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HDC PC120

POT AND BEDDING PLANTS : SUPPORT FOR THE BRITISH ORNAMENTAL PLANT PRODUCERS SAMPLE MANUAL (LARGE)

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BRITISH ORNAMENTAL PLANT PRODUCERS

Growers Sample Manual

(Large Grower)

Address:(Name)

Phone/ fax/ Mobile numbers

Nursery Accreditation Scheme contact:

Introduction

This sample manual is designed to show how a nursery manual can be produced, the details given in this manual are based on a real nursery and may not be suitable for all nurseries or as code of practice and legislation requirements change. A nurseries manual will account for individual nursery practices and customer demands but will comply with all the conditions of the Code of Practice. The aim of the code and the nursery manual is to ensure the production and supply of quality products thereby maintaining and developing customer satisfaction. Nurseries will use their specific nursery manual to apply for the British Ornamentals Plant Producers Accreditation Scheme administered by the BPPA. Assessment will be based on Nursery inspections to determine how the nursery produced manual complies with the Code of Practice document and how the nursery working practice complies with their own manual.

The Horticultural Development Council have funded the establishment of this accreditation scheme and the BBPA are funding its administration and future development.

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This nursery is based on 2 sites. Each nursery is separate but some facilities and office administration are shared. The business serves multiple store and garden centre customers

This manual is separated into 3 main sections:-

1) Strategic aspects

2) Production issues

3) Customer considerations.

1. STRATEGIC

1.1 HEALTH AND SAFETY

1.1.1 FEPA requirements.

All staff born after 31 December 1964 carrying out pesticide applications on both nurseries hold the relevant National Pesticide Training Council (NPTC) Foundation Module (PA1) and certification for the specific application unless under the direct and personal supervision of a Certificate holder. New staff expecting to undertake pesticide applications will all hold relevant certification.

Certification Records

Name	DOB	Modules Undertaken			
A Nursery Worker	16/11/65	PA1 (1/2/93)	PA6 (5/5/93)		

Both our pesticides stores are built to HSE standards and are situated behind the boiler house (nursery 1) and next door to the canteen (nursery 2). Our sprayer rinsings are treated in Sentinel treatment facilities which are adjacent to the stores. Empty containers are triple washed, made unusable and either burnt or placed in skip.

Advice is only taken from horticultural BASIS registered consultants and representatives from pesticide suppliers.

1.1.2 COSHH risk assessments.

All operations on both nurseries are assessed for potential hazardous substances and a copy of the written assessments is available to all staff on request. Our assessment was completed in May 1990 and the updates are shown below.

COSHH Assessment Update Register

3/91	5/93	7/94	4/95				

1.1.3 Health and Safety risk policy and assessment

The Health and Safety document is available in the nursery office and staff canteen. The assessment on both nurseries was completed in May 1990 and the updates are recorded below.

Update Register

3/91	5/93	7/94	4/95				

1.2 ENVIRONMENTAL POLICY

1.2.1 Peat and its alternatives.

Our sole peat supplier has confirmed all supplies are from non SSSI sources (Letter 1/5/94).

Trials on our nursery were completed in the 1993 season on Coir, and composted waste based composts. The trial gave uneven plant results compared to existing peat based mixes and the alternatives cost 20% more. The trial results were presented to selected customers September 1993.

1.2.2 Energy use.

A MAFF funded energy audit was completed on both sites by ADAS in 3/95. The audit reviewed our fuel usage (oil., electricity) compared with standard figures, distribution system design, maintenance and insulation of plant and machinery. The main recommendations were implemented (hot water main lagging.). An update is due 3/98

1.2.3 Water supply and use

The Irrigation systems have been upgraded to increase eveness and reduce wastage. Layflat was installed to reduce water losses and roof water is collected in a reservoir. Staff are instructed to report irrigation leaks immediately.

1.2.4 Pollution safeguards

All fuel tanks on the nursery over 1500 litres are bunded in accordance with the MAFF Code of Good Agricultural Practice for the Protection of Water. Acid storage and treatment plants are caged, locked and bunded. Pesticides are kept in approved stores. Concentrated nutrient stock is stored in small sealed tanks. Nutrient levels in nursery runoff are minimised by regular compost analysis and careful use of controlled release fertilisers. Boiler plant maintenance (see energy audit) is carried out by (Name) to avoid black smoke.

Any waste that is burnt on the nursery is done in a responsible manner by specific members of staff (name) to avoid black smoke production.

1.2.5 Recycling

The following materials are recycled from our nurseries.

1) All cardboard.

2) Scrap metal

3) Plastics -all undamaged containers sterilised and reused. We are investigating commercial plastic recycling schemes.

4) All undamaged pallets are recycled.

1.2.6 Waste disposal

Waste plant material is collected from both nurseries and transported to the bottom of the field of nursery (name), sprayed with glyphosate to control any plant growth and spread on the field as a soil conditioner.

Other waste that cannot be recycled is compacted and disposed off the nursery into a licensed tip by Contractor Company. The duty of care is legally passed to the contractor.

1.2.7 Chemical use

Reductions in chemical usage are enabled by the use of Integrated Pest Management. This involves the use of yellow sticky traps with regular monitoring by Consultant (Name). Trap counts are used as the basis for pesticide and biological control applications. Pesticide use follows the FEPA Pesticide Code of Practice.

1.2.8 Environmental pollution

There are no close neighbours which are adversely affected by either nurseries.

1.3 MANAGEMENT STRUCTURE AND RESPONSIBILITIES

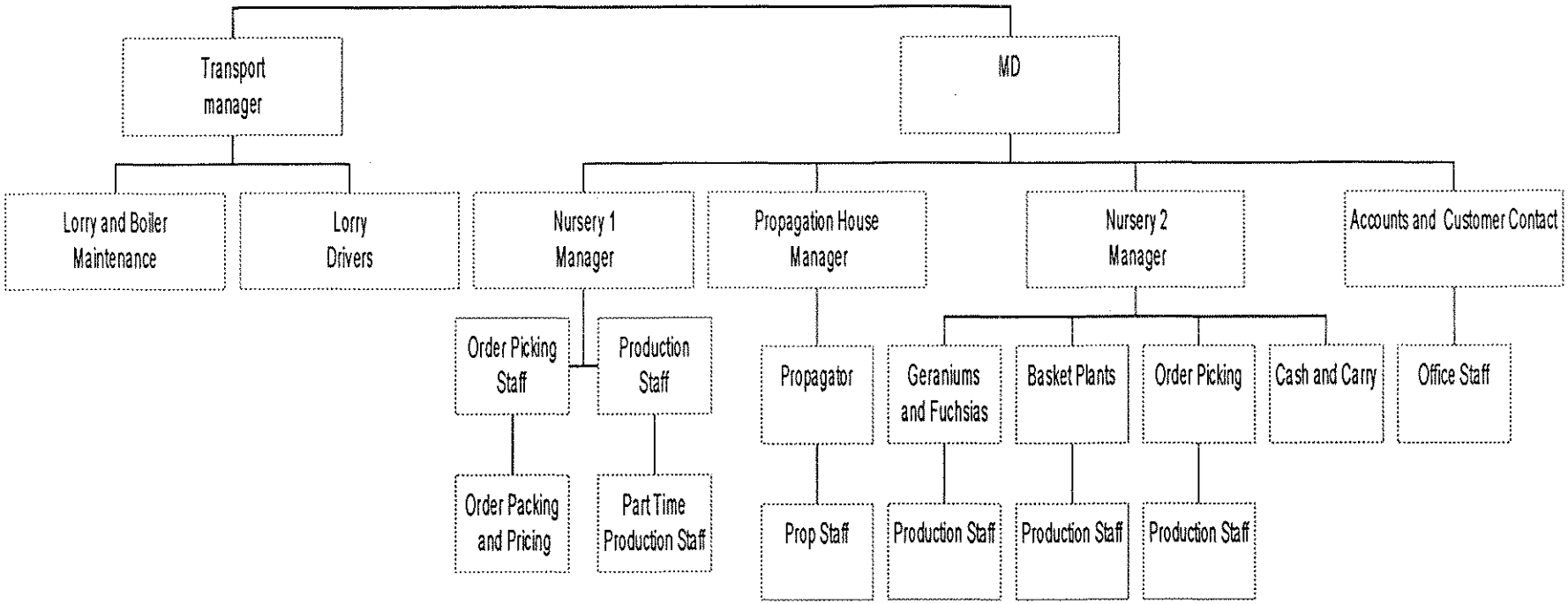
1.3.1 Management structure

The diagram below shows the nurseries management structure (as of 4/96). It will be updated as responsibilities and staff change. (insert names)

Nursery contact for our main customers are shown below.

Customer 1 (name) (Sales) (Name) (Quality issues)

Management Structure



1.3.2 Communications

Each of our staff members knows who to report to for job instruction and problems. Communications and responsibilities are channelled as in the management structure. Verbal instructions are given where staff absences result in changed responsibilities.

1.4 QUALITY POLICY

The nursery quality statement is :-

The nursery produces quality plants to give maximum consumer satisfaction and aims to provide the highest levels of customer service.

1.5 STAFF TRAINING

Our staff training policy is that all staff at the very least are given on the job training in their basic manual tasks. Permanent staff have written training aims and their training records are kept in the office. It is our policy to develop staff skills through in house training such as plant and pest and disease recognition. Selected staff members have received training in First Aid, Welding and building skills.

1.6 INTERNAL AUDITS

We hold management meetings each Monday night to discuss day to day issues and customer problems that have occurred in the last week. Policy issues are raised twice a year after each of the main seasons.

2. PRODUCTION ISSUES

2.1 HYGIENE

2.1.1 Nursery site

Both nurseries have a 1 metre weed free strip around all of the glasshouses maintained by herbicide spraying. The herbicide used is glyphosate because it is of low risk to the crop and the environment.

2.1.2 Glasshouses and standing out areas

The inside of the glasshouses are kept weed free by removal by hand. Standing out areas are treated with herbicide when necessary and kept free of debris and unmarketable product.

2.1.3 Delivered Product

Product and delivery trolleys are cleaned before dispatch where necessary.

2.1.4 Plant materials.

All deliveries are checked for completeness and signed for at delivery.

All plant material is thoroughly quality checked on or soon after arrival by (name) and comments recorded. All problems with delivered plant material are discussed with the MD within 12 hrs and appropriate action taken (see 2.3.5).

2.1.5 Production Materials

Plug compost is bagged and stored on wrapped pallets. Peat is delivered in wrapped bales. Sterilised loam is stored in a covered bay. Birds are controlled to prevent weed contamination.

All production containers are stored under cover.

Water tanks are covered.

2.1.6 **Vermin.**

Animals are controlled as required. Traps and baits are covered and inspected regularly.

2.1.7 **Visitor arrangements.**

Customers and representatives are directed to report to the office so that they can be accompanied by an appropriate member of staff whilst on the nursery.

2.1.8 **Staff hygiene arrangements**

Staff nursery hygiene rules are posted in the office and staff room.

Hygiene policy

1. Staff are not allowed to raise their own plants on the nursery unless given permission and then they are grown to a similar standard as the commercial crop.
2. Staff have a duty to keep all areas clean and tidy.
3. As a minimum all pathways will be swept and washed every Friday or more frequently as required.

2.1.9 **Returned plants and materials**

All returned plants are placed in the marked area of the loading bay. They are not moved until they are assessed. Returned products are assessed by QC dispatch (Name) and then either regraded, treated or disposed of.

2.2 <u>CLEANING</u>

2.2.1 **Between batches.**

After delivery of plants from a bay, the bay is be cleaned of any remaining unsaleable plants or debris and then cleaned depending on the surface and adjacent plants. Mypex is swept, or rinsed with water and a little detergent. Any holes or tears will be repaired.

Benching is cleared of crop debris between crops and the capillary matting sterilised yearly with formaldehyde.

2.2.2 End of season

Each cropping area is sterilised twice a year with formaldehyde. The formaldehyde is applied as specified in the commodity approval and risks assessed on the nursery COSHH assessment. The outside glass is cleaned regularly according to how dirty it is, usually as part of the late summer shade removal process. The inside surface of the glass and structure inside the glasshouse are cleaned with high pressure water and a detergent as part of the formaldehyde sterilisation process.

2.3 PEST AND DISEASE CONTROL

2.3.1 Identification and training

All permanent production staff can identify the following pests and diseases and/or their symptoms.

Aphids

Thrips

Caterpillar

Leafhopper

Vine Weevil (adult or larvae)

Leafminer

Whitefly adults and scales

Two spotted spider mite

Botrytis

Root rots (such as those caused by Pythium, Phytophthora, Thielaviopsis and Rhizoctonia).

Powdery and Downy mildews.

Staff will report to (names) when any of these problems are found.

Staff training sessions are conducted annually.

2.3.2 Monitoring

All plants are monitored for signs of pest diseases and physiological problems by (Name). Monitoring procedures include the use of sticky traps and regular crop inspection by a consultant. Trap count records are discussed weekly in the season with our technical consultant and written copies are kept in the nursery office.

2.3.3 Record keeping

A pesticide record book is kept in the pesticide store and all chemical and biological applications are recorded including product, rate, application method, target pest or disease, plants or areas sprayed and weather conditions.

2.3.4 Biological control

Biological control agents e.g. Amblyseius for the propagation house are checked visually before application by (name) and any defects discussed with the supplier.

2.3.5 Pest outbreaks

(Name) is responsible for all pest and disease control and is our liaison point for the Plant Health and Seeds Inspectorate. All imported plants are subject to stringent checks on receipt. Any suspected or confirmed non indigenous pest outbreaks are immediately isolated from marketable crops to prevent any interference in the event of a notice being served. PHSI will be notified immediately by (name).

The nursery liaises with the local farmer with regard to the local OSR harvest date to allow increased monitoring for pests during that period.

2.4 NUTRITION

2.4.1 Compost

Own Mix

A written 'recipe' is available in the mixing shed.

Samples are taken once a week in accordance with the code. Samples are analysed monthly during production.

Proprietary

We buy plug compost from (name) to a written specification.

The batch number is recorded on the delivery note.

2.4.2 Nutritional status

Routine check analysis is taken on a selected growing crop on a monthly basis.

Dilutors are maintained annually and a conductivity meter is available to check calibration of feeding equipment at regular intervals. Diluters are checked for the correct conductivity every two weeks. Staff check for dye presence at every feeding.

2.5 ROUTINE CHECKING , CALIBRATION AND RECORDING

2.5.1 Temperatures and humidities

Temperatures are recorded by the environmental computer. Alarm systems for low temperature warning are fitted and inform (name) at home in the event of a problem.

2.5.2 Aspirated screens

In the areas where humidity is measured, the wick in aspirated screens is checked weekly and replaced when necessary. The sensors in the screens themselves are checked yearly. The filter and screen are cleaned when sensors are checked.

2.5.3 Supplementary lighting

The six bulbs and reflectors are cleaned and visually checked annually.

2.5.4 Solarimeters

The solarimeter is cleaned annually.

2.5.5 Seed

Seed use is recorded at sowing (variety details, supplier and batch number) Seed is stored in a fridge and care is taken over the use of seed stored from season to season. Stored seed is germination and vigour tested.

2.5.6 Other inputs

Traceability procedures.

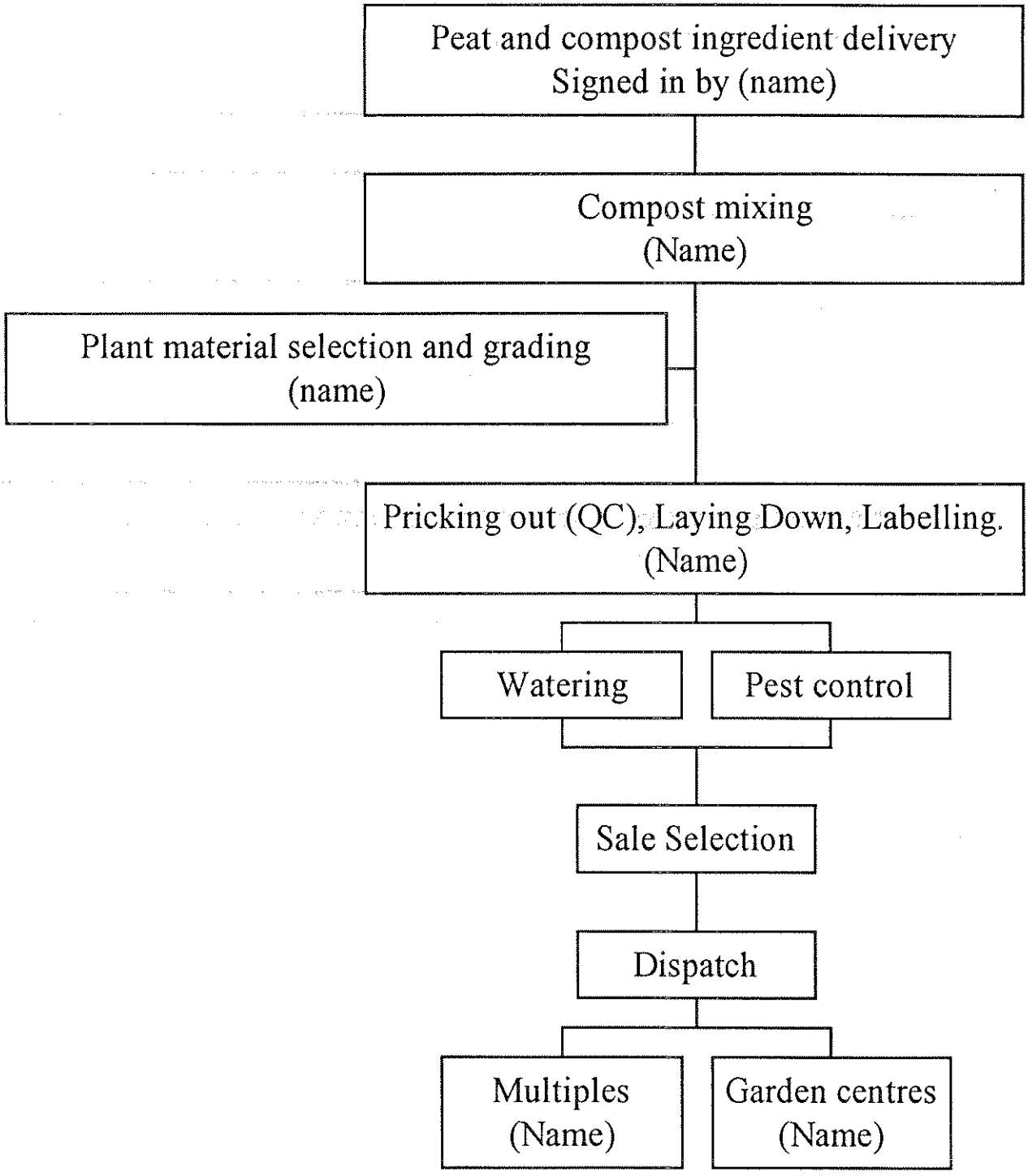
All major crop inputs are traceable in the event of a problem. Growing media can be traced by the batch number recorded on the invoice, plants that are bought in, by invoice information and home propagated plants by batch labelling. Where this involves physical methods such as keeping bags these are only be kept until the plant has been received by the customer.

2.6 PRODUCT QUALITY

2.6.1 Production processes

This is our main production process with names included of those responsible for quality control.

Production Process



2.6.2 Establishment and product eveness

We have minimum standards for the stage of development, establishment and eveness of product before it can leave the nursery. These include the following-

- Rooting extent. Rooting will extend to the perimeter of the compost volume and allow the majority of compost to be removed with the plant when the plant is removed from the container
- Container cover. The container will be adequately covered with reference to the form of the plant.
- Stage of flowering. This will depend on the stage required at point of sale but will generally be the potential for one open bud at point of sale.
- All plants will have freedom from pests and diseases and show no signs of nutritional disorders.

2.6.3 Specifications

Our aim is to give customer satisfaction with reference to the size, suitable container type and appropriate selling period for all our products. Our Products will meet customer specification whenever possible and these specifications should, where given, be checked for acceptability to both parties. We will inform our customers of a possible deviation from specification or lack of availability at the earliest possible opportunity. All customer specifications are treated as confidential.

We guarantee that sample products will be typical of the rest of the crop and safe to handle.

2.6.4 **Product development.**

When we introduce new products they will be checked throughout the product development process to ensure that they comply with any appropriate legal requirements and that they will meet acceptable performance levels for the end user. Product development information can be supplied at the customers request. This will include, as a minimum, toxicity, hardiness, any pest and disease susceptibilities and end user cultural information.

2.6.5 **Cultural operation training**

In house training will be given to staff in all cultural operations by their supervisor when commencing employment and when changing tasks. Particular attention is paid to training in watering and transplanting. All staff are given a new employees induction booklet detailing employment aspects.

2.6.6 **Bought in plant material**

All material arriving on the nursery is checked for quantity on receipt and will be inspected for pest and diseases and quality and signed for by (Names) before the end of the working day.

2.6.7 **Stock rotation**

Stock rotation of bought in plugs is achieved by laying down, in order, in the holding area.

2.6.8 **Sub contractors**.

We take full responsibility for contract grown product using weekly visits to contractors nurseries by our technical manager (Name).

2.6.9 **Spot Buying**

Spot buying is minimised, where is does occur we take responsibility for that product under our accreditation procedures. As full a production record as possible is obtained from our supplier. Where there is any doubt about the

health or quality of the product we will have it be inspected by our consultant and a short report produced and results actioned.

2.7 LABELLING

Customer batch labelling. Not applicable

Batch labelling All plugs are batch labelled with all details including sowing week number throughout their production. Consumer labels are inserted at pricking out. The pricking out date is available from the crop programme. Products for multiple customers are week number dated at dispatch. A record system to simplify traceabilty is being developed.

Consumer labelling It is our policy that labelling is accurate (whether generic or specific) and is at a minimum 1 label per unit sold. All retail labelling follows the poisonous plant labelling guidelines given by the HTA.

3. CUSTOMER CONSIDERATIONS

3.1 Production Planning and Control

The nursery has a paper based scheduling plan to ensure timeliness of operations. Sowing, transplanting and marketing schedules can be updated as conditions change. (Name) operates our stock control system which shows what products are, and will be, available.

3.2 TRANSPORT

3.2.1 Customers own transport

If our customers own transport is used then they take receipt of the goods at the point of dispatch.

3.2.2 Third party transport and nursery own transport

If we use a haulage company to transport plants we will ensure that the plants arrive at our customers site in good condition, that our hauliers are adequately insured for the plants and that we will sort out any problems with the haulier.

3.2.3 Delivery records

Each delivery of plants is accompanied by a drivers report sheet. This includes a full description of the load and transport used along with details on the times of loading and delivery and the weather conditions (if temperature sensitive plants are involved). There is a comments box on the form for the driver and the customer to write on if necessary.

3.2.3 Delivery details

Written instructions are supplied to all drivers whether our own or the hauliers and they are all aware of the procedures and care needed in the transport of plants.

The unloading of a delivery will not commence until the authorised person to receive the load is present at the customers unless specifically authorised otherwise.

We always check with the customer of the requirements of packing of the plants and the method of unloading. There is a positive written release (dispatch note initials) of product from the nursery to avoid incomplete product being dispatched from the nursery.

3.2.4 **Delivery conditions**

The temperature of the plants will aim to be maintained between these extremes throughout the journey of the plants from nursery to customer.

Bedding plants	5-20°C. Optimum 10°C
Cyclamen	5-10°C
Poinsettias	13-16°C

No plants will be in the dark for more than 48 hours during the marketing process.

The plants will be delivered with adequate compost wetness to last the plant 24 hours under normal conditions.

Our delivery note details trolley returns, cleanliness and plant returns.

3.3 **SHELF LIFE/RETAILER/GARDEN PERFORMANCE**

The expected shelflife under reasonable care and environmental conditions is agreed with our customers.

3.3.1 **Nutrition**

Our products are liquid fed to meet the following target

Bedding -nutrients in the compost to last 2 weeks minimum

Pot plants- nutrients in the compost to last 4 weeks minimum.

The nutritional status of the media at marketing is analysed annually.

3.3.2 Acclimatisation

The nursery has a comprehensive policy of customer information as regards hardiness. We inform customers of hardiness of the species we supply in the period January to May. We harden off specific plants such as Lobelia using our 'roll out' structure.

3.3.3 Growth regulation

We have a policy of responsible growth regulator use. The use of long lasting growth regulators is avoided unless appropriate to the crop and crop stage and we inform our customers before use.

3.3.4 Retailer information

The nursery will provide retailer and customer information about product care if requested.

3.3.5 Species

Pest and disease susceptible species and varieties are avoided unless they are by specific customer request.

3.4 CUSTOMER QUERIES

3.4.1 Complaints policy

We have a written complaints policy. (name) is our customer contact who deals with complaints.

Policy

1. All problems written and verbal are detailed on the Customer queries form.

2.(Name) will assess the problem ASAP and contact the customer to inform them of action (if any).

3. All customer queries forms and consequent actions are reviewed weekly at our management meeting.

3.4.2 Query/complaint procedures

The phone is diverted to (name) if no one is available on the nursery when deliveries are occurring. At the time of a problem the customer is given a time when the nursery will report back. Contact will be made within 12 hours of being made aware of a problem..

3.4.3 Complaint review

This is undertaken at our weekly management meeting.

3.4.4 Returns and out of specification products

Returned products are placed in the dedicated dispatch bay area. (Name) is responsible for the decision on the treatment for each batch and they are only removed after consultation. Rejected or out graded product is labelled with yellow tape. Any brand identification is removed from all outgrades.

3.5 SECURITY

All visitors are instructed to report to the office. No visitor is allowed access to the growing areas unaccompanied. Security is undertaken by (name).

3.6 TRADING CONDITIONS

3.6.1 Insurance

Our Public Indemnity Insurance policy is with (Name) insurance Policy number *****.

Contingency procedures We have a written contingency policy detailing glasshouse and consequential loss insurance, procedures to find alternative sources of product to meet customer requirements, Procedures for instituting repairs, rebuilding etc. and procedures for providing additional production facilities at short notice.

3.6.2 Terms and conditions

Our terms and conditions under which the company trades are supplied to all customers on our catalogue.