



BENEFITS OF SUPPLEMENTING SOIL APPLICATION OF FERTILIZERS WITH FOLIAR APPLICATION

Plants draw most of their nutrition from the soil through the root system. Soil is a natural medium of plant growth and exhibits diverse physical, chemical & biological properties.

These properties are influenced by the parent material, climate, vegetation & topography of the location. These properties sometimes place restrictions on the uptake of nutrients.

Therefore, it is advisable to supplement soil application of fertilizers with foliar application, as plants can exchange materials with their environment through pores on the leaf surface.

The following Q&As will provide required details to help the growers to take care of this aspect:

What are the limitations in soil application of fertilizers?

Limitations in soil application of fertilizers are as below,

- 1) Nutrients cannot be fully accessed by plant roots as the nutrients move laterally beyond the reach of these roots.
- 2) Nutrients are fixed in the soil into unavailable forms or insoluble compounds.
- 3) Nutrients are lost through leaching & volatilization.
- 4) Competition from microbes & weeds for nutrients can reduce availability.

What are the ways of getting over these limitations?

Following the 4R principle of Right Time, Right Place, Right Quantity & Right Source in fertilizer application, supplemented with Foliar application in a standing crop at critical stages, can go a long way in tackling these limitations.

What are the benefits of an integrated approach of combining soil application with foliar application?

1) Fixation of nutrients is greatly reduced; 2) Competition from weeds & microbes is avoided; 3) Utilization of fertilizers by the plants is higher; 5) Loss of nitrogen by leaching is reduced; 6) Phosphates are better utilized; 7) Foliar application facilitates use of multiple nutrient elements which are readily absorbed by leaves being in solution form; 8) Foliar application is very effective for the application of minor nutrients like iron, copper, boron, zinc and manganese. 9) Foliar application facilitates the use of compatible pesticides along with nutrients resulting in lower application cost.

What are the salient features of foliar application?

- 1) It eliminates the effects of soil pH on the availability of nutrients.
- 2) It facilitates swift availability of nutrients to the crop.
- 3) It provides nutrition if roots are locked out.
- 4) It is a proven efficient method of curing plant nutrient deficiencies and boosting plant development at specific physiological stages.
- 5) It is an effective method for correcting soil deficiencies and overcoming the soil's inability to transfer nutrients to the plant under low moisture conditions.
- 6) It is the most efficient way to enhance plant health & yield. Tests have shown that foliar feeding can increase yields from 12% to 25% when compared to conventional fertilization.
- 7) It is more effective and less costly.