

## **Pest and Disease Management in Plant Propagation**

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### **A SHORT REVIEW**

Diseases are a major constraint in the propagation of certain crop species. Losses have been so high that it was uneconomic to propagate some popular lines. With all the modern pesticides, technologies, and expertise, the problem has not been eliminated. But with an integrated approach, losses have been successfully reduced to non-significant levels in a number of crop species.

The actual crop loss due to pests and disease is difficult to estimate in the nursery situation. The high number of varieties propagated by cuttings vary in susceptibility to the endemic pests and diseases. In order to minimise losses, recognition of the value of maintaining strict hygiene procedures during all stages of taking and rooting cuttings must be made. It is easier to prevent attack by disease organisms than to try to stop their progress once established. From a disease attack where hundreds of thousands of cuttings are involved, losses can be considerable. Efforts to conduct propagation operations under clean, sterile conditions are of no avail, unless all steps of the operation are included, i.e.; the cutting material, rooting media, tubes/trays, working area, tools, rooting benches, water and irrigation systems, etc. It should be stressed that unless all agronomical procedures are followed correctly, chemicals alone will be of little use in the management of pests and disease.

It should be noted that modern intensive systems of plant propagation have frequently aggravated or provoked disease problems by being grown in "protected" environments, e.g., plastic covered houses, which create a warm and humid atmosphere conducive to the establishment and spread of a number of diseases.

Secondly the cuttings are stressed until they have rooted properly, and in this phase, they are more susceptible to diseases.

It is not easy to detect and correctly identify the pathogen(s) involved in various phases of propagation. At times batches of certain crops are unaffected by disease and hence no effort is made to protect the crop from disease. In some cases by the time the disease is detected and diagnosed, it would have spread significantly and hence apart from losing the cuttings, valuable time is lost in cleaning the propagation house as well.

Even with the present knowledge of diseases, control measures and new fungicides, it does not mean that the problems have been solved. However, by following an integrated approach, a lot can be achieved. This would mean that all the correct agronomical procedures are adhered to, the susceptibility of the crop to the pests and diseases are known and appropriate spray programs are to be used as protectants where necessary.