.1***  
***Symptoms of Deficiency in Essential Minerals***  
***Wade Berry, UCLA***

There might be little you can do at this point in the growing season (first of September) to effectively improve the health of your tomato plants. You can side dress the plants with a balanced fertilizer, such as 10-10-10, according to product instructions. But even if the plants rebound and become more vigorous, it is unlikely that fruit will have time to develop before cooler temperatures set in.

More importantly, have your soil tested before next year so that you can amend the soil and have a better tomato crop next year. Master Gardeners recommend getting your soil tested at the Clallam County Conservation District. Instructions for collecting and submitting a soil sample can be found at [http://clallam.scc.wa.gov/2010\\_Soil\\_Testing\\_Brochure.pdf](http://clallam.scc.wa.gov/2010_Soil_Testing_Brochure.pdf) or by calling the Conservation District at (360) 452-1912 ext. 109.

Thanks for calling KONP with your question.  
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