




Steps in pest & disease control in roses and ornamentals

1. Use all the following science proven **prevention practices** in combination.
 - a. Develop free draining soil by adding lots of compost and raising above surrounding soil.
 - b. Apply an annual dressing of lime. Apply 'Tui Novatec Premium' fertiliser or similar September and March (for healthy plants potassium content of fertiliser should be similar to nitrogen).
 - c. Avoid overhead watering – weeper soak hoses for perennial beds, or irrigation drippers for trees and shrubs are best.
 - d. Practice good garden hygiene - in particular, remove and destroy diseased leaves immediately they appear.
 - e. Remove alternate hosts of pests and diseases, including weeds. Consider removing perennials/shrubs prone to pests/diseases.
 - f. Select plants or varieties that are resistant to or less susceptible to pests and diseases.
 - g. Where required use one of the products mentioned below appropriate to the problem at earliest opportunity.

2. When pests or diseases attack
 - a. Positively identify the problem, and learn more about the life cycle, effect of temperature/humidity level, method of spread, alternative hosts, best prevention and control tools. Obtain the book **-Garden Pest & Disease Control** – available in independent garden centres, Paper Plus, or online at www.gardenadvice.co.nz
 - b. Take prompt action. Early intervention provides best control especially if a pesticide is required.
 - c. Some of the products recommended in this chart are for use on ornamentals only and are not approved for use on edibles.
Some BioGro certified organic products can be used on ornamentals but are not registered or approved for use on food crops. Organic is not always 'safe', 'free of natural toxins', or fit for purpose – Chemical is not always toxic to people or environment. BioGro certified organic is simply - free of synthetic chemicals—but no guarantee it is safe.

3. The following charts recommend the most cost effective, environmentally friendly pesticides registered and approved for use on ornamentals in the home garden. These are not the only products, but are the most cost effective, sustainable and widely available.
Note:
 - a. All these products are of very low toxicity. None are scheduled poisons, or known carcinogens, or mutagens.
 - b. All these products are safe to bees once the spray has dried except 'Groventive'. Do not spray when bees are present. Do not use 'Groventive' on plants in flower, or likely to flower in 4 weeks.

Crop	Disease	Best practice sustainable	Certified organic	Pest	Best practice sustainable	Certified organic
Annuals Perennials Bulbs & Tubers	Bacterial leaf spot	Grosafe Free Flo Copper	Grosafe Free Flo Copper	Aphids Leaf miner Mites Thrips White fly Passion vine hopper	Yates Mavrik OR Yates Super Shield OR Kiwicare Spectrum OR Combat + Grosafe Enspray 99	Grosafe Enspray 99 + Grosafe BioNeem
	Anthracnose Fungal leaf spots	Yates Super Shield Kiwicare Spectrum or Combat	Grosafe Free Flo Copper + Enspray 99			
	Botrytis Damping Off Sclerotinia	Good hygiene, ventilation, avoid overhead watering. Botry-Zen		Earwigs	Yates Mavrik	Nothing available
				Leaf roller and other caterpillars	Yates Mavrik OR Yates Super Shield OR Combat + Grosafe Enspray 99	Nothing available
	Downy mildew	Grosafe Buxus Blight Fighter	Grosafe Free Flo Copper	Grass grub & weevil adults (beetles)	Yates Mavrik OR Yates Success Ultra	Nothing available
	Rust	Yates Fungus Fighter Yates Super Shield Kiwicare Spectrum or Combat	Sulphur (Barrier protectant only. Do not use with oil or within 3 weeks of an oil spray)	Grass grub & weevil larvae	Kiwicare Lawnguard Protect	Nothing available
				Narcissi fly	Grosafe Groventive	Grosafe Enspray 99 + Grosafe BioNeem
	Powdery mildew	Super Shield or Combat	Grosafe Enspray 99 or OCP Eco - Fungicide	Mealy bug Scale	Grosafe Groventive + Grosafe Enspray 99	

Crop	Disease	Best practice sustainable	Certified organic	Pest	Best practice sustainable	Certified organic	
Roses Shrubs Trees	Downy mildew	Buxus Blight Fighter or Free Flo Copper + Enspray 99	Grosafe Free Flo Copper + Enspray 99	Aphids Leaf miner Mites Thrips White fly Passion vine hopper	Yates Mavrik or Yates Super Shield or Kiwicare Spectrum or Combat + Grosafe Enspray 99	Grosafe Enspray 99 + Grosafe BioNeem or Eco-Neem or Naturally Neem	
	Anthracnose Black spot Powdery mildew	Yates Fungus Fighter Yates Super Shield or Combat	Grosafe Free Flo Copper + Grosafe Enspray 99		Earwigs	Yates Mavrik	Nothing available
	Rust	Yates Fungus Fighter Yates Super Shield or Combat	Sulphur (Do not use with oil or within 3 weeks of an oil spray)	Leaf roller and other caterpillars Grass grub & weevil beetles	Yates Mavrik or Yates Super Shield or Kiwicare Spectrum or Combat + Grosafe Enspray 99	Nothing available	
	Botrytis Sclerotinia	Good hygiene, ventilation, avoid overhead watering. Botry-Zen fungal culture for protection		Grass grub & weevil larvae	Kiwicare Lawnguard Protect	Grosafe Enspray 99	
				Stem borers	Grosafe Groventive	Nothing available	
	Combination Rose Sprays – contain a fungicide (myclobutanil) and an insecticide (tau-fluvalinate)				Mealy bug Scale	Grosafe Groventive + Grosafe Enspray 99	Grosafe Enspray 99 + Grosafe BioNeem or Eco-Neem or Naturally Neem
							

Plants often attacked	Indoor Plants	Climbers	Hedges	Azalea / Rhodo.	Bay tree	Bottlebrush	Buxus	Camellia	Daphne	Ferns	Flax	Fuchsia	Hebe	Hydrangea	Lilly pilly	Psuedopanax	Manuka	Mexican Orange	Mich./ Magnolia	Palms	Pittosporum	Pohutukawa	Viburnum
	Common pests																						
Aphids	✓	✓	✓	✓				✓	✓	✓			✓	✓	✓	✓			✓	✓	✓		✓
Leaf Roller		✓	✓	✓		✓		✓					✓		✓		✓	✓	✓			✓	✓
Mealy bug	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
Mites	✓	✓	✓	✓				✓	✓										✓				✓
Passion vine hopper		✓	✓					✓		✓		✓		✓		✓	✓			✓			✓
Psyllid			✓												✓						✓	✓	
Thrips	✓	✓	✓	✓	✓	✓		✓				✓			✓				✓				✓
Scale	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Common diseases																							
Blight							✓																
Botrytis	✓			✓				✓						✓									
Downy mildew													✓			✓							
Leaf spots		✓	✓									✓											
Powdery mildew	✓	✓												✓									
Rusts						✓									✓		✓					✓	

Product Notes:

Grosafe Free Flo Copper – Contains copper hydroxide, which is significantly superior to copper oxychloride, easier to use than liquid coppers, leaves a lower copper footprint, requiring only half the quantity thus halving the cost.

Yates Fungus Fighter – Contains a broad spectrum systemic fungicide for control of powdery mildew, black spot, rust, and many other fungal diseases.

Grosafe Enspray 99 is a superior very pure oil which is safe to use on most plants. It controls all sucking insects as well as powdery mildew fungus. Enspray 99 is BioGro certified organic and is a good partner for all sprays except sulphur.

BioNeem /Eco-Neem/Naturally Neem – High strength formulations of neem which work as antifeedant and development disrupters. Better results are achieved when mixed with Enspray 99. Controls aphids, mites, white fly, thrips, mealy bug and scale. Used at 2 ml per litre - economical.

Yates Mavrik – Man made pyrethrum which controls sucking insects such as aphids, mites, white fly, and thrips plus chewing and rasping insects such as caterpillars and green shield bug. Safer than pyrethrum.

Yates Success Ultra- Based on an extract from natural soil bacteria, this new generation insecticide controls chewing insects such as caterpillars.

Grosafe Groventive - Contains a systemic insecticide which is highly effective for hard to get at sucking insects such as mealy bug, scale, and some stem borers. Very good for use on ferns, palms, and hedges. Do not apply to plants in flower, or likely to flower within 3 weeks.

Kiwicare LawnPro Protect – A granule formulation for application to the soil. When applied to the soil and watered in, it controls soil grubs such as grass grub and weevil larvae.

Grosafe Buxus Blight Fighter – A systemic fungicide effective against downy mildew on roses and hebes, and blight on buxus. Apply in spring and autumn when downy mildew attack is more likely.

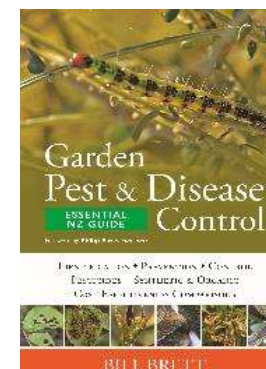
Yates Super Shield, Combat, and **Kiwicare Spectrum** are combination rose and ornamental sprays containing a mix of Mavrik and Fungus Fighter ingredients.



Garden Pest & Disease Control

For more detail on pest & disease control, this book provides –

- Identification – 240 photos indexed by crop/species
- Detail of every pest/disease
- Prevention methods that work – no myths
- Organic gardening – science proven methods
- Pesticide details, legal status, approved use, comparison with alternatives – for every pesticide available
- Star rated comparison/quick reference charts for every product for every purpose/crop
- Withholding period/compatibility charts



57.50

Available from

www.gardenadvice.co.nz