Diseases of Ornamentals - 1953 - 1954

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Like death and taxes, diseases of plants seem always to be with us--many more diseases than can be mentioned here. As always, the weather has played an important role, and the late fall weather favored an unusual amount of trouble with Botrytis diseases; particularly petal rot on chrysanthemums and a few other crops.

Under glass, control of Botrytis can be, and has been, satisfactorily achieved by timely use of heat and adequate ventilation, but in the open or in cloth-houses present control methods leave much to be desired. The difficulty is not that zineb materials (Parzate, Dithane) fail to control Botrytis when properly applied, but that repeated spraying leaves an objectionable residue. By keeping the concentration down to 1/2 or 3/8 pound of Parzate powder or Dithane Z78 by using just enough spreader to make the droplets flatten out, and by applying as a fine mist, the deposit is kept at a minimum, but still it can be seen. By using the liquid type at 20 fluid ounces (1 1/4 pints) of Dithane D14 or Parzate liquid, plus 4 ounces of zinc sulphate crystals, plus spreader, some growers find the control excellent and the deposit very slight. We still hope to find something with less deposit, however.

Azalea Root Rot

Many cases of azalea leaf tip burn and leaf fall have been brought to our attention this season. In some cases the plants have either died or might better have died. While in some cases the trouble seems to be associated with a root rot from which we have isolated a fungus, Phytophthora, which is known to be capable of causing root rot, we are not certain that this is always the basic cause. The fact that in most cases the trouble has occurred in unsterilized old peat and not often in new peat and almost never in sterilized old peat certainly suggests that some root parasite is involved. Until we gain evidence to the contrary, then, we suggest that all peat, new or old, be sterilized for azaleas, that the propagating benches be sterilized, and that the benches be steamed between crops if at all possible. Of course, the potting benches, pots, tools, and so on should be sterilized, too.

Poinsettia Root Rot

A few cases of trouble in the poinsettia root rot control program have been brought to our attention. The fact that a complete sterilization program will give control has been well borne out, but trouble has come where a zineb or ferbam drench has been relied on for bench treatment.

The trouble is that although these materials are highly effective against Thielaviopsis, they are not adequate against another fungus, Pythium, which may grow up into the pots and cause serious root rot. If the empty benches can be thoroughly steamed this trouble is eliminated. If this is impossible, try the following: Clean out the benches thoroughly and let them dry for a couple of weeks. Paint the boards with copper naphthenate (Cuprinol) or, if this seems too expensive, wash down with copper sulphate solution (about 1 pound crystals to 10 gallons water). Fill with new cinders and drench with zineb or ferbam, 2 lbs. per 100 gals. The reasons for these treatments are that Pythium is very sensitive to copper while Thielaviopsis is not copper-sensitive but is sensitive to the carbamates. Copper naphthenate is first choice because it is persistent and also is the best known preservative for the bench boards. We are still looking for a fully effective single drench treatment for both Pythium and Thielaviopsis.

Chrysanthemum Bacterial Blight

The bacterial blight of chrysanthemums has been noted in more establishments this year but the loss in individual ranges has not been too serious in most instances. Observations during the present season have indicated that symptoms of blight may show a great deal of variation, from "typical" blighting and rotting of the stems to scorching and drying of some of the leaves with no obvious symptoms in the stem. It seems possible that some of the peculiar leaf-drying conditions which have been noted during the past few seasons may be unusual symptoms of bacterial blight. There are no new control suggestions.

Commercial propagators are doing their best to keep this disease out of their stock. For the average grower the story remains: do not use knives or fingernails in pinching or picking blooms--snap out the tips and break off the flower stems; if propagating, do not dip in liquid hormone solutions or other liquids; sterilize propagating beds; do not water plants excessively and do not fertilize too heavily--the disease is favored by extreme succulence.

Geranium Troubles

Whether geranium diseases are increasing or simply are attracting more attention would be hard to say. At any rate the number of geranium troubles brought to our attention is considerable. Probably the most commonly reported disease is the bacterial blight. It is caused by a different bacterium from that causing the chrysanthemum blight, but, like it, may be spread through cuttings, on the cutting knife, in liquid dips, etc. At present there is no specific control--one must rely on rogueing out diseased plants and avoiding the disease-spreading practices mentioned above. Soil sterilization is advised, but alone will not control the disease.

Pythium root and stem rot of geraniums may be spread by cuttings to a limited extent, but it is primarily carried over in diseased soil and in the gravel, cinders or soil on which the pots are placed. Sterilization of soil, pots, and potting tables is essential and particular attention should be placed on sterilizing or treating the benches, as suggested for poinsettia root rots. Botrytis is not primarily a problem of cutting carry-over or infested soil, but one of poor sanitation and high humidity.

The geranium program, then, calls for rogueing out diseased plants and avoiding the use of knives or fingernails in propagating in order to reduce bacterial blight; sterilization of soil, pots, benches, etc. to avoid Pythium rot; and sanitation, proper spacing, and

intelligent use of heat and ventilation to keep Botrytis rot at a minimum. With geranium growing practices what they are at most places the puzzle is not why there are so many disease problems, but rather why any plants live to salable size. If intelligent disease-control practices were followed it is certain that losses would be greatly reduced and quality greatly improved.

Rose Mildew

Powdery mildew of roses seems still to be with us, having become particularly serious during that period in late July and early August when days were warm and nights were dropping into the 40's. Observations in a large number of rose ranges indicated that although some mildew was present everywhere, it was much less serious in those ranges where heat was regularly used nightly or was being used during the low night temperature period. Mildex (Iscothan) is being used widely and remains the best material currently available for eradicating mildew. Some trouble is still experienced in crippling of tender growth, but rumor has it that a supply of more highly purified and hence safer, material may be on the market this coming season. For mildew on miscellaneous crops--snaps, mums, begonias, saintpaulia--Mildex has done an excellent job.

Routine Disease Control

Routine fungicide tests confirmed the fact that the zineb materials (Dithane, Parzate) are the most useful all-around fungicides for the florist. All true rust diseases tested, such as snapdragon rust, aster rust, carnation rust, chrysanthemum rust, may be perfectly controlled by thorough applications at 1 lb. to 100 gals. about a week apart. In fact, the presence of rust is good evidence that zineb treatments were not properly timed or thoroughly applied. Zineb also takes top billing for Alternaria blight of carnations, snapdragons anthracnose, iris leafspot, and rose blackspot. It is effective in checking Rhizoctonia damping-off, in treating gravel for Thielaviopsis, and in controlling Botrytis diseases. Because of slight injury it is not advised as a routine mum foliage spray even though it does control Septoria perfectly. Ferbam is still preferred here. Zineb has not proved effective against Pythium and will not control powdery mildews adequately.

Captan (Orthocide, Captan Fungicide), though highly recommended elsewhere, has not proven equal to zineb in our tests. It is, however, a good fungicide.

For 1954 we suggest that you have these materials on hand:

- Zineb - for most foliage diseases and Botrytis blights.
- Ferbam - for chrysanthemum foliage sprays and for foliage diseases on other plants (e.g., azaleas, hydrangeas) which may profit from an extra shot of iron.
- Sulphur dust or wettable powder - for routine powdery mildew protection.
- Mildex - for eradicating established powdery mildew infections.
- Semesan - for emergency drench to check Rhizoctonia cutting rot, wet stem rot, and damping-off.