

9. Nutrition

Nutrient application needs to be balanced to achieve early vigorous vegetative growth followed by heavy flowering and fruit set.

Before we get into the detail of nutrition, it is worthwhile recapping on soil types and pH, as these have a bearing on how much nutrition your plants will take up from the soil.

Understanding your soil

Tomatoes will grow in a wide variety of soil types and across a wide range of pHs although they prefer a pH between 5.5 – 6.8.

In order to understand your soil type it is essential that you have an understanding of what pH is and how it may affect the nutrition of your tomatoes.

The term pH defines whether your soil, is acid or alkaline. The pH scale runs from 0 – 14 with 7 being neutral. Numbers below 7 indicate acidity and above 7 alkaline. Most soils have a pH in the range 4.5 to 8.5. Tomatoes enjoy a slightly acid soil usually with a pH around 6.5.

The availability (uptake of nutrients from the soil by the plant) of nutrients is affected by soil pH. This is amply demonstrated by the chart below. Where the bar is thick in the chart, it shows that the nutrient is abundantly available,

and less so as the bar thins. If we examine the chart closely, it is obvious that most nutrients have greater availability at pHs around 5.5 – 6.

pHs can be adjusted: lime will make the soil more alkaline and whilst making the soil more acid is more difficult, usually sulphate-based fertilisers (e.g. sulphate of ammonia) and acidic organic material will help.

Testing soil pH can be done simply by mixing soil and water and testing it using a pH meter, swimming pool testing kit or litmus paper.

Soil type

Soil type will determine how much nutrient your soil can hold. Sandy soil types hold very little nutrient (as they have very little organic matter), whilst clays hold greater amounts. Soil type will therefore determine the amount of fertiliser you will require for your tomatoes.

Sandy soil types will require a higher rate of fertiliser as well as more frequent applications because fertilisers get leached out in sandy soils. In other words, when water is applied, because sandy soils are so porous, the water runs straight through taking with it the nutrients that are required by the plant.

In these soil types, small amounts of fertiliser should be applied weekly or every second week, the type depending on the growth stage of the plants. Whilst clayish soils or soils high in organic matter do not require such frequent fertilization and generally require less nutrient altogether, small amounts frequently will still be effective.

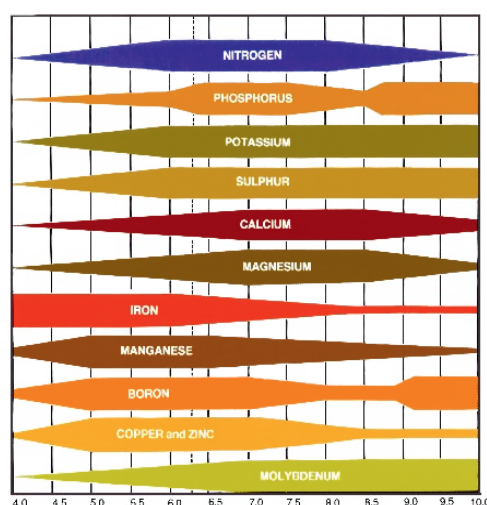


Fig 1: The effect of soil pH on plant nutrient availability