

Pests and Diseases at Garden Centres

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Research carried out for Gardening Which? found a wide range of pests and diseases on hardy nursery stock for sale in retail garden centres. Fruit trees, ornamental trees and roses were the worst affected plant types, while alpines and conifers were relatively problem free. Apple scab, downy mildew on hebes, rust on roses, bacterial canker on *Prunus*, and aphids on a wide range of stock were the most common problems. The research and ideas for improvement are detailed.

METHOD

Sixty garden centres, all selling a wide range of plants, were selected to represent the retail trade throughout the country. Each garden centre was visited anonymously in the last week of June or first week of July 1993 by one of a number of professional hardy nursery stock specialists, briefed by Gardening Which?. Plants were assessed by type, in seven groups, as shown in Table 1. Each group was rated on a 5-point scale for overall health, and separately checked and rated for aphids, spider mites and, as appropriate, the specific pests and diseases detailed in Table 2. Inspectors were also asked to comment on any other plant pests or diseases they encountered, and to note any other problems with plants on sale, such as weedy pots or dry compost.

RESULTS

General. There was considerable variation in the quality of plants on sale, both between one garden centre and another, and between different groups of plants in the same garden centre. A selection of inspectors' comments gives a flavour of the range of quality encountered:

- "Very well stocked, generally very good condition" (Norwich)
- "Overall quality and presentation to a high standard, stock levels appropriate to the season" (Somerset)
- "Shabby, lack of attention to detail, impression of a once good centre that has run down. Shrubs suffering nutrient deficiencies, poor watering, physical damage, and slugs. Plants remaining in compost far too long, and look hard and starved. Many plants on offer should not be put on sale." (Devon)
- "Bad shrub damage on deciduous and evergreen shrubs, both showing iron chlorosis, poorly managed with no quality control." (Wiltshire)
- "Promotional stock healthy and well cared for, problems with older shrubs and trees, especially fruit." (Gloucestershire)
- "Large centre with large range of plants and large range of disorders. Plant care and maintenance very variable." (West Midlands)

Table 1. Overall rating for each plant type, plus incidence of aphids and spider mite, shown as a percentage of garden centres inspected.

	Overall					Aphids		Spider mite	
	Very poor	Poor	OK	Good	Very good	Severe ¹	Some ²	Severe	Some
Alpines	0	3	8	33	56	0	5	0	0
Climbers	0	11	30	27	33	0	17	0	24
Conifers	0	8	25	25	42	0	18	0	0
Deciduous shrubs	0	13	43	32	12	0	41	0	37
Evergreen shrubs	0	7	38	38	17	0	25	0	20
Fruit	10	23	38	17	12	0	32	3	38
Herbaceous perennials	0	8	27	42	23	0	24	0	12
Ornamental trees	5	15	37	18	25	5	34	0	20

¹ Severe = one-fourth or more of plants on sale seriously affected.

² Some = up to one-fourth of plants affected.

There was no significant difference overall between members of the Garden Centre Association and non-members, nor was there any difference in overall performance between independent garden centres and members of garden centre chains. (Do-it-yourself superstores with garden centres attached were not included in the survey.)

Table 1 shows the percentage of garden centres receiving each quality rating for each plant type. For example, 3% of garden centres inspected were rated "poor" for alpines, whereas 56% were rated "very good". Overall our inspectors found far more good plants than poor ones. However, there were clearly some problems, most notably with fruit plants, where the overall quality was judged unacceptable at one in three of the garden centres. Typical comments were "Top fruit abysmal, very neglected", "Very old, overgrown, unsaleable", and "Leaf loss and nutrient deficiency". Ornamental trees were another poor area, unacceptable at one in five garden centres. Maintenance was a particular problem, as shown by these comments: "Poorly set out, falling over", "Wind damage to trees" and "Too close together for too long, poor shape."

Deciduous shrubs are by far the largest group at most garden centres, and were at least acceptable at the majority though only a few (12%) were rated very good. Most problems were confined to a few plant types, most notably roses. Other problems are detailed in the next section. Alpines as a group suffered fewest problems and were judged good or very good at over half the garden centres visited.

Table 1 also shows the incidence of aphids and spider mites on all plant types. Many garden centres are to be congratulated for high standards in this area, over 90% of alpines, 80% of conifers, and 70% of climbers were free of these pests when checked. On the other hand, at over 30% of garden centres one or both of these pests were found on deciduous trees, shrubs, and fruit, and 5% of garden centres had severe aphid problems on their trees.

Specific Disease Problems. These are detailed in Table 2. The incidence of pests and diseases which were routinely checked for at each garden centre varied considerably. For example, bacterial canker on *Prunus* was found at a total of 55% of garden centres, and at 8% of these was judged to be severe, i.e., at least one-fourth of the plants on sale were seriously affected. On the other hand, verticillium wilt on *Acer* was rare, with only 7% of garden centres having any plants showing symptoms of infection.

The most widespread disease was scab on apple trees, found at a total of 87% of garden centres—and serious at over one-fourth of them. Other common problems were downy mildew on *Hebe*, leaf spots on evergreens, and rust on *Rosa*. In addition to the 14 pests and diseases listed in Tables 1 and 2, the inspectors noted a total of 74 other specific plant disorders. Of these, the most widespread were blackspot on roses; downy mildew, particularly on roses; eelworm, particularly on *Weigela*; powdery mildew, particularly on *Lonicera*, *Rosa* and *Spiraea*; slug and snail damage; and adult vine weevil damage, particularly on *Rhododendron*. Although not widespread, there were several instances of fire blight, mostly on *Cotoneaster*.

Other Problems. Many garden centres were found to have problems with weed infestation—particularly bittercress and liverworts—in some plant containers, or on holding areas. Generally this is an indication of poor management, and often means that plants have been in the same container for too long. Comments included: "Weed

Table 2. Occurrence of specific pests and diseases, shown as a percentage of garden centres inspected.

Pests/diseases	Severe ¹	Some ²
Bacterial canker on ornamental <i>Prunus</i>	8	47
Clematis wilt	0	22
Downy mildew on <i>Hebe</i>	7	60
Eelworm on <i>Buddleja</i>	0	19
Leaf blemishes e.g., shothole on evergreens	0	58
<i>Phytophthora</i> root rot on <i>Chamaecyparis lawsoniana</i> 'Ellwoodii'	0	9
Powdery mildew on <i>Rhododendron</i>	0	31
Rust on <i>Hypericum calycinum</i>	14	14
Rust on <i>Rosa</i>	5	55
Scab on apples	27	60
Verticillium wilt on <i>Acer</i>	0	7
Adult vine weevil on <i>Pieris</i>	0	18

¹ Severe = one-fourth or more of plants on sale seriously affected

² Some = up to one-fourth of plants affected.

control very variable, with some weeds larger than the plants"; "Weeds a problem in both pots and beds, especially bitter cress, willow herb, and pearlwort"; and "Moss and liverworts widespread, compounding watering problems". Watering proved a serious problem at a few garden centres, both too much and too little, as these comments show: "Irrigation variable, both root rot and leaf scorch in evidence"; and "Very dry compost leading to leaf loss and dead branches on trees and fruit but roses and climbers standing in water." Even when not directly related to the incidence of pests and diseases, plants under stress are going to be more susceptible to these problems than those which are weed-free and correctly watered.

DISCUSSION

Under the Sale of Goods Act 1979, goods bought by consumers must, amongst other things, be "of merchantable quality", and "fit for their purpose". Clearly, plants suffering from pests and diseases are unlikely to meet these criteria, and should not, therefore, be on sale. If they are sold, purchasers are not only receiving an inferior product but, in many instances, they risk introducing troublesome pests or diseases to other plants in their gardens.

Although pests and diseases can, of course, strike at any time, it was clear from inspectors' comments in this survey that the majority of infections and infestations were associated with plants which had been on sale for too long, and that more regular checking and elimination of old stock would remove many of the problems. More time-consuming measures such as pesticide spray programmes could then be concentrated on plants that really need them.

Suggestions for Action. Good garden centres with very low incidences of pest or disease problems show what can be achieved with good management. Gardening Which? believes that attention to the following points would lead to significant improvement in the health of hardy plants on sale at garden centres and, consequently, to improved customer satisfaction:

- Inspecting all stock on arrival and rejecting substandard plants.
- Reducing stress-causing factors, such as inadequate feeding or watering, overcrowding, and weed competition.
- Ensuring plants are withdrawn from sale as soon as they are past their best.
- Training staff in appropriate treatment in advance of the problems actually occurring, so that prompt action can be taken. Treatment may consist of an appropriate pesticide spray, but pruning or other non-chemical treatment may be equally effective.
- Establishing routine examination for pests and diseases and ensuring that appropriate action is always taken.
- Buying in, and where necessary promoting, more disease-resistant plants. This could lead to a significant reduction in disease problems on, for example, roses and apples.

REFERENCES

- Gardening Which?. 1994. How good is your garden centre?. March.
Gardening Which?. 1994. Buying healthy plants. May.