

The Root Rot Disease of Poinsettias

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The approaching season for marketing finished poinsettia plants brings to mind the losses wrought in this crop by the root rot disease caused by *Thielaviopsis basicola* (Berk & Br.) Ferr., *Pythium* sp. and *Rhizoctonia* sp. acting separately or in combinations. Although root rot of poinsettias is feared less by growers today than it was only a few years ago, it nevertheless, still poses a threat to successful poinsettia culture. Fortunately, however, there is enough known about this disease so that the grower can set up safeguards against the inroads of one or more of these root rotting organisms and thus help to insure the crop against inordinant losses. These safeguards involve (1) exclusion of the rot promoting fungi through the use of healthy cuttings on the one hand and through the employment of soils and plant containers rendered free of the pathogens of root rot by steam or chemical sterilization on the other; (2) eradication of the pathogens, once they have appeared, or at least, rendering them innocuous by utilizing drenches containing fungicides; and (3) by manipulation of the environment of the rhizosphere in such a manner that the pathogenic organisms are inhibited and thus their disease potential diminished without upsetting normal or near normal development of the poinsettia plant.

Control of poinsettia root rot by avoiding its occurrence through the exclusion of the causal organisms from the premises constitutes an ideal situation that may never be achieved completely. Nevertheless, every reasonable effort should be exercised in order to approximate such an ideal. Hence, it is important to propagate from healthy stock plants and to enforce a campaign for sanitation and cleanliness in and about the establishment. The average grower today is fully cognizant of this, and therefore, a rehearsal of stepwise procedures need not be entered into here.

Let us assume for the moment, however, that we have a situation where incipient root rot of poinsettias is evident despite the fact that earlier, reasonable exclusionary precautions were exercis-

ed. Are there procedures which, if put into practice by the grower, will enable him to have ordinary success with his crop? The answer is yes. Fortunately, these procedures are well known by most poinsettia growers since they have been publicized repeatedly during the past 3 to 5 years; they are reiterated here merely as a reminder.

Root rot of poinsettias can be held in check by adjusting and maintaining the soil mixture at pH 4.5, or slightly above, without disturbing normal or near normal plant performance. Root rot may also be contained by growing the poinsettia plants at night temperatures in excess of 65°F. and with day temperatures of 70° to 80°F. Frequently, however, high temperature makes for difficult crop management under conditions of uncontrolled day length since pre-season blooming or shoot elongation or both may be encouraged. These objectionable features can be largely overcome by artificial manipulation of the day length. Thus, we have at our disposal two reasonably effective checks against losses from root rot; the better solution is reached, however, when these two practices are combined—pH adjustment and temperature control.

Fungicidal compounds such as ferbam, captan or Terraclor may be incorporated with the potting soil at the time the soil mixture are being prepared, or they may be applied as drenches to the growing plants at a later date. It is usually better to rely on mixtures of different fungicides, however since the compounds are compatible together and since combinations ordinarily prove effective over a broader range of fungus species than does only one compound used alone.

Another important cultural practice, and especially during the last weeks of plant growth, is the maintenance of proper soil moisture levels. Many plant species that suffer root damage, from one cause or another, are usually further damaged when subjected to excessive soil moisture; hence, strict attention should be paid to the preparation of soil mixes that will allow good drainage and subsequently to proper watering in order to avoid water-logged soils which encourage root asphyxiation on the one hand and provide a propitious soil environment for certain root rotting fungi (*Pythium* sp.) on the other.