

collections of 60 genera around the country. Lists of these collections may be obtained from Donald Duncan at Wisley. The response to the Long Ashton Clonal Selection Scheme has been disappointing, as this is designed to select the best clones for commercial adoption.

There were conflicting views over the scope for further collecting of plants from the wild. Some held the view that there was still enormous potential in reselecting plants from the wild for specific characteristics such as hardiness or use in plant breeding. Many sources had not been fully exploited, even North America. The other view was that new plants would have to be genetically manufactured, as there was not much new material left in the wild.

On the whole botanists did not have any interest in the nursery stock industry, and nurserymen should seek out plants in Botanic Gardens. It was felt that positive action was needed to bring together all parties interested in the collection and dissemination of new plants.

## **LEAF SPOT DISEASES OF COMMERCIAL ORNAMENTAL PLANTS — THEIR RECOGNITION AND CONTROL**

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The taxonomy of fungi is a difficult topic. In the fungi there are some 47,000 known species. Imperfect fungi, with no known sexual stage, account for 15,000 species and many of these are capable of producing leaf spots.

While we might agree that disorders such as Black Spot of roses (*Diplocarpon rosae*), Leaf Blotch of chestnut (*Guignardia aesculi*), and Leaf Spot of willow (*Marssonina* spp.) should be easily recognised by horticulturists, I feel that this generalisation is incorrect and misleading. Advisory experience has taught me that the services of a mycologist is required to obtain a correct identification of leaf spot disorders.

Leaf spot of willow, for example, may be caused not only by *Marssonina* spp. but also by *Ascochyta*, *Cercospora*, *Cylindrosporium*, *Phyllosticta*, *Ramularia*, *Septoria*, and other fungi. There are more than 100 species of *Cercospora*. Regular control measures should not be considered until identification of the disorder is certain.

Traditionally, nurserymen have not adopted regular spraying with fungicides to protect hardy ornamental plants from leaf spot disorders. However, I believe customers will increasingly demand only blemish-free plants. Good quality will mean the absence of leaf spots, blotches, or other disorders. This level of control may require up to 12 spray applications a year using fungicides to protect growth which develops between sprays as well as existing foliage.

Many leaf spotting disorders thrive in the moist, warm environment created by plant propagators, and selecting disease-free stock for propagation must be the first priority if control of disease is to be taken seriously.

I have selected the following examples of leaf spotting disorders to illustrate my topic, with suggested control measures.

CROP	DISORDER	CONTROL*
Rosa	Blackspot — <i>Diplocarpon rosae</i>	Captan, Mancozeb, Maneb (A)
Berberis	Bacterial leaf spot — <i>Xanthomonas berberidis</i>	Copper (Streptomycin in U.S.A.)
Acer	Leaf spot (purple eye) — <i>Phyllosticta minima</i>	Zineb, Delsene M
Hebe	Leaf spot — <i>Septoria exotica</i>	Dithiocarbamate
Rhododendron	Leaf spot — <i>Gloeosporium rhododendri</i> (20 other fungi cause leaf spots on <i>Rhododendron</i> )	Benlate
Pyracantha	Leaf spot — <i>Fabraea maculata</i>	Don't know
Aesculus	Leaf blotch — <i>Guignardia aesculi</i>	Daconil, Sportak, Tilt — used in ADAS trials at Wye.
Camellia	<i>Glomerella cingulata</i>	Trials in Guernsey and Efford EHS with Sportak
Salix	Leaf spot — <i>Marssonina kriegneriana</i>	Morestan
Bergenia	Leaf spot — <i>Colletotricum</i> spp.	Copper, Captan
Mahonia	Leaf spot — <i>Phyllosticta</i> spp.	Delsene, or pick off leaves.

(A) = Approved under Agricultural Chemicals Approval Scheme

\* = For the purpose of this paper control should be read to mean 'This fungicide may control the disease but you should seek further advice on the use of the fungicide BEFORE carrying out your own trials. In the first instance treat only a small number of plants to check crop safety and efficacy.'