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| Nutrient | Symptoms |  |
| Nitrogen | Plants remain stunted.  Older leaves or whole plants turn yellowish green, sometimes all leaves become light green and chlorotic at the tip .Leaves die under severe N stress,  all leaves are narrow, short, erect, and lemon-yellowish green except for young leaves, which are greener  Entire field may appear yellowish, | image107  Image |
| Phosphorus | Stunting,  reduced tillering,  older leaves are narrow, short, very erect, and dark green,stems are thin and spindly,  reduced number of leaves, panicles, and grains per panicle.  Young leaves appear to be healthy but older leaves turn brown and die.Red and purple colors may develop in leaves if the variety has a tendency to produce anthocyanin  (Leaves appear pale green when P and N deficiency occur simultaneously) | http://agropedia.iitk.ac.in/sites/default/files/Phosphorous.jpg |
| Potassium | Dark brown necrotic spots appear first on the tip of older leaves, then along the leaf edge, and finally on the leaf base.  Upper leaves short, droopy, and dark green.  Lower leaves may bend downward.  Early leaf senescence, leaf wilting, and leaf rolling when temperature is high and humidity is low.  Increased incidence of diseases.  (Leaf symptoms of K deficiency, particularly the yellowish brown leaf margins, are similar to those of [tungro](http://www.knowledgebank.irri.org/RiceDoctor/information-sheets-mainmenu-2730/diseases-mainmenu-2735/tungro-mainmenu-2773.html" \t "_parent) virus disease. Unlike K deficiency, tungro occurs as patches within a field, affecting single hills rather than the whole field.) | image89 |
| Calcium | White or bleached, rolled, and curled tips of youngest leaves-  necrosis along the lateral margins of leaves-old leaves turn brown and die-stunting and death of growing points | Image |
| Magnesium | Pale-colored plants with orange-yellow interveinal chlorosis on older leaves and later on younger leaves.  Chlorosis progresses to yellowing and finally necrosis in older leaves in severe cases.  Leaf number and leaf length are greater in Mg-deficient plants, and Mg-deficient leaves are wavy and droopy due to an expansion in the angle between the leaf sheath and leaf blade  reduced number of spikelets  reduced grain quality  (Fe toxicity may be more pronounced where Mg is part of multiple nutrient deficiency stress involving K, P, Ca, and Mg.) | Image |
| Sulphur | The whole plant turn yellow or pale green .  Chlorotic young leaves with necrotic tips.  Lower leaves do not show necrosis.  High seedling mortality after transplanting.  S-deficient rice plants have less resistance to adverse conditions  (S deficiency is often not properly diagnosed, as foliar symptoms are sometimes mistaken for N deficiency) | https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcRS0WTeY-hzESSqGAg7kH1Y7d2sKO2IwktP-xf3RD63CcTXJjO6CQ |
| Zinc | Dusty brown spots on upper leaves of stunted plants.  Increased spikelet sterility.  Chlorotic midribs particularly near the leaf base of younger leaves.  Leaves loose turgor and turn brown. Blotches and streaks appear on lower leaves which, enlarge, and coalesce.  White line sometimes appears along the leaf midrib.  Symptoms appear between two to four weeks after transplanting  . | Image  https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRDxxc-ZBdiVbZ_Q0g5oayhyR0nyPHQpOiAjuYa_-YMT3mu5VY7 |
| Manganese | Pale grayish green interveinal chlorosis from leaf tip to base,  necrotic brown spots develop later and leaf becomes dark brown,  newly emerging leaves short, narrow, and light green in colour,  plants shorter with fewer leaves and smaller root system at tillering.  ((Affected plants are more susceptible to brown spot disease.  Mn-deficient rice plants are often deficient in P  In soils where both Mn deficiency and Fe toxicity occur, Mn-deficient rice plants contain a large concentration of Fe, and may also show symptoms of bronzing) | Image  Image |
| Iron | Interveinal yellowing-  chlorosis of whole leaves- entire plants become chlorotic | image83 |
| Copper | Either side of midrib of leaves with chlorotic streaks-,leaf tips with dark brown necrotic lesions-,bluish green leaves appearing chlorotic near leaf tip-  needlelike appearance of new leaves-reduced tillering and  increasing spikelet sterility resulting in many unfilled grains | Image |
| Boron | Tips of emerging leaves are white and rolled-Death of growing points, but new tillers continue to emerge  Plants unable to produce panicles if affected by B deficiency at the panicle formation stage  (The rolling of the emerging leaf tips, which are white in color is similar to Ca deficient plant.) | https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcRO1yrPL4slYfaE05eInVkInHfp3LPeK3Ab9_aa5uxwtwS67pKavg |
| Si | Soft and droopy leaves and culms.  Reduction in the number of panicles and filled spikelets per panicle  Smaller grain yields.  Lodging  Plants become susceptible to pests and diseases. | Image |

**Deficiency diseases in Rice**