

Hardy Nursery Stock (General)

General Hardy Nursery Stock Gr

Diseases & Disorders (Crp Pro)

HNS 123 Control of Phytophthora ramorum in nursery stock (COPRINS)

* **Final Report 2004; Factsheet 19/03**

HNS 123a Chemical control of Phytophthora ramorum causing foliar disease in outdoor hardy nursery stock

* **Final report 2006**

Pests (Crop Protection)

HNS 130 Screening novel molecules for use in IPM programmes for control of Carnation Tortrix moth and Light Brown Apple moth caterpillars in hardy nursery stock

Weeds (Crop Protection)

HNS 126 Biology, epidemiology and control of liverwort infestation of nursery plant containers

* **Final report 2006**

HNS 175 Liverwort control using novel techniques

Water, energy & climate change

HNS 97b Enhancing the quality of hardy nursery stock and sustainability of the industry through novel water-saving techniques

* **Annual report 2006, 2007 & 2008**

HNS 122a Demonstration of gantry irrigation on an outdoor hardy nursery stock bed

Nutrition & other inputs

HNS 127a HNS: Over-wintering in different peat substitutes and assessment of nursery trials

* **Current**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Herbs Ornamental (HNS)

Product scheduling/supplychain

- HNS 81 Lavender: a review of the factors controlling quality production at different times of the year
* **Final Report 2000**

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Matacaria

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Other Hardy Nursery Stock Grou

Pests (Crop Protection)

- CP 17a Pesticide gap analysis update for ornamental crops (2006)
* **Final Report 2006**

Weeds (Crop Protection)

- HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

- HNS 175 Liverwort control using novel techniques

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

Primrose/Primula

Varieties/Products

PC 154 Primrose (*Primula vulgaris*): factors affecting flowering and its variability

* **Year 1 Report 1999**

Container Grown HNS

Container Grown Climbers Group

Diseases & Disorders (Crop Protection)

HNS 3b Clematis: aspects of the biology and control of clematis wilt

HNS 52 Clematis: aspects of the biology and control of clematis wilt

* **Final Report 1999**

HNS 92 Hedera: biology and epidemiology of *Xanthomonas* leaf spot

* **Final Report 2001**

HNS 114 Investigation into widespread death of *Clematis armandii* subjects

* **Final Report 2003**

Pests (Crop Protection)

HNS 120 Remedial and protectant treatments for vine weevil larvae in containerised HNS, as part of an overall IPM strategy

* **Year 1 Report 2004**

Weeds (Crop Protection)

HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

HNS 95 Investigation into the controlled release fertiliser requirements of climbers

* **Final Report 2000; Factsheet 05/05**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Conifers Group

Pests (Crop Protection)

HNS 177 Further commercial evaluation of *Trichogramma brassicae* parasitoids for long-term biological control of Carnation tortrix

Weeds (Crop Protection)

HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Ericaceous Gr

Diseases & Disorders (Crp Pro)

HNS 17a Heathers: biology and control of fungal pathogens

* **Reports 1988, 1989 & 1990**

HNS 17b Heathers: control of disease by fungicides

* **Final Report 1988/89**

HNS 17c Heather and heaths: fungal and integrated control programmes

* **Final Report 1993**

HNS 64 Chemical control of Rhododendron powdery mildew

* **Final Report 1995**

Weeds (Crop Protection)

HNS 167 Hardy Ornamental Nursery Stock: preventing outdoor container grown nursery stock plants rooting through into capillary sand beds via the use of herbicide treatments to the surface of the bed

HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

HNS 96 Investigation into the controlled release fertiliser requirements of heathers

* **Final Report 2000; Factsheet 05/05**

HNS 96a Heathers - A study of potential improvements in nutrition

* **Final Report 2002; Factsheet 05/05**

HNS 102 Improved flowering of Rhododendron and other woody plant species

* **Final Report 2003**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Hedging Group

Pests (Crop Protection)

HNS 151 Is feeding by the conifer aphid *Cinara cupressivora* causing the browning seen in conifer hedges

* **Final report 2008**

Weeds (Crop Protection)

HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Herbaceous Gro

Diseases & Disorders (Crp Pro)

HNS 21 Hebes: control of downy mildew

* **Final Report 1990; Scientific paper 1993**

Weeds (Crop Protection)

HNS 111 Container HNS: Herbicides for shrubs and herbaceous perennials - for use in the growing crop

* **Final Report 2003**

HNS 166 Hardy ornamentals: herbicide screening for herbaceous perennials and grasses

HNS 175 Liverwort control using novel techniques

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

- HNS 42a Supplementary lighting for alpines, herbaceous and hardy nursery stock species
 * **Final Report 1994**
- HNS 43c Hardy herbaceous perennials: a study of nutritional requirements
 * **Final Report 2000; Factsheet 05/05**
- HNS 103 Hardy herbaceous perennials: a review of techniques for manipulating growth and flowering
 * **Final Report 2001**
- HNS 103a Hardy herbaceous perennials: value of a screening protocol for factors that manipulate flowering
 * **Final Report 2002**
- HNS 175 Liverwort control using novel techniques

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Roses Group

Diseases & Disorders (Crp Pro)

- HNS 24 Roses: control of downy mildew
 * **Final Report 1989**
- HNS 53 Container grown roses: control of downy mildew by manipulation of cultural factors and timely use of fungicides
 * **Final Report 1994; Factsheet 04/04**
- HNS 75 Roses: an examination of the causes of 'spring dieback' in containerised bush roses
 * **Final Report 1997**
- HNS 106 Roses: fungicides for the control of powdery mildew, black spot and rust
 * **Final Report 2001; Factsheet 12/04**
- HNS 106a Roses: fungicides for the control of powdery mildew, blackspot and rust - further testing and nursery trials
 * **Final Report 2001; Factsheet 12/04**
- HNS 135 Container grown rose: evaluation of natural products for prevention and control of downy mildew (*Peronospora sparsa*) and improved shelf-life
 * **Final report 2008**
- HNS 150 Managing downy mildew epidemics in rose production systems by early detection and treatment of infection sources

HNS 165 Prediction and sustainable management of rose powdery mildew

HNS 173 Epidemiology and prediction of rose downy mildew

Weeds (Crop Protection)

HNS 132 Roses: Triazine-free herbicide programmes

* **Final report 2008**

HNS 175 Liverwort control using novel techniques

Water, energy & climate change

HNS 141 Improving the quality of HNS and roses using irrigation and fertigation management techniques

* **Annual report 2007, 2008, final 2009**

Varieties/Products

HNS 6 Clonal rootstocks for standard roses and trees

* **Final Reports 1992; 1993; 1994**

HNS 6a Clonal rootstocks for trees and roses to improve quality and quantity of production

* **Final Reports 1992; 1993; 1994**

HNS 6b Maintenance of plants with clonal rootstock potential

* **Final Report 1998**

HNS 7 Budding and budwood quality and management for trees and roses

* **1. Report 1987/90; 2. Report 1987/92**

HNS 54 Rose: standard stem production systems suitable for containerised marketing

* **Final Report 1996**

HNS 56a Roses: module production of rootstocks - a feasibility study

* **Final Report 1996**

Product scheduling/supplychain

HNS 65 Development of scheduling techniques for containerised bush roses for successional spring and summer sales

* **Final Report 1996**

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

- HNS 56 The influence of pruning, rootstock type and planting method on the containerisation of bush roses
* **Final Report 1996**
- HNS 56b Roses: improving establishment in containerised bush roses
* **Final Report 1998**
- HNS 65a Roses : predictive model development and testing for flowering in containerised crops
* **Final Report 2000**
- HNS 83a Roses: improving early establishment of bare root roses in containers using auxin root dips
* **Final Report 1998**
- HNS 141 Improving the quality of HNS and roses using irrigation and fertigation management techniques
* **Annual report 2007, 2008, final 2009**
- HNS 175 Liverwort control using novel techniques

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Shrubs Group

Diseases & Disorders (Crp Pro)

- HNS 49b Influence of environmental factors and crop management on the incidence of disease on liners of overwintered hardy nursery stock species
* **Final Report 1995**
- HNS 63 Comparison of chemical disinfectants for treatment of capillary matting stood on sand contaminated with *Fusarium oxysporum* f.sp. *Dianthi*
* **Final Report 1995; Factsheet 31/96; 36/96**
- HNS 68 Container-grown shrubs: under-performance of plants related to root behaviour
* **Final Report 1999**
- HNS 71 Ornamental nursery stock: examination of the distribution and importance of bacterial diseases
* **Final Report 1997**
- HNS 72 Evaluation of a range of fungicides for controlling *Phoma* leaf spot on *Vinca minor*
* **Final Report 1997**
- HNS 79 Hebe: control of downy mildew on container-grown plants
* **Final Report 2000; Factsheet 04/04**
- HNS 128 Investigation into the epidemiology and control of *Stemphylium* (*Pleospora*) leaf-spot of Hebe

* **Final report 2006**

HNS 146 Aspects of the biology and control of fusarium wilt in Hebe

* **Annual report 2007, 2008**

HNS 169 Choisy: surveys of the occurrence of root rotting and potential causes

* **final report 2009**

Pests (Crop Protection)

HNS 62 A study of the location of oviposition sites by vine weevil in nursery stock

* **Final Report 1995**

HNS 169 Choisy: surveys of the occurrence of root rotting and potential causes

* **final report 2009**

HNS 170 HNS: initial evaluation of Trichogramma brassicae parasites for control of Carnation tortrix

* **Final report 2009**

HNS 177 Further commercial evaluation of Trichogramma brassicae parasitoids for long-term biological control of Carnation tortrix

Weeds (Crop Protection)

HNS 28a Chemical weed control in outdoor container grown hardy ornamental nursery stock

* **Final Report 1996; Factsheet 42/96**

HNS 35 Investigation of the efficiency and phytotoxicity of herbicides for use in container HNS production outdoors

* **Final Report 1993**

HNS 35a Chemical weed control in outdoor container grown hardy ornamental nursery stock

* **Final Report 1996; Factsheet 42/96**

HNS 35b Container HNS - herbicide screening under protection

* **Final Report 1995**

HNS 35e Chemical weed control in outdoor container grown herbaceous perennial nursery stock

* **Final Report 1993**

HNS 35f Assessment of the efficacy and phytotoxicity of herbicides on outdoor container grown nursery stock

* **Final Report 1996**

HNS 35g Chemical weed control in container-grown nursery stock under protection

* **Final Report 1998**

HNS 66 Non-chemical weed control in container grown nursery stock

* **Final Report 1998**

HNS 70 The use of contact herbicides on container grown nursery stock over winter

* **Final Report 1997**

HNS 70a Container HNS: Use of contact herbicides in the nursery situation

* **Final Report 2000**

HNS 93 Nursery stock propagation: moss, liverwort and algae control

* **Final Report 2001**

HNS 93a Moss, liverwort and algae in HNS

HNS 93c Protected container grown nursery stock: chemical and non-chemical screening for moss and liverwort control in liners

* **Current; Report 2004**

HNS 104 Weed control in container grown nursery stock - workshops for growers

HNS 111 Container HNS: Herbicides for shrubs and herbaceous perennials - for use in the growing crop

* **Final Report 2003**

HNS 167 Hardy Ornamental Nursery Stock: preventing outdoor container grown nursery stock plants rooting through into capillary sand beds via the use of herbicide treatments to the surface of the bed

HNS 175 Liverwort control using novel techniques

Water, energy & climate change

HNS 38 Water use under different hardy nursery stock container systems

* **Final Report 1995**

HNS 97 Improving the control and efficiency of water use in container-grown hardy ornamental nursery stock

* **Final Report 2003; Factsheet 01/06**

HNS 107a Container HNS: improving water management within growing media

* **Final Report 2004**

Labour utilisation/ergonomics

HNS 46a Analysis of working systems from propagation through to potting of container plants to identify areas for improved labour efficiency and management

* **Video "Improving efficiency in potting"**

Varieties/Products

HNS 18 Plant breeding: improved shrubs and trees

Product scheduling/supplychain

HNS 28 Container production: influence of production methods of plant quality and shelf life

* **Final Report 1993; 1994; Factsheet 41/97**

HNS 46 Analysis of existing systems for the collection, collation and dispatch of container plants and

identify potential areas for improvement

* **Video & manual 1993**

Nutrition & other inputs

HNS 1	Container grown plants: winter hardiness and protection against winter damage * Report 1989; Report 1987/90
HNS 2	Composts for container plant production * Final Report 1987
HNS 27	Propagation: stock plant and cutting processes influencing subsequent plant quality * Final Report 1995
HNS 31	Evaluation of weed control treatments in tree and shrub seedbeds and first outdoor transplants * Final Report 1993
HNS 31a	Tree and shrub seed beds: continued evaluation of weed control treatments * Final Report 1997
HNS 38a	Estimating irrigation needs for HNS in containers * Final Report 1994
HNS 39	Container grown nursery stock - growth regulation * Final Report 1996
HNS 39a	Growth regulation of container grown nursery stock * Final Report 1996
HNS 39b	An examination of the use of plant growth regulators on liners of container-grown nursery stock * Report 1997 & 1998
HNS 40	Pruning for quality with minimum reduction in size * Final Report 1996; Factsheet 28/97; 31/97
HNS 40a	Optimising pruning of micropropagated and conventional propagated container grown plants * Final Report 1996; Final Report 1997
HNS 42a	Supplementary lighting for alpiners, herbaceous and hardy nursery stock species * Final Report 1994
HNS 43	Container grown nursery stock: controlled release fertiliser screening * Final Report 1994; Factsheet 05/05
HNS 43a	An investigation of the use of controlled release fertilisers (CRF) for spring potting of container nursery stock grown outdoors * Final Report 1996; Factsheet 05/05
HNS 51	Seeds: evaluation of new pretreatment techniques for improved germination of native and ornamental woody species
HNS 55	Strategies for liner production designed to achieve high quality container plants

* **Final Report 1996; Factsheet 27/97**

HNS 67 Translation of the Dutch report ("Kwaliteits Beheersing in de Keten") from Boshoop on the handling of bare root transplants

* **Pub: 'Quality control in the chain'**

HNS 69 Ornamental shrubs: developing the concept of the 'designer liner'

* **Final Report 1999**

HNS 84 Development of effective overwintering strategies for rooted cuttings and young liners

* **Final Report 2000**

HNS 90 Nursery stock propagation: nutrition of rooted cuttings in modular trays

* **Final Report 2003; Final Report 2004**

HNS 99 HNS: A study of the potential benefits of mycorrhizas in containerised production systems

* **Final Report (HDC News article May 04)**

HNS 107 Container HNS: use of capillary matting under protection

* **Final Report 2003; Factsheet 01/06**

HNS 175 Liverwort control using novel techniques

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Container Grown Trees Group

Diseases & Disorders (Crp Pro)

HNS 25 Control of bacterial canker.

HNS 29 Acer: control of verticillium wilt

* **Final Report 1993**

HNS 80 Japanese Maples (Acer spp.): an examination of the causes of stem disease problems

* **Final Report 1998**

HNS 109 Investigation into the cause(s) of stem canker/die-back in container grown Malus, Plums, Peaches, and ornamental Prunus

* **Final Report 2005 (HDC News article)**

Pests (Crop Protection)

HNS 177 Further commercial evaluation of Trichogramma brassicae parasitoids for long-term biological control of Carnation tortrix

Weeds (Crop Protection)

HNS 175 Liverwort control using novel techniques

Varieties/Products

HNS 6 Clonal rootstocks for standard roses and trees

* **Final Reports 1992; 1993; 1994**

HNS 6a Clonal rootstocks for trees and roses to improve quality and quantity of production

* **Final Reports 1992; 1993; 1994**

HNS 6b Maintenance of plants with clonal rootstock potential

* **Final Report 1998**

HNS 7 Budding and budwood quality and management for trees and roses

* **1. Report 1987/90; 2. Report 1987/92**

HNS 18 Plant breeding: improved shrubs and trees

HNS 20a EMLA ornamental Prunus and Malus varieties and rootstocks: field trials to promote their uptake

* **Final Report 1993**

HNS 20b Support for production and maintenance of true-to-type disease free nuclear stocks of Malus and Prunus (the EMLA scheme)

* **Final Report 1998**

Product scheduling/supplychain

HNS 45 Management opportunities in the budding nursery for planting liners and growing trees for containerisation

* **Final Report 1996; Factsheet 26/97; 29/97**

Nutrition & other inputs

HNS 1 Container grown plants: winter hardiness and protection against winter damage

* **Report 1989; Report 1987/90**

HNS 2 Composts for container plant production

* **Final Report 1987**

HNS 31 Evaluation of weed control treatments in tree and shrub seedbeds and first outdoor transplants

* **Final Report 1993**

HNS 31a Tree and shrub seed beds: continued evaluation of weed control treatments

* **Final Report 1997**

HNS 175 Liverwort control using novel techniques

General

- HNS 20 Funding for maintenance of EMLA scheme
- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown HNS

Field Grown Climbers Group

Diseases & Disorders (Crp Pro)

- HNS 4 Defoliation of field grown stock
- HNS 52 Clematis: aspects of the biology and control of clematis wilt
* **Final Report 1999**
- HNS 92 Hedera : biology and epidemiology of Xanthomonas leaf spot
* **Final Report 2001**
- HNS 114 Investigation into widespread death of Clematis armandii subjects
* **Final Report 2003**

Nutrition & other inputs

- HNS 95 Investigation into the controlled release fertiliser requirements of climbers
* **Final Report 2000; Factsheet 05/05**

General

- HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?
- HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Conifers Group

Diseases & Disorders (Crp Pro)

- HNS 4 Defoliation of field grown stock

HNS 142 Manipulation of copper in irrigation water as component of integrated crop protection

* **Annual 2007, 2008, final 2009**

HNS 148 A desk study to determine the possible causes of tip burn in conifers

* **Final Report 2007**

Pests (Crop Protection)

HNS 151 Is feeding by the conifer aphid *Cinara cupressivora* causing the browning seen in conifer hedges

* **Final report 2008**

HNS 177 Further commercial evaluation of *Trichogramma brassicae* parasitoids for long-term biological control of Carnation tortrix

Water, energy & climate change

HNS 142 Manipulation of copper in irrigation water as component of integrated crop protection

* **Annual 2007, 2008, final 2009**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Ericaceous Group

Diseases & Disorders (Crp Pro)

HNS 4 Defoliation of field grown stock

HNS 17a Heathers: biology and control of fungal pathogens

* **Reports 1988, 1989 & 1990**

HNS 17b Heathers: control of disease by fungicides

* **Final Report 1988/89**

HNS 17c Heather and heaths: fungal and integrated control programmes

* **Final Report 1993**

HNS 64 Chemical control of *Rhododendron* powdery mildew

* **Final Report 1995**

Nutrition & other inputs

HNS 96 Investigation into the controlled release fertiliser requirements of heathers

* **Final Report 2000; Factsheet 05/05**

HNS 96a Heathers - A study of potential improvements in nutrition

* **Final Report 2002; Factsheet 05/05**

HNS 102 Improved flowering of Rhododendron and other woody plant species

* **Final Report 2003**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Hedging Group

Diseases & Disorders (Crp Pro)

HNS 4 Defoliation of field grown stock

Pests (Crop Protection)

HNS 151 Is feeding by the conifer aphid *Cinara cupressivora* causing the browning seen in conifer hedges

* **Final report 2008**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Herbaceous Group

Diseases & Disorders (Crp Pro)

HNS 4 Defoliation of field grown stock

Nutrition & other inputs

HNS 43c Hardy herbaceous perennials: a study of nutritional requirements

* **Final Report 2000; Factsheet 05/05**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Roses Group

Diseases & Disorders (Crp Pro)

HNS 4 Defoliation of field grown stock

HNS 24 Roses: control of downy mildew

* **Final Report 1989**

HNS 106 Roses: fungicides for the control of powdery mildew, black spot and rust

* **Final Report 2001; Factsheet 12/04**

HNS 106a Roses: fungicides for the control of powdery mildew, blackspot and rust - further testing and nursery trials

* **Final Report 2001; Factsheet 12/04**

HNS 150 Managing downy mildew epidemics in rose production systems by early detection and treatment of infection sources

HNS 165 Prediction and sustainable management of rose powdery mildew

HNS 173 Epidemiology and prediction of rose downy mildew

Weeds (Crop Protection)

HNS 132 Roses: Triazine-free herbicide programmes

* **Final report 2008**

Water, energy & climate change

HNS 141 Improving the quality of HNS and roses using irrigation and fertigation management techniques

* **Annual report 2007, 2008, final 2009**

Varieties/Products

HNS 6 Clonal rootstocks for standard roses and trees

* **Final Reports 1992; 1993; 1994**

HNS 6a Clonal rootstocks for trees and roses to improve quality and quantity of production

* **Final Reports 1992; 1993; 1994**

HNS 6b Maintenance of plants with clonal rootstock potential

* **Final Report 1998**

HNS 7 Budding and budwood quality and management for trees and roses

* **1. Report 1987/90; 2. Report 1987/92**

Nutrition & other inputs

HNS 101 Roses: 'Tipping back' to improve quality in field bush rose production

* **Final Report 2001; Factsheet 18/02**

HNS 141 Improving the quality of HNS and roses using irrigation and fertigation management techniques

* **Annual report 2007, 2008, final 2009**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Shrubs Group

Diseases & Disorders (Crp Pro)

HNS 4 Defoliation of field grown stock

Pests (Crop Protection)

HNS 177 Further commercial evaluation of *Trichogramma brassicae* parasitoids for long-term biological control of Carnation tortrix

Varieties/Products

HNS 7a Field-budded trees and shrubs: raise quality and quantity

* **1. Report 1987/90; 2. Report 1987/92**

HNS 18 Plant breeding: improved shrubs and trees

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Field Grown Trees Group

Diseases & Disorders (Crp Pro)

- HNS 4 Defoliation of field grown stock
- HNS 25 Control of bacterial canker.
- HNS 29 Acer: control of verticillium wilt
* **Final Report 1993**
- HNS 30 Field budding: identification of the microbial component of bud failure, its epidemiology and control
* **Final Report 1993**
- HNS 137 Evaluation of chemical and biological pre-plant soil treatments for control of Verticillium wilt in field grown trees
* **Annual report 2006, 2007, 2008**
- HNS 168 Rosaceous trees: Evaluation of treatments for control of replant diseases in Sorbus aucuparia

Pests (Crop Protection)

- HNS 168 Rosaceous trees: Evaluation of treatments for control of replant diseases in Sorbus aucuparia
- HNS 177 Further commercial evaluation of Trichogramma brassicae parasitoids for long-term biological control of Carnation tortrix

Weeds (Crop Protection)

- HNS 78 Field-grown trees: the effect of herbicide programmes on bud-take and maiden tree growth
* **Final Report 1999; Final Report 2000**

Varieties/Products

- HNS 6 Clonal rootstocks for standard roses and trees
* **Final Reports 1992; 1993; 1994**
- HNS 6a Clonal rootstocks for trees and roses to improve quality and quantity of production
* **Final Reports 1992; 1993; 1994**
- HNS 6b Maintenance of plants with clonal rootstock potential
* **Final Report 1998**
- HNS 7 Budding and budwood quality and management for trees and roses
* **1. Report 1987/90; 2. Report 1987/92**

HNS 7a Field-budded trees and shrubs: raise quality and quantity

* **1. Report 1987/90; 2. Report 1987/92**

HNS 18 Plant breeding: improved shrubs and trees

HNS 20a EMLA ornamental Prunus and Malus varieties and rootstocks: field trials to promote their uptake

* **Final Report 1993**

HNS 20b Support for production and maintenance of true-to-type disease free nuclear stocks of Malus and Prunus (the EMLA scheme)

* **Final Report 1998**

General

HNS 20 Funding for maintenance of EMLA scheme

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Aquatic HNS

Waterplant Group

Diseases & Disorders (Crp Pro)

HNS 26 Waterlily: investigation of spread of a possible disease problem causing plant death

* **Report 1989/90**

HNS 145 Guidelines for integrated pest and disease management for ornamental aquatic plants

* **Final report 2007**

Pests (Crop Protection)

HNS 145 Guidelines for integrated pest and disease management for ornamental aquatic plants

* **Final report 2007**

Weeds (Crop Protection)

HNS 176 Novel methods of algal control in aquatic plant production tanks

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings

Alpine HNS

Alpines Group

Weeds (Crop Protection)

HNS 74 Alpines: Chemical weed control in container grown plants

* **Final Report 1998**

Product scheduling/supplychain

HNS 85 Dianthus: the development of a schedule for the batched production of hardy alpine/dwarf pinks in flower

Nutrition & other inputs

HNS 42a Supplementary lighting for alpines, herbaceous and hardy nursery stock species

* **Final Report 1994**

General

HNS 149 Does secondary metabolism broker a trade off between crop quality and pest or pathogen resistance in roses?

HNS 255 (P) Biobeds: The safe disposal and treatment of pesticide waste and washings