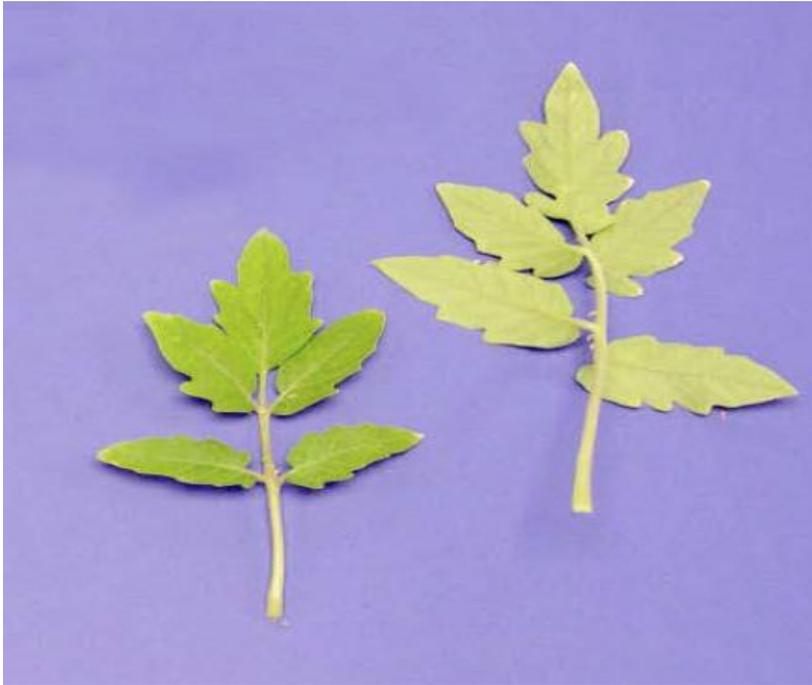


Deficiencies and disorders- Tomato



Nitrogen :

Deficiency Symptoms :

Restricted shoot growth and spindly appearance of plants. Older leaves at first turn yellowish green; under severe deficiency, the whole plant becomes pale green. The leaflets are small, erect and with pink veins which are more clearly noticeable on the underside. Leaves die prematurely. Flowers buds turn yellow and fall off. Fruits when formed, remain small.

Corrective Measure :

Foliar spray of urea 1% twice at weekly interval.



Phosphorus

Deficiency Symptoms :

Plants look lush blue-green or purplish in colour. The stems very thin and stunted while the roots were brown with restricted development of lateral branches. Mature leaves to be small with down curled leaflets. The oldest leaves, having initially purplish tints and scorched areas, later became yellow with purple veins and died prematurely.

Corrective Measure :

Foliar spray DAP 1% twice at fortnightly interval.



Potassium

Deficiency Symptoms :

Yellowish spots in the margins of new leaves which later spread over the leaf surface and subsequently turned brown, starting with the older leaves. Plants were stunted, hard and chlorotic. Leaves first become grey at the margin and later interveinally. The tips and margins underwent scorching and turned upwards. K deficiency symptoms appeared first in the oldest leaves. Leaves remained small and plant growth restricted. Chlorosis and necrosis then spread to younger leaves with defoliation of yellowed and curled older leaves.

Corrective Measure :

Foliar spray of K_2SO_4 1% thrice at weekly interval.



Calcium

Deficiency Symptoms :

The plants became flaccid; dead spots appeared on the upper stems and the growing apex died. Upper leaf colouration initially was darker green, but, later turning yellow at the edges and died. Scorching and die back of the main stem, strong curling of the leaves inwards and downwards. Fruits showing blossom end rot were found to ripen less rapidly. Blossom end rot is closely associated with Ca deficiency of the fruit. Sunken region of few millimeters in width, near distal end of youngest fruit.

Corrective Measure :

Soil application of CaSO_4 1 to 2 kg/acre or Foliar spray of CaCl_2 0.5% thrice at fortnightly interval.



Magnesium

Deficiency Symptoms :

Chlorosis of foliage. Interveinal areas became yellow or greenish yellow while leaf margins remained green. Mg deficiency starts as interveinal yellowing at the leaf margins on older leaves, which later become brown and withered interveinal yellowing and necrosis. Sunken necrotic spots which appeared shiny from back of leaf appear the first symptoms of Mg deficiency as discoloration of the margins. Yellowing progressed from base to the top of the plant.

Corrective Measure :

Foliar spraying of 2% $MgSO_4$ twice at fortnightly interval or soil application of dolomite at 2 ton/ha or magnesium sulphate at 20 kg/ha.



Sulphur

Deficiency Symptoms :

Symptoms are somewhat similar to nitrogen deficiency. Younger leaves are affected. Lower leaves yellowish green while stems were hard and woody. Older leaves developed necrosis at tips and margins with development of small purple spots between the veins. Young leaves stiff and curled downward.

Corrective Measure :

Foliar spray of CaSO_4 1% twice at fortnightly interval or gypsum @ 50 kg/ha.



Boron

Deficiency Symptoms:

Yellowish of the tips of the leaflets oldest leaves with prominent pink veins. Yellow spots then enlarged. Yellowing of the tips of lower leaves and brittleness of the leaflets and petioles. Yellow leaflet tips became dry and brown. Leaf margins remained free from such browning. Severe deficiency led to stiff, thick and shortened stems, death of the growing points and development of yellow, brown and purple areas on leaf. Uneven ripening and development of corky pits in fruits.

Corrective Measure :

Foliar spray Borax 0.3% twice at fortnightly interval or soil application Borax 20 kg/ha.



Copper

Deficiency Symptoms :

Reduction in growth, curling of leaf upwards and inwards with severe scorching. Poor root development. Overall grey-green colour followed by chlorosis of lower leaves. Chlorotic leaves subsequently became bronzed and later brown with development of necrosis at the margins and blackening of veins. Margin and tips of leaves wilted while in the case of older leaves, there was a stiff rolling up of margins. Leaves were found to be blue-green in colour. Leaf number, leaf size reduced.

Corrective Measure :

Foliar spray of 0.5% CuSO₄ twice at fortnightly interval.



Iron

Deficiency Symptoms :

Leaf veins remain green interveinal portion turns yellow young leaves small but not deformed.

Corrective Measure :

Foliar spray of 0.5% FeSO_4



Manganese

Deficiency Symptoms:

Reduction in leaf size and development of interveinal orange-yellow mottling over the tip. Mottling spreads over the whole leaflet turn yellow while the veins remain green. Numerous small, dark brown, necrotic spots with chlorosis in leaflets of very young leaves. Lamina becoming narrower and longer. Root system reduced than normal plants.

Corrective Measure :

Foliar spray of MnSO_4 0.5% twice at fortnightly interval.



Molybdenom

Deficiency Symptoms :

Mottling in lower leaves followed by scorching of margins and inrolling. Extensive flower drop older leaves scened and dropped off prematurely with death of the growing point.

Corrective Measure:

Foliar spray of NaMO_4 0.05% twice at weekly interval.



Zinc

Deficiency Symptoms :

Deficiency appears first on older leaves in the form of interveinal chlorosis. Inhibit both vegetative growth and fruit production. Shortened internodes, diminutive leaves with undercurling of leaflets, epinastic curvature of leaves and chlorosis. Oozing out of cell contents as a brown fluid from the leaves.

Corrective Measure :

Foliar spray of ZnSO_4 1% twice at fortnightly interval.