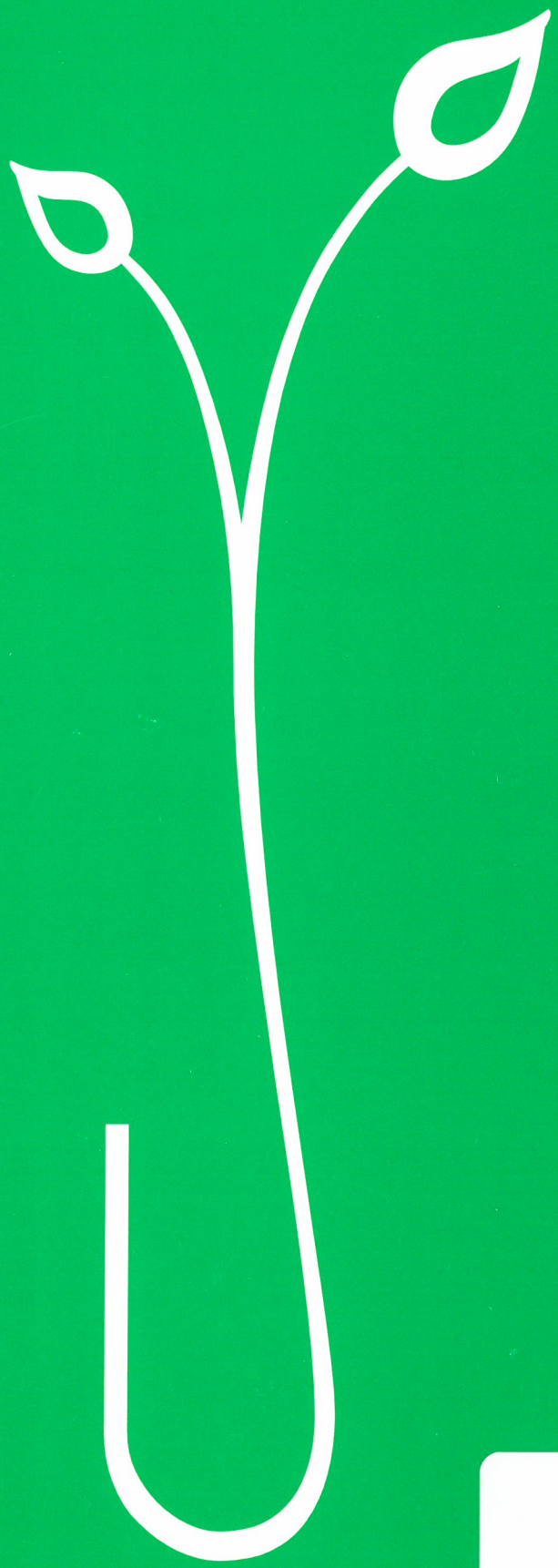
Horticultural Development Council



Research Report

HNS 24

Chemical Control of
Rose Downy Mildew

HNS 24 Chemical Control of Rose Downy Mildew

Location: Luddington EHS - 1989

Introduction

This project aimed to identify the best long term control programme for rose downy mildew. The disease is caused by the fungus *Peronospora sparsa* and can be very destructive and rapidly spreading. The most susceptible plants are those in containers, there being no apparent susceptibility differences between containerised maidens or container grown stock. The disease is favoured by warm humid conditions and rapid defoliation can quickly render plants unsaleable. At present the most widely used fungicides to combat downy mildew are those in the phenylamide group. These include furalaxyl (Fongarid) and metalaxyl (a component of Fubol 58 WP). The problem with total reliance on fungicides in the phenylamide group is the high risk of resistant strains of downy mildew developing. Strains of lettuce and brassica downy mildew have been resistant to the phenylamides for several years, and failures against rose downy mildew would appear to be likely in the future. This trial investigated downy mildew control programmes which rely solely on phenylamide treatments, ones which combine the phenylamides with chemicals from other groups, and treatments from other groups only.

Culture

Micropropagated roses of the downy mildew susceptible variety Can-Can were bought in from a commercial micropropagator on 9 March 1989. These were potted into 9 cm pots and kept under frost protected glass until potting on into 3 litre rigid containers on 19 May. The liner compost was based on a peat:bark mix with Osmocote 18:11:10 at 4 kg/m^3 and other additives. The final potting compost was 75 per cent peat, 25 per cent Cambark Fine, 50 l/m^3 coarse grit, 6 kg/m^3 Ficote 140 16:10:10, 2.4 kg/m^3 magnesian limestone, 250 g/m^3 ammonium nitrate, 750 g/m^3 single superphosphate and 300 g/m^3 WM255 fritted trace elements.

At potting on, the plants were trimmed back to 100 mm maximum shoot length. They were set out on capillary sand beds and the downy mildew control treatments applied.

Treatments

The following treatments were applied at fortnightly intervals after potting, the first applications being made on 24 May and finishing on 19 July. With the exception of Filex, which was a compost drench, all treatments were sprayed as high volume sprays to run off with a standard CP3 knapsack sprayer.

1. Untreated control
2. Metalaxyl and chlorothalonil as Folio 575FW
3. Fosetyl-aluminium as Aliette
4. Zineb
5. Chlorothalonil as Repulse
6. Propamocarb hydrochloride as Filex
7. Folio alternating with Aliette
8. Folio alternating with Filex
9. Folio alternating with Repulse
10. Folio alternating with Zineb.

In addition to these treatments half of the trial plots were drenched with furalaxyl (Fongarid) at potting, the other half remaining untreated.

Results

The hot dry summer did not favour the development of downy mildew and for the first time in several years it did not occur on any trial roses at Luddington. Incidence of downy mildew on commercial holdings was also very limited on roses that year. All treatment plants grew and flowered well with no evidence of phytotoxicity.