

1. Non-Edible Crops

Alstroemeria (PC)

Water, energy & climate change

PC 33a Alstroemeria: the effects of irrigation regime on the flower production cycle

* **Final Report 1992**

PC 33b Alstroemeria: evaluation of irrigation/nutrition requirements relative to stage of growth for a range of commercially grown varieties of Alstroemeria

* **Final Report 1996**

Product scheduling/supplychain

PC 205 Alstroemeria: towards understanding and optimising productivity, quality and scheduling of Alstroemeria under UK production conditions through monitoring and analysing data from grower holdings

* **Final report 2008**

Nutrition & other inputs

PC 192 A review of research work and production practices in Alstroemeria cultivation

* **Final Report 2003**

General

PC 33 Alstroemeria

* **Final Report 1993**

Bedding Sub-Group

Diseases & Disorders (Crp Pro)

PC 24a AYR Chrysanthemums: assessment of disease levels in hydroponic growing systems

* **Final Report 1992**

Product scheduling/supplychain

PC 45a Fuchsia: effect of variety on shelf life properties and the potential for extending shelf life with chemical and cultural means

* **Final Report 1993**

Begonia (PC Pot)

Diseases & Disorders (Crp Pro)

PC 46a Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem

Water, energy & climate change

PC 6a The effects of humidity on poinsettia and begonia

* **Final Report 1990**

Varieties/Products

PC 46a Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem

Nutrition & other inputs

PC 6a The effects of humidity on poinsettia and begonia

* **Final Report 1990**

Cineraria (PC Bedding)

Product scheduling/supplychain

PC 145 Cineraria: investigation of factors controlling flowering and development of a predictive model

* **Final Report 2000**

Cut Flower Group

Diseases & Disorders (Crp Pro)

BOF 44 Protected and outdoor cut flowers: development of effective and crop safe fungicide treatments for the control of powdery mildew

* **Final Report 2003; Factsheet 11/03**

BOF 61b Daffodils: Alternatives to the use of formaldehyde in HWT tanks for the control of stem nematode and Fusarium basal rot (Extension to project BOF 61a)

BOF 68 A Grower Handbook for UK Narcissus Production

BOF 144 (p) Bulbs and Flowers: Pest and disease information cards

* **Current**

PC 179 Lisianthus (Eustoma): control of Downy mildew (Peronospora chlorae)

* **Final Report 2003; Factsheet 12/03**

PC 213 Protected stock: aspects of the biology and control of Fusarium wilt, a new disease problem

* **Final Report 2006**

PC 213a Protected cut flowers: evaluation of two steaming methods for disinfesting soil of Fusarium oxysporum and Sclerotinia sclerotiorum (extension to PC 213)

* **final report**

PC 239a Protected herbs; ornamentals and celery: development of an on-nursery rearing system for Atheta

coriaria for reduced cost biological control of sciarid and shore flies - extension to PC 239

PC 249 Cut flowers: evaluation of drip-applied chloropicrin for control of soil-borne Fusarium oxysporum, Rhizoctonia species, Sclerotinia sclerotiorum and weed seeds.

* **Final Report 2006**

PC 249a Cut flowers: evaluation of drip-applied chloropicrin for control of soil-borne Fusarium oxysporum, Rhizoctonia species, Sclerotinia sclerotiorum and weed seeds (Phase II)

* **Final report 2006**

Pests (Crop Protection)

BOF 144 (p Bulbs and Flowers: Pest and disease information cards

* **Current**

PC 177 Protected Flower Crops: evaluation of sugar products to improve the control of western flower thrips

* **Final Report 2001**

PC 236 A review of alternatives to chemical pesticides as post-harvest treatments for cut flowers

* **Final Report 2005**

Water, energy & climate change

PC 33a Alstroemeria: the effects of irrigation regime on the flower production cycle

* **Final Report 1992**

PC 33b Alstroemeria: evaluation of irrigation/nutrition requirements relative to stage of growth for a range of commercially grown varieties of Alstroemeria

* **Final Report 1996**

Varieties/Products

PC 137 Novel cut flowers: opportunities and research requirements for UK production

* **Final Report 1998**

Product scheduling/supplychain

PC 205 Alstroemeria: towards understanding and optimising productivity, quality and scheduling of Alstroemeria under UK production conditions through monitoring and analysing data from grower holdings

* **Final report 2008**

Nutrition & other inputs

PC 168 Cut flowers: evaluation and development of plastic films and low cost growing structures

* **Final Report 2003**

PC 192 A review of research work and production practices in Alstroemeria cultivation

* **Final Report 2003**

General

PC 33 Alstroemeria
* **Final Report 1993**

Cyclamen (PC)

Diseases & Disorders (Crp Pro)

PC 50 Cyclamen: integrated control of fusarium wilt
* **Final Report 1992; Factsheet 5/95b**

PC 50b Cyclamen: evaluation of integrated control systems for the control of fusarium wilt
* **Final Report 1994**

Varieties/Products

PC 214 Cyclamen: an assessment of cultivars during production and under shelf-life conditions
* **Final Report 2006**

PC 235 Bedding plants: Assessment of the suitability of a range of miniature cyclamen varieties for use as late summer/autumn flowering bedding plants
* **Final report 2006**

Fuchsia

Water, energy & climate change

PC 41b Fuchsia: observation trial of DIF on a range of cultivars
* **Final Report 1995**

Product scheduling/supplychain

PC 45a Fuchsia: effect of variety on shelf life properties and the potential for extending shelf life with chemical and cultural means
* **Final Report 1993**

Hydrangea

Varieties/Products

PC 44 Hydrangea: preliminary trial on the production of early quality plants
* **Final Report 1992**

PC 44a Hydrangea: evaluation of new cultivars for growth, habit, marketability and shelf-life for marketing from the end of February to the end of March
* **Final Report 1996**

Impatiens (PC Pot)

Diseases & Disorders (Crp Pro)

PC 230 Detection and control of downy mildew on ornamentals

* **Annual report 2007, Annual report 2008**

Product scheduling/supplychain

PC 158 New guinea impatiens: early season production and improvement of shelf-life

* **Final Report 1999**

Lily (PC)

Waste/Environment

PC/BOF 140 PC/BOF 140

* **Final Report 2003**

Nutrition & other inputs

PC/BOF 140 PC/BOF 140

* **Final Report 2003**

Other Protected Crop Ornamenta

Diseases & Disorders (Crp Pro)

PC 97 Identification of sources of inoculum and the development of rapid diagnostic tests for Pythium infestation of ornamentals on nurseries

* **Final Report 1998**

PC 97a Ornamentals : sources of Pythium inoculum, fungicide resistance, and efficacy of surface sterilants

* **Final Report 2001**

PC 118 Control and significance of viruses in trailing petunia and other ornamental species (factsheet for growers)

* **Factsheet 4/96**

PC 121 Integrated chemical and environmental control of grey mould (Botrytis cinerea) in protected container grown ornamentals (LINK)

* **Final Report 2002; Factsheet 23-25 2002**

PC 179 Lisianthus (Eustoma): control of Downy mildew (Peronospora chlorae)

* **Final Report 2003; Factsheet 12/03**

PC 252 Protected ornamentals: detection, prevalence and control of seed-borne diseases

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

Pests (Crop Protection)

CP 17a Pesticide gap analysis update for ornamental crops (2006)

* **Final Report 2006**

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

* **Final report 2009**

- PC 93 The future role of Torque (fenbutatin oxide) in the integrated control of two-spotted spider mites (TSSM) in protected edible and ornamental crops
- * **Final Report 1996**
- PC 95 A literature review of tomato spotted wilt virus (TSWV) and its vector western flower thrips (WFT) with reference to the production of protected ornamental plants
- * **Final Report 1996; Factsheet 32/97**
- PC 147 Control of sciarid fly during ornamental plant propagation
- * **Final Report 1998**
- PC 147a Ornamentals: evaluation of the effect of insecticide granules in the plug stage on plant quality and sciarid fly control in finished plants
- * **Final Report 2001; Factsheet 08/02**
- PC 239 Protected herbs, ornamentals and celery: development of an on-nursery rearing system for Atheta coriaria for reduced cost biological control of sciarid and shore flies
- * **Final report 2008**
- PC 254 Phytotoxicity testing of new pesticides as Dip treatments to unrooted ornamental cuttings; in order to remove or reduce the risk of Bemisia tabaci infestation
- * **Final report 2007**
- PC 291 Protected ornamentals: evaluation of control options for bacterial diseases of pot plants
- PC 292 Protected chrysanthemum: Development of a fungicide strategy for the control of White Rust
- * **Final report 2009**

Water, energy & climate change

- PC 112 Foliage plants: improving winter production and plant quality with the use of supplementary lighting
- * **Final Report 1995**
- PC 114 Osteospermum: extending the season of production and examination of environmental effects on quality
- * **Final Report 1996; Factsheet 43/96**
- PC 114a Osteospermum: examination of the use of chilling treatments on a range of cultivars and evaluation of the effect of interrupted periods of warmer temperatures on floral initiation and subsequent flowering
- * **Final Report 1997**
- PC 166 Protected ornamentals: the efficiency of water use in different production systems
- * **Final Report 2000**
- PC 172 The use of dynamic climate control systems for the production of high value ornamental crops in the uk - a technical assessment
- * **Final Report 2001**
- PC 190 Protected ornamentals: investigation into the potential savings available from adopting energy optimisation principles in UK glasshouse production
- * **Final Report 2002; Final Report 2003**
- PC 197 Protected ornamentals: a demonstration of the use of advanced greenhouse environmental controls for energy saving

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

PC 207 Protected ornamentals: improved guidelines for humidity measurement and control when using advanced climate control strategies

* **Final Report 2005**

Waste/Environment

PC 59a Environmental impact of run-off from the production of protected ornamental crops

PC 255 (Pa Biobeds: The safe disposal and treatment of pesticide waste and washings

* **Final report 2008**

PC/ HNS 25 Biobeds/ biofilters for the safe treatment of pesticide waste and washings (extension to PC/HNS 255)

Product scheduling/supplychain

PC 146 Reiger begonia: supplementary lighting techniques to improve the quality of early season crops

* **Final Report 1999**

PC 221 Developing novel approaches to the sustainable production of ornamentals in the UK HDC Research Fellowship

* **Final report 2007**

PC 224 Improved scheduling of primrose

* **Final report 2008**

PC 238 Improved scheduling of violas and pansies through the use of night-break lighting

* **Final report 2007**

PC 247 Collaborative research programme in partnership with Saxon State Institute for Agriculture, Pillnitz, Germany, for the development of "new" ornamental plants for early season sales

* **Final report 2007**

PC 267 Collaborative research programme in partnership with Saxon State Institute for Agriculture, Pillnitz, Germany for the development of 'new' ornamental plants for early season sales. Part II: Scheduled production and quality improvement

* **Final report 2007**

Nutrition & other inputs

CP 37 Decision support for glasshouse ornamental production using digital imaging and artificial neural networks (HDC Studentship)

* **Final report 2008**

PC/HNS202 Review of IT systems requirements for the HNS and Ornamentals industry

PC 112 Foliage plants: improving winter production and plant quality with the use of supplementary lighting

* **Final Report 1995**

PC 114 Osteospermum: extending the season of production and examination of environmental effects on quality

* **Final Report 1996; Factsheet 43/96**

PC 114a Osteospermum: examination of the use of chilling treatments on a range of cultivars and evaluation of the effect of interrupted periods of warmer temperatures on floral initiation and subsequent flowering

* **Final Report 1997**

PC 130 Passiflora: factors influencing the long term storage and germination of seed

* **Annual Reports 1995/1996/1997**

PC 134 Ornamentals: a review of the role of ethylene on post harvest flower senescence and abscission and methods to ameliorate ethylene effects

* **Final Report 1997; Factsheet 24/97**

PC/HNS202 Review of IT systems requirements for the HNS and Ornamentals industry

* **Final Report 2004**

General

CP 24 Future development of the British Ornamental Plant Producers (BOPP) Accreditation Scheme to encompass all sectors of the UK Ornamentals Industry

* **Current**

PC 91 Grant to the BBPA to assist with the establishment of the Ornamentals Advice Centre

PC 91a Ornamentals Advice Centre: proposal for a telephone survey

* **Final Report 1995**

Pansy

Diseases & Disorders (Crp Pro)

PC 38 Black root rot of pansy and other bedding plants: an investigation of control measures, including fungicide screening

* **Final Report 1992**

PC 38a Epidemiology of black root rot in bedding plants

* **Final Report 1996; Factsheet 19/02**

PC 38b Effect of pH and plug nutrition on black root rot in autumn pansy

* **Final Report 1993**

PC 38c Bedding plants: comparison of chemical disinfectants for treatment of plastic trays contaminated with *Thielaviopsis basicola*

* **Final Report 1995; Factsheet 19/02**

Poinsettia

Diseases & Disorders (Crp Pro)

PC 191 Poinsettia: evaluation of phytotoxic effects of fungicides applied to mature plants for the control of powdery mildew

* **Final Report 2002; Factsheet 17/02**

Pests (Crop Protection)

PC 70 Poinsettia: integrated pest management of whiteflies

* **Final Report 1993**

Water, energy & climate change

PC 6 The effects of humidity on growth of tomato, cucumber and poinsettia

* **1. Report 1987/88; 2. Report 1988/89**

PC 6a The effects of humidity on poinsettia and begonia

* **Final Report 1990**

PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production

* **Final Report 1997**

Labour utilisation/ergonomics

PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production

* **Final Report 1997**

Varieties/Products

PC 71 Assessment of new Poinsettia cultivars for production in the UK for marketing in December

* **Final Report 1993**

PC 155 Poinsettia: strategies for the reduction of plant growth regulator use

* **Final Report 2001; Computer program 'Poi**

PC 155a Extension to HDC project PC 155 (Poinsettia: strategies for the reduction in the use of plant growth regulators): Development of HDC Poinsettia Tracker™ v2.0

PC 156 Poinsettia: commercial evaluation of new varieties and selections

* **Final Report 2002**

PC 156a Poinsettia: an assessment of the marketing and shelf-life quality of new varieties and selections grown under commercial conditions

* **Final report 2007**

Product scheduling/supplychain

PC 71a Poinsettia: investigation of the response of a range of cultivars to cultural and chemical treatments with a view to improving shelf-life

* **Final Report 1994**

PC 71b Poinsettia: evaluation of the effect of pinching technique and compost type on the growth, development and shelf life of poinsettia cultivars

* **Final Report 1995**

- PC 71d Poinsettia: investigation of the impact of temperature and light during the final phase of growth and an assessment of the interaction between marketing stage and shelf-life
* **Final Report 1998; Factsheet 36/98**
- PC 127 Poinsettia: translation of the Dutch report "Poinsettia: rijende of vallende ster?" from Aalsmeer on the production and shelf-life of poinsettia
* **Final Report 1996**
- PC 208 Poinsettia: assessment of the value of lighting a late crop to improve throughput

Nutrition & other inputs

- PC 6a The effects of humidity on poinsettia and begonia
* **Final Report 1990**
- PC 243 Poinsettia: Assessment of strategies for efficient utilisation of nursery resources
* **Final report 2007**

Pot Sub-Group

Diseases & Disorders (Crp Pro)

- PC 46a Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem
- PC 50a Pot plants: integrated control of root diseases
* **Final Report 1993**
- PC 191 Poinsettia: evaluation of phytotoxic effects of fungicides applied to mature plants for the control of powdery mildew
* **Final Report 2002; Factsheet 17/02**
- PC 230 Detection and control of downy mildew on ornamentals
* **Annual report 2007, Annual report 2008**

Pests (Crop Protection)

- PC 1a Narcissus: forecasting and control of large Narcissus fly
- PC 1c Narcissus: integrated control of the large narcissus fly
- PC 70 Poinsettia: integrated pest management of whiteflies
* **Final Report 1993**
- PC 291 Protected ornamentals: evaluation of control options for bacterial diseases of pot plants
- PC 292 Protected chrysanthemum: Development of a fungicide strategy for the control of White Rust

* **Final report 2009**

Water, energy & climate change

- PC 6 The effects of humidity on growth of tomato, cucumber and poinsettia
* **1. Report 1987/88; 2. Report 1988/89**
- PC 6a The effects of humidity on poinsettia and begonia
* **Final Report 1990**
- PC 13 Winter quality of pot chrysanthemums
- PC 13b Supplementary lighting for pot chrysanthemums
* **Final Report 1992**
- PC 13c Chrysanthemums: the influence of supplementary lighting on winter quality and shelf-life of Yoder bred varieties of Pot'mums
* **Final Report 1993**
- PC 42 Pot plants: a comparison of light sources for use as supplementary lighting for winter pot plant production
* **Final Report 1992**
- PC 46 Pot Plants: summer shading / humidification
* **Final Report 1995**
- PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production
* **Final Report 1997**
- PC 79 Pot plants: optimisation of light intensity and CO2 utilisation for Christmas production
* **Final Report 1993**

Labour utilisation/ergonomics

- PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production
* **Final Report 1997**

Varieties/Products

- PC 44 Hydrangea: preliminary trial on the production of early quality plants
* **Final Report 1992**
- PC 44a Hydrangea: evaluation of new cultivars for growth, habit, marketability and shelf-life for marketing from the end of February to the end of March
* **Final Report 1996**
- PC 46a Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem
- PC 71 Assessment of new Poinsettia cultivars for production in the UK for marketing in December

* **Final Report 1993**

PC 155 Poinsettia: strategies for the reduction of plant growth regulator use

* **Final Report 2001; Computer program 'Poi**

PC 155a Extension to HDC project PC 155 (Poinsettia: strategies for the reduction in the use of plant growth regulators): Development of HDC Poinsettia Tracker™ v2.0

PC 156 Poinsettia: commercial evaluation of new varieties and selections

* **Final Report 2002**

PC 156a Poinsettia: an assessment of the marketing and shelf-life quality of new varieties and selections grown under commercial conditions

* **Final report 2007**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

Product scheduling/supplychain

PC 71a Poinsettia: investigation of the response of a range of cultivars to cultural and chemical treatments with a view to improving shelf-life

* **Final Report 1994**

PC 71b Poinsettia: evaluation of the effect of pinching technique and compost type on the growth, development and shelf life of poinsettia cultivars

* **Final Report 1995**

PC 71d Poinsettia: investigation of the impact of temperature and light during the final phase of growth and an assessment of the interaction between marketing stage and shelf-life

* **Final Report 1998; Factsheet 36/98**

PC 79 Pot plants: optimisation of light intensity and CO₂ utilisation for Christmas production

* **Final Report 1993**

PC 80 New Guinea Impatiens: the potential for extending the growing season and improving plant production and shelf life properties using cultural and chemical means

* **Part 1 and 2: Final Report 1993**

PC 80a New Guinea Impatiens: extending the growing season and improving plant production and shelf life using cultural and chemical means

* **Part 1 and 2: Final Report 1994**

PC 127 Poinsettia: translation of the Dutch report "Poinsettia: rijende of vallende ster?" from Aalsmeer on the production and shelf-life of poinsettia

* **Final Report 1996**

PC 152 Robust product design and prediction for post-harvest pot plant quality and longevity (LINK)

* **Final Report 2003**

PC 158 New guinea impatiens: early season production and improvement of shelf-life

* **Final Report 1999**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

PC 203 Practical demonstration of scheduling techniques for flowering patio plants

* **Final Report 2004**

Nutrition & other inputs

PC 6a The effects of humidity on poinsettia and begonia

* **Final Report 1990**

PC 12 Development of interrupted-lighting schedules for a range of AYR spray chrysanthemum cultivars

* **Final Report 87/88; Supplim Report 88/89**

PC 243 Poinsettia: Assessment of strategies for efficient utilisation of nursery resources

* **Final report 2007**

PC 266 Assessment of reflective films for pot plant production

Pot and Bedding Group

Diseases & Disorders (Crp Pro)

PC 24a AYR Chrysanthemums: assessment of disease levels in hydroponic growing systems

* **Final Report 1992**

PC 27 Distortion in bedding plants: a survey to determine the incidence and potential losses caused by the disorder

* **Final Report 1990**

PC 27a Distortion in bedding plants: investigation into the agents causing this disorder

* **Final Report 1993**

PC 38 Black root rot of pansy and other bedding plants: an investigation of control measures, including fungicide screening

* **Final Report 1992**

PC 38a Epidemiology of black root rot in bedding plants

* **Final Report 1996; Factsheet 19/02**

PC 38b Effect of pH and plug nutrition on black root rot in autumn pansy

* **Final Report 1993**

PC 38c Bedding plants: comparison of chemical disinfectants for treatment of plastic trays contaminated with *Thielaviopsis basicola*

* **Final Report 1995; Factsheet 19/02**

PC 87 Control of ringspot on protected hybrid pinks

* **Final Report 2001; Factsheet 23/00**

PC 90 Protected column stocks: evaluation of the efficacy and crop safety fungicide treatments for the control of downy mildew

* **Final Report 1993**

PC 96 Investigation and control of seed-borne Colletotrichum spp. causing anthracnose of lupins and Lavatera

* **Final Report 1994**

PC 143 Bedding plants: control of black root rot and downy mildew (yr 2)

* **Final Report 2000; Factsheet 19/02**

PC 144 (pa) Bulbs and Flowers: Pest and disease information cards

PC 175 Protected bedding plants: biology and control of some important rust diseases

* **Final Report 01; Factsheet 23/00 & 09/02**

FV/HNS/PC2 Bedding Plants: An investigation into the potential growth promoting and disease suppressive effects of different substrate mixes and commercially available bio-stimulants under different nutrient regimes

* **Final report 2006**

Pests (Crop Protection)

PC 18f Pot and Bedding plants: dichlorvos fogs - phytotoxicity tests and effectiveness against western flower thrips

* **Final Report 1991**

PC 18g Pot and Bedding plants: crop safety and control of western flower thrips with dichlorvos fogs

* **Final Report 1992**

PC 93e Narcissus: forecasting and control of large narcissus fly

PC 144 (pa) Bulbs and Flowers: Pest and disease information cards

PC 239 Protected herbs, ornamentals and celery: development of an on-nursery rearing system for Atheta coriaria for reduced cost biological control of sciarid and shore flies

* **Final report 2008**

PC 261 Protected bedding and pot plants: evaluation of western flower thrips control by Atheta coriaria using an on-nursery rearing system

* **Final report 2006**

PC 291 Protected ornamentals: evaluation of control options for bacterial diseases of pot plants

PC 292 Protected chrysanthemum: Development of a fungicide strategy for the control of White Rust

* **Final report 2009**

Water, energy & climate change

PC 41a Bedding plants: to assess the use of DIF during growing on and its influence on shelf life

* **Final Report 1991**

PC 41b Fuchsia: observation trial of DIF on a range of cultivars

* **Final Report 1995**

- PC 41c Mechanisms involved in plant height regulation by temperature (DIF)
- * **Final Report 1995**
- PC 42 Pot plants: a comparison of light sources for use as supplementary lighting for winter pot plant production
- * **Final Report 1992**
- PC 73 Pot plants: a review of the experimentation on shade screens and humidification and the application of this technology in glasshouse pot plant production
- * **Final Report 1993**
- PC 74 Bedding plants: effect of temperature on growth, development and flowering
- * **Final Report 1993**
- PC 74a Bedding plants: effects of the photo-thermal environment on growth, development and flowering
- * **Final Report 1996**
- PC 92 Chrysanthemums: the combined influence of supplementary lighting and difference in temperature (DIF) on winter quality of commercially grown varieties
- * **Final Report 1994; Factsheet 3/95**
- PC 92a Chrysanthemums: the influence of combined supplementary lighting regimes and pot spacings on the quality and economics of the winter production of pot chrysanthemums
- * **Final Report 1995; Factsheet 2/96**
- PC 92b Chrysanthemums: the influence of daylength extension and supplementary lighting during flower maturation on the winter quality of pot chrysanthemums
- * **1. Report 1996; 2. Final Report 1998**
- PC 92c Pot chrysanthemums: comparison of the effects of reduced night-length on winter pot quality when imposed using either assimilation or tungsten lighting
- * **Final Report 1999**
- PC 92d Evaluation of the efficiency of production of winter pot chrysanthemums at 2000 lux and 4000 lux supplementary lighting
- * **Final Report 2002**
- PC 92e Supplementary lighting of pot chrysanthemums - a growers guide
- * **Publication '..pot chrysanthemums guide'**
- PC 94 Bedding plants: an investigation of the effects of a range of light and temperature regimes during the plug stage and their influence on the subsequent performance of the plants
- PC 128 The efficient use of light during bedding plant production (LINK)
- * **Final Report 2002**
- PC 196 Bedding plants: The use of low temperature storage as a scheduling aid
- * **Final Report 2004; Factsheet 09/05**
- PC 196a Beddings plants: the use of low temperature storage as a scheduling aid in bedding plant production (Autumn Pansy and Primrose crops)
- * **Final Report 2004; Factsheet 09/05**

PC 36 Labour in bedding plant production - stage I

* **Video 'Dichlorvos fogs and labour use...**

PC 36a Labour in bedding plant production - stage II defining and describing improved methods for selected operations

* **Video and manual 'Labour use in bedding**

Waste/Environment

PC 113 Bedding plants: evaluation of reduced peat or alternative peat-free substrates for use in bedding plant production

* **Final Report 1995**

Varieties/Products

PC 44 Hydrangea: preliminary trial on the production of early quality plants

* **Final Report 1992**

PC 44a Hydrangea: evaluation of new cultivars for growth, habit, marketability and shelf-life for marketing from the end of February to the end of March

* **Final Report 1996**

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

* **Year 1 Report 1999**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

PC 246 Garden Plants: Development of New Marketing Opportunities Based on Controlled Flowering of Herbaceous Perennials for Early Spring and Late Summer sales

* **Final report 2008**

Product scheduling/supplychain

PC 45 Bedding plants: a review of shelf life

* **Final Report 1992**

PC 45a Fuchsia: effect of variety on shelf life properties and the potential for extending shelf life with chemical and cultural means

* **Final Report 1993**

PC 74b Bedding Plants: Development and validation of a scheduling programme and decision support system for use by growers.

* **Computer program 'Plant Scheduler' 96/97**

PC 74c Bedding plants: optimising returns in production

* **Final Report 1996**

PC 128 The efficient use of light during bedding plant production (LINK)

* **Final Report 2002**

PC 145 Cineraria: investigation of factors controlling flowering and development of a predictive model

* **Final Report 2000**

PC 196 Bedding plants: The use of low temperature storage as a scheduling aid

* **Final Report 2004; Factsheet 09/05**

PC 196a Beddings plants: the use of low temperature storage as a scheduling aid in bedding plant production (Autumn Pansy and Primrose crops)

* **Final Report 2004; Factsheet 09/05**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

PC 234 Bedding Plants: Benchmarking current transport and distribution practices with the aim of identifying factors that determine plant quality during transit and methods to maintain quality

* **Final report 2008**

Nutrition & other inputs

PC 14 Module production of bedding plants; improved seed performance

PC 41 Pot and bedding plants: control of plant stature by manipulation of day and night temperatures (DIF regimes)

* **Final Report 1993**

PC 75 Bedding plants: proposal for the development of a germination room for use by growers to improve germination rates and improve space utilisation

* **Literature Review 1992**

PC 85 Bedding plants: growth regulation by 'air brushing'

* **Final Report 1993**

PC 85a Bedding plants: growth regulation by mechanical brushing

* **Final Report 1996**

PC 86 Bedding plants: investigation of cultural methods for controlling plant height

* **Reports 1993/94 & 1995; Factsheet**

PC 105 An evaluation of the effect of container sizes, sowing dates and temperature on the development and blindness of *Primula vulgaris* cultivars, flowering from mid February to the end of April

* **Final Report 1996; Factsheet 32/96**

PC 106 Evaluation of plant growth regulators as a method of controlling leaf size on bedding primrose and polyanthus varieties grown under protection

* **Final Report 1995**

PC 113 Bedding plants: evaluation of reduced peat or alternative peat-free substrates for use in bedding plant production

* **Final Report 1995**

PC 150 Bedding plants: the use of spectral filters to regulate plant growth

* **Final Report 1999**

FV/HNS/PC2 Bedding Plants: An investigation into the potential growth promoting and disease suppressive effects of different substrate mixes and commercially available bio-stimulants under different nutrient regimes

* **Final report 2006**

General

- BOF/PC 204 Cut flowers & bulbs: Developing the British Ornamental Plant Producers (BOPP) accreditation scheme for cut flower and bulb producers
- PC 78 British Bedding and Pot Plant Association Technical Field Officer
- PC 81 Survey of bedding and pot plant growers
- * **Final Report 1992**
- PC 100a Travel to the ISHS symposium on pot & bedding production at Michigan State University
- * **Report 1989**
- PC 120 Pot & bedding plants: support for the British Ornamental Plant Producers Code of Practice
- * **Code of Practice 1996**
- PC 211 Technology transfer projects for the pot & bedding plant sector
- PC 211a Technology transfer initiatives for the pot and bedding plant sector

Chrysanthemums (AYR)

Diseases & Disorders (Crp Pro)

- PC 19f Chrysanthemum: cultivar selection and production techniques for natural season bloom and spray production
- * **Final Report 1994**
- PC 24a AYR Chrysanthemums: assessment of disease levels in hydroponic growing systems
- * **Final Report 1992**
- PC 24b Chrysanthemums: factors influencing quality of production of AYR chrysanthemums - hydroponic systems and aspects of disease control
- * **Final Report 1993**
- PC 57 Review of white rust (*Puccinia horiana*) disease on chrysanthemums and potential for biological control using *Verticillium lecanii*
- * **Final Report 1992**
- PC 57a Control of chrysanthemum white rust (*Puccinia horiana*) with *Verticillium lecanii*
- * **Final Report 1993**
- PC 157 Chrysanthemums: investigation of propagation techniques to improve plant establishment, yield, quality and resistance to root-rot pathogens during winter and spring production
- * **Final Report 2001**
- PC 185 Chrysanthemum white rust: estimation of prevalence of strains of *Puccinia horiana* on chrysanthemum tolerant to strobilurin and triazole fungicides and the development of a protocol for identifying

tolerant strains

* **Final Report 2002**

PC 195 To investigate new symptoms of Verticillium wilt of chrysanthemums and determine the extent of pathogen variation

* **Final Report 2004; Info sheet 02/02**

PC 231 Control of white rust in commercial chrysanthemum production

* **Final report 2008**

PC 253 Verticillium wilt of chrysanthemums - protecting UK growers by ensuring a safe propagation chain

* **Final report 2007**

Pests (Crop Protection)

PC 18d Control of chrysanthemum pests with Verticillium lecanii

* **Final Report 1992**

PC 77 Chrysanthemums, sweet peppers, cucumbers: control of thrips and aphids by the flower bugs, Orius spp and Anthocoris

* **Final Report 1993**

Water, energy & climate change

FV 288 HDC Sponsorship of Irrigation Study Tour

PC 104 AYR Chrysanthemums: an assessment of the interaction of supplementary lighting and spacing on winter quality

* **Final Report 1996**

PC 148 Chrysanthemums: investigation of reduced night length treatments to improve final stem weight and quality under winter and summer environments

* **Final Report 1999**

Varieties/Products

PC 19c American Beauty bloom production: Techniques for improving flower quality

* **Final Report 1991**

PC 21c Variety trialling: AYR chrysanthemums

* **Final Report 1991**

Product scheduling/supplychain

PC 19d An investigation into alternative methods of height control, production and marketing of a range of chrysanthemum cultivars

* **Final Report 1993**

Nutrition & other inputs

PC 12 Development of interrupted-lighting schedules for a range of AYR spray chrysanthemum cultivars

* **Final Report 87/88; Supplim Report 88/89**

- PC 19 Natural season chrysanthemums - growing problems under winter conditions
* **Reports 1988 & 1989**
- PC 19b Natural season chrysanthemums: growing problems under winter conditions
* **Final Report 1990**
- PC 19e An investigation of post harvest handling techniques and chemical treatments to establish the best method of achieving maximum shelf-life of American Beauty
* **Final Report 1993**
- PC 19f Chrysanthemum: cultivar selection and production techniques for natural season bloom and spray production
* **Final Report 1994**
- PC 24 Hydroponic systems for AYR chrysanthemums
* **Final Report 1992**
- PC 24c Chrysanthemum: examination of the influence of repeated cropping in soil and hydroponic substrate-based systems on crop quality and disease incidence/control and to investigate the potential for 'direct-sticking' of cuttings in hydroponic production
* **Final Report 1995**
- PC 104 AYR Chrysanthemums: an assessment of the interaction of supplementary lighting and spacing on winter quality
* **Final Report 1996**
- PC 133 Chrysanthemums: an investigation of factors influencing root establishment during the winter period.
* **Final Report 1998**

General

- FV 288 HDC Sponsorship of Irrigation Study Tour

Chrysanthemums (Pot)

Diseases & Disorders (Crp Pro)

- PC 185 Chrysanthemum white rust: estimation of prevalence of strains of *Puccinia horiana* on chrysanthemum tolerant to strobilurin and triazole fungicides and the development of a protocol for identifying tolerant strains
* **Final Report 2002**
- PC 195 To investigate new symptoms of Verticillium wilt of chrysanthemums and determine the extent of pathogen variation
* **Final Report 2004; Info sheet 02/02**
- PC 231 Control of white rust in commercial chrysanthemum production
* **Final report 2008**
- PC 253 Verticillium wilt of chrysanthemums - protecting UK growers by ensuring a safe propagation chain
* **Final report 2007**

PC 13	Winter quality of pot chrysanthemums
PC 13b	Supplementary lighting for pot chrysanthemums * Final Report 1992
PC 13c	Chrysanthemums: the influence of supplementary lighting on winter quality and shelf-life of Yoder bred varieties of Pot'mums * Final Report 1993
PC 92	Chrysanthemums: the combined influence of supplementary lighting and difference in temperature (DIF) on winter quality of commercially grown varieties * Final Report 1994; Factsheet 3/95
PC 92a	Chrysanthemums: the influence of combined supplementary lighting regimes and pot spacings on the quality and economics of the winter production of pot chrysanthemums * Final Report 1995; Factsheet 2/96
PC 92b	Chrysanthemums: the influence of daylength extension and supplementary lighting during flower maturation on the winter quality of pot chrysanthemums * 1. Report 1996; 2. Final Report 1998
PC 92c	Pot chrysanthemums: comparison of the effects of reduced night-length on winter pot quality when imposed using either assimilation or tungsten lighting * Final Report 1999
PC 92d	Evaluation of the efficiency of production of winter pot chrysanthemums at 2000 lux and 4000 lux supplementary lighting * Final Report 2002
PC 92e	Supplementary lighting of pot chrysanthemums - a growers guide * Publication '..pot chrysanthemums guide'

2. Edible Crops

Celery (PC)

Diseases & Disorders (Crp Pro)

PC 99	Protected celery: survey of crops on the South Coast and investigation of a breakdown problem * Final Report 1994; Factsheet 9/95
PC 131	Celery: evaluation of novel fungicides for the control of white rot (<i>Sclerotinia sclerotiorum</i>) in protected celery * Final Report 1997
PC/FV 173	Celery: control of crater spot (<i>Rhizoctonia solani</i>) * Final Report 1995/97

Pests (Crop Protection)

PC 239	Protected herbs, ornamentals and celery: development of an on-nursery rearing system for <i>Atheta</i> Date 12/11/09 15:23, page 21
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coriaria for reduced cost biological control of sciarid and shore flies

* **Final report 2008**

Varieties/Products

PC 21f Protected celery: green celery variety trial

* **Final Report 1995; Factsheet 41/95**

PC 84 Protected celery - improvement of quality of British produce

* **Final Report 1993**

Nutrition & other inputs

PC 10 Celery: temperature monitoring in relation to bolting

* **Final Report 1989**

Cherry Tomato

Diseases & Disorders (Crp Pro)

PC 126 Cherry Tomatoes: an examination of the causes of truss branching and fruit splitting

* **Final Report 1997**

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

Chilli pepper

Diseases & Disorders (Crp Pro)

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

Nutrition & other inputs

PC 138 Chilli peppers: evaluation of crop management systems

* **Final Report 1999**

Cucumber

Diseases & Disorders (Crp Pro)

PC 8 Control of root diseases in hydroponically grown tomato and cucumber crops

* **Reports 1987/88 & 1988/89**

PC 39 Control of verticillium wilt and phomopsis root rot of cucumbers grown in rockwool

* **1. Final Report 1991 2. Report 1991**

PC 89 A review and industry survey of the problem of 'pigtail' in cucumbers

* **Final Report 1993**

PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of *Pythium* spp. in the propagation and production phases of hydroponic crops

* **Final Report 2001**

PC 125 Cucumber: evaluation of disinfection treatments for the control of *Pythium* spp. in rockwool slabs

* **Final Report 1998**

PC 141 Cucumber: evaluation of fungicides for control of powdery mildew and other foliar/stem pathogens

* **Final Report 2000**

PC 149 Cucumber and tomato: investigation of the cause, epidemiology and control of root proliferation ('rootmat') in hydroponic crops

* **Final Report 2001; Addendum report 2002**

PC 153 Cucumber thick root disorder - study visit to Holland

* **Final Report 1998**

PC 153a Investigation of the cause of thick root

* **Final Report 2000**

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

Pests (Crop Protection)

PC 69 Cucumber: integrated control of aphids

* **Final Report 1993**

PC 77 Chrysanthemums, sweet peppers, cucumbers: control of thrips and aphids by the flower bugs, *Orius* spp and *Anthocoris*

* **Final Report 1993**

PC 89 A review and industry survey of the problem of 'pigtail' in cucumbers

* **Final Report 1993**

PC 115 Efficacy and safety evaluation of Luxan Dichlorvos 600 EC and Luxan Dichlorvos Aerosol 15 on cucumbers in support of on-label approval

* **Final Report 1995**

PC 129 Cucumbers: the development of remedial treatments for the control of western flower thrips within IPM programmes

* **Final Report 2000**

PC 222 Cucumbers: Strategy for the management of *Thrips palmi*

* **Final Report 2005**

PC 299 Cucumber and tomato: to evaluate new strategies for IPM of spider mite

Water, energy & climate change

PC 6 The effects of humidity on growth of tomato, cucumber and poinsettia

* **1. Report 1987/88; 2. Report 1988/89**

PC 68 Review of greenhouse design and technology for tomato and cucumber production

* **Final Report 1993**

PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of *Pythium* spp. in the propagation and production phases of hydroponic crops

* **Final Report 2001**

Waste/Environment

PC 23b Cucumbers: recirculation of run-off solution from hydroponic systems

* **Final Report 1991**

PC 61 Cucumber: potential for re-use of substrates

* **Final Report 1995**

PC 63 Cucumber: evaluation of organic substrates

* **Final Report 1993**

Varieties/Products

PC 21d Cucumbers: variety evaluation

* **1. Reports 1992 & 93 2. Report 1993**

Product scheduling/supplychain

PC 201 Cucumber: a technical and economic evaluation of AYR production

* **Final Report 2007**

Nutrition & other inputs

PC 61 Cucumber: potential for re-use of substrates

* **Final Report 1995**

PC 63 Cucumber: evaluation of organic substrates

* **Final Report 1993**

PC 111 Cucumbers: the influence of reduced nitrate input on yield and fruit quality

* **Final Report 1996**

PC 124 Cucumbers: plant establishment and nutrition

* **Final Report 1998; Factsheet 37/98**

PC 136 Tomatoes & cucumbers: evaluation of effective use of pipe-rail boom sprayers

* **Final Report 2000; Factsheet 20/00**

PC 159 Cucumbers: the role of environmental and agronomic factors in carbon dioxide toxicity

* **Final Report 2002**

General

PC 193 Cucumber: to determine the feasibility of establishing an up to date development and technology transfer facility for the cucumber industry

* **Final Report 2002**

Exotic Leaf Crops (PC)

Product scheduling/supplychain

PC 218 Development and promotion of a rapid test for measurement of nitrate in lettuce and spinach at UK production and produce distribution centres

* **Final Report 2005**

Nutrition & other inputs

FV245 (PC) Protected Salads: Effect of spectrally modifying plastics on the harvest nitrate content of baby leaf and lettuce

* **Final Report 2003 & Final Report 2006**

Herbs Edible Protected Crop Gr

Diseases & Disorders (Crp Pro)

PC 210 Protected herbs: best practice guidelines for integrated pest and disease control

* **Current**

Pests (Crop Protection)

PC 178 Protected herbs: control of glasshouse whitefly and leafhoppers within IPM programmes

* **Final Report 2001; Factsheet 05/01**

PC 210 Protected herbs: best practice guidelines for integrated pest and disease control

* **Current**

PC 239 Protected herbs, ornamentals and celery: development of an on-nursery rearing system for *Atheta coriaria* for reduced cost biological control of sciarid and shore flies

* **Final report 2008**

PC 290 Protected lettuce: Development of robust IPM strategies for the control of aphids

Waste/Environment

PC 182 Composting of organic wastes to produce a peat replacement substrate for herb production.

* **Final Report 2003**

Varieties/Products

PC 259 Effects of variety and growth conditions on shelf life and appearance of pot and field-grown coriander

* **Final report 2008**

FV/PC 311 Optimising the propagation environment for endive, escarole, celery and Chinese cabbage

* **Annual report 2007, 2008**

Herbs Ornamental Protected Cro

Diseases & Disorders (Crp Pro)

PC 210 Protected herbs: best practice guidelines for integrated pest and disease control

* **Current**

Pests (Crop Protection)

PC 178 Protected herbs: control of glasshouse whitefly and leafhoppers within IPM programmes

* **Final Report 2001; Factsheet 05/01**

PC 210 Protected herbs: best practice guidelines for integrated pest and disease control

* **Current**

PC 239 Protected herbs, ornamentals and celery: development of an on-nursery rearing system for Atheta coriaria for reduced cost biological control of sciarid and shore flies

* **Final report 2008**

Waste/Environment

PC 182 Composting of organic wastes to produce a peat replacement substrate for herb production.

* **Final Report 2003**

Leafy herbs (PC)

Varieties/Products

PC 259 Effects of variety and growth conditions on shelf life and appearance of pot and field-grown coriander

* **Final report 2008**

Lettuce Group (PC)

Diseases & Disorders (Crp Pro)

PC 17 Glasshouse lettuce - use of mildew resistant varieties during autumn and winter

* **Final Report 1988**

PC 20 Lettuce downy mildew control

* **Final Report 1991**

PC 20a Lettuce: control of downy mildew using fungicides

* **Final Report 1998; Factsheet 8/96**

PC 117 Protected lettuce: investigation and control of basal rots in winter crops

* **1. Final Report 1997; 2. Final Report 98**

PC/FV 164 Lettuce: the identification of downy mildew (*Bremia lactucae*) resistance gene combinations in lettuce cultivars of commercial importance for protected and field production in the UK

* **Final Report 1996; Factsheet 8/96**

PC 199 Protected lettuce: biology and control of bacterial leaf rot (petiole blackening)

* **Final Report 2004**

Pests (Crop Protection)

PC 101 Protected lettuce: control of sciarid and shore flies

* **Final Report 1997**

PC 132 Protected lettuce: an integrated approach to aphid and caterpillar control

* **Final Report 2001; ID Card - Aphids 2003**

PC 194 Protected lettuce: towards insecticide free production

* **Final Report 2006**

PC 290 Protected lettuce: Development of robust IPM strategies for the control of aphids

Water, energy & climate change

PC 188 A technical and economic appraisal of technologies and practices to improve the energy efficiency of protected salad crop production in the UK

* **Final Report 2003**

PC 250 Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.

* **Final report 2006**

Varieties/Products

PC 21a Protected lettuce variety evaluation

PC 21e Protected lettuce: variety trials

Product scheduling/supplychain

PC 3a Extending the season of iceberg lettuce

* **Reports 1987 & 1987/88**

PC/FV 135 Lettuce: a non-toxic crop protection system for lettuce (and other vegetable crops)

* **Final Report 1993**

Nutrition & other inputs

PC 48 Lettuce: early production of bagged crisp and early lettuce under glass

	* Final Report 1991
PC 88	Glasshouse lettuce: reduction of nitrate levels
	* Final Report 1994
PC 244	Lettuce: The use of novel irrigation techniques as a management tool to restrict nitrate uptake in winter crops
	* Final report 2006
FV245 (PC)	Protected Salads: Effect of spectrally modifying plastics on the harvest nitrate content of baby leaf and lettuce
	* Final Report 2003 & Final Report 2006
PC 250	Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.
	* Final report 2006
PC 263	Protected lettuce - to assess the effects of soil nitrogen levels, trickle irrigation and light levels on nitrate accumulation in winter crops
	* Final report 2007
PC 275	Lettuce and spinach: Preparation of paper for submission to EFSA supporting the case for lifting levels of permissible nitrate in EU regulations relating to salad and vegetable crops.
	* Final Report 2007
PC 297	Lettuce: To investigate nitrate levels in a range of butterhead and curly lettuce
	* Final report 2009

Lettuce (PC)

Diseases & Disorders (Crp Pro)

FV/PC 62	Control of big vein virus symptoms and its vector <i>Olpidium brassicae</i> in protected and outdoor lettuce crops
	* Final Report 1994
FV 337	Brassica & Lettuce Propagation: Identifying means of killing clubroot and <i>Olpidium</i> resting spores in trays to avoid infection of transplants
	* Annual report 2009
PC 17	Glasshouse lettuce - use of mildew resistant varieties during autumn and winter
	* Final Report 1988
PC 20	Lettuce downy mildew control
	* Final Report 1991
PC 20a	Lettuce: control of downy mildew using fungicides
	* Final Report 1998; Factsheet 8/96
PC 117	Protected lettuce: investigation and control of basal rots in winter crops
	* 1. Final Report 1997; 2. Final Report 98
PC/FV 164	Lettuce: the identification of downy mildew (<i>Bremia lactucae</i>) resistance gene combinations in lettuce cultivars of commercial importance for protected and field production in the UK
	* Final Report 1996; Factsheet 8/96

PC 199 Protected lettuce: biology and control of bacterial leaf rot (petiole blackening)

* **Final Report 2004**

Pests (Crop Protection)

PC 101 Protected lettuce: control of sciarid and shore flies

* **Final Report 1997**

PC 132 Protected lettuce: an integrated approach to aphid and caterpillar control

* **Final Report 2001; ID Card - Aphids 2003**

PC 184 Securing efficacy data for Amistar and Calypso in support of a GAP for protected lettuce

PC 194 Protected lettuce: towards insecticide free production

* **Final Report 2006**

PC 290 Protected lettuce: Development of robust IPM strategies for the control of aphids

Water, energy & climate change

PC 250 Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.

* **Final report 2006**

Varieties/Products

PC 21a Protected lettuce variety evaluation

PC 21e Protected lettuce: variety trials

Product scheduling/supplychain

FV/PC 311 Optimising the propagation environment for endive, escarole, celery and Chinese cabbage

* **Annual report 2007, 2008**

PC 3a Extending the season of iceberg lettuce

* **Reports 1987 & 1987/88**

PC/FV 135 Lettuce: a non-toxic crop protection system for lettuce (and other vegetable crops)

* **Final Report 1993**

PC 218 Development and promotion of a rapid test for measurement of nitrate in lettuce and spinach at UK production and produce distribution centres

* **Final Report 2005**

Nutrition & other inputs

PC 48 Lettuce: early production of bagged crisp and early lettuce under glass

* **Final Report 1991**

PC 88 Glasshouse lettuce: reduction of nitrate levels

* **Final Report 1994**

PC 244 Lettuce: The use of novel irrigation techniques as a management tool to restrict nitrate uptake in winter crops

* **Final report 2006**

FV245 (PC) Protected Salads: Effect of spectrally modifying plastics on the harvest nitrate content of baby leaf and lettuce

* **Final Report 2003 & Final Report 2006**

PC 250 Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.

* **Final report 2006**

PC 263 Protected lettuce - to assess the effects of soil nitrogen levels, trickle irrigation and light levels on nitrate accumulation in winter crops

* **Final report 2007**

PC 275 Lettuce and spinach: Preparation of paper for submission to EFSA supporting the case for lifting levels of permissible nitrate in EU regulations relating to salad and vegetable crops.

* **Final Report 2007**

Other Protected Crop Edible Gr

Diseases & Disorders (Crp Pro)

PC 301 Targeting of humidity control, through the use of stem temperature measurements, to reduce stem botrytis and save energy in tomato production.

* **annual report**

Pests (Crop Protection)

PC 66 Promotion of IPM in glasshouse salad crops

PC 93 The future role of Torque (fenbutatin oxide) in the integrated control of two-spotted spider mites (TSSM) in protected edible and ornamental crops

* **Final Report 1996**

PC 299 Cucumber and tomato: to evaluate new strategies for IPM of spider mite

PC 302 Organic tomato: Phase 1 of contingency plans for the control of Tuta absoluta and Nesidiocoris tenuis.

Water, energy & climate change

PC 119 Glasshouse irrigation: a review of R&D and evaluation of current techniques for irrigating edible crops grown in hydroponic systems

* **Final Report 1997**

PC 198 An investigation into the performance of modern designs of thermal screens when used in protected edible crop production

* **Annual Report 2004; Annual Report 2005**

PC 198a The use of thermal screens for energy saving and greenhouse climate management in protected edible production - performance optimisation

* **Final report 2006**

PC 301 Targeting of humidity control, through the use of stem temperature measurements, to reduce stem botrytis and save energy in tomato production.

* **annual report**

Waste/Environment

PC 59 Environmental impact of waste solutions from hydroponic systems for the production of edible crops

Varieties/Products

PC 102 Leafy salads: production of speciality protected crops for processing

* **Final Report 1999**

Sweet Peppers

Diseases & Disorders (Crp Pro)

PC 35c Sweet peppers: effect of fruit load on blossom-end rot and fruit quality

* **Final Report 1993**

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

PC 232a Sweet pepper: aspects of the epidemiology of a stem and fruit rot caused by *Fusarium oxysporum*

* **Final report 2006**

PC 260 Sweet pepper: aspects of the epidemiology of a stem and fruit rot caused by *Fusarium oxysporum*

* **Final report 2008**

Pests (Crop Protection)

PC 76 Sweet peppers: biological control of green leafhopper (*Empoasca decipiens*)

* **Final Report 1992/95**

PC 77 Chrysanthemums, sweet peppers, cucumbers: control of thrips and aphids by the flower bugs, *Orius* spp and *Anthocoris*

* **Final Report 1993**

PC 295 Sweet pepper: Short term IPM solutions for leafhopper and aphid infestations

PC 227 Optimising greenhouse environment and energy inputs for sweet pepper production in the UK - a commercial demonstration of the use of thermal screens and advanced climate control

PC 227a Extension to project PC 227: Optimising greenhouse environment and energy inputs for sweet pepper production in the UK - a commercial demonstration of the use of thermal screens and advanced climate control.

* **Final report 2007**

Labour utilisation/ergonomics

PC 35b Sweet peppers: the effect of irrigation and trimming on fruit quality

* **Final Report 1991/92**

Nutrition & other inputs

PC 35 Sweet peppers: review of research findings on aspects of fruit quality

* **Final Report 1990**

PC 35a Sweet peppers: factors affecting fruit quality

* **Final Report 1991**

PC 35c Sweet peppers: effect of fruit load on blossom-end rot and fruit quality

* **Final Report 1993**

Tomato

Diseases & Disorders (Crp Pro)

PC 8 Control of root diseases in hydroponically grown tomato and cucumber crops

* **Reports 1987/88 & 1988/89**

PC 26 Tomato: chemical, cultural and biological control of powdery mildew

* **Final Report 1991**

PC 26a Fungicide sensitivity testing and comparison of fungicides for control of tomato powdery mildew

* **Final Report 1993**

PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of *Pythium* spp. in the propagation and production phases of hydroponic crops

* **Final Report 2001**

PC 98 Long season tomatoes: control of stem botrytis by treating young lesions

* **Final Report 1996**

PC 98a Long-season protected tomatoes: control of stem botrytis

* **Final Report 1998**

PC 139 Tomatoes: examination of *Macrophus* damage to commercial crops

* **Final Report 2001**

PC 149 Cucumber and tomato: investigation of the cause, epidemiology and control of root proliferation

('rootmat') in hydroponic crops

* **Final Report 2001; Addendum report 2002**

PC 171 Tomato: new roots for the early removal of haulm and continued cropping

* **Final Report 2001**

PC 174 Tomatoes: development of biocontrol as a component of an integrated, sustainable strategy for the control of grey mould (*Botrytis cinerea*)

* **Final Report 2004**

PC 181 Protected tomato: sources, survival and disinfection of Pepino Mosaic Virus (PepMV)

* **Final Report 2003**

PC 186 Tomato: an assessment of current problems and future risks of Verticillium wilt in hydroponic and soil-grown crops

* **Final Report 2002; Factsheet 15/01**

PC 186a Tomato: epidemiology and control of Verticillium wilt in hydroponic and soil grown crops

* **Final report 2006**

PC 212 Protected tomato: sources, survival, spread and disinfection of Potato Spindle Tuber Viroid (PSTVd)

* **Final Report 2004**

PC 223 To examine the potential of *Orius majusculus* to control *Macrolophus caliginosus* in a tomato crop.

* **New Project - Awaiting First Report**

PC 229 'Wash and Grow': The development of non-destructive tomato seed testing

* **Final report 2006**

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

PC 241 Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease

* **Final report 2009**

PC 294 Detection and elimination of solanaceous viroids in tomato seeds and seedlings

* **annual report 2009**

Pests (Crop Protection)

PC 108 Integrated pest management of leaf miner pests of protected tomato crops (LINK)

* **Final Report 2000; Factsheet 08/00**

PC 161 Protected tomatoes: integrated control of mealybugs

* **Final Report 2002; Factsheet 18/00**

PC 163 Tomatoes: control of spider mites with fungal pathogens

* **Final Report 2002**

PC 189 Tomato: biological and behavioural variation in spider mites infesting UK crops

* **Final Report 2003**

- PC 215 Tomatoes: Further development of sustainable mealybug control strategies
* **Final report 2007**
- PC 225 Tomatoes: survey of hyper-necrotic spider mite damage in UK crops
* **New Project - Awaiting First Report**
- PC 240 Organic tomato: Development and implementation of a robust pesticide-free IPM programme
* **Final report 2009**
- PC 251 AYR Tomato production: Phase 1 of the development and implementation of a robust IPM programme.
* **Final report 2007**
- PC 251a AYR tomato production: Phase 2 of the development and implementation of a robust IPM programme
* **Final report 2008**
- PC 293 Tomato: Impact of sulphur-based fungicides on parasitic wasps
* **Final report 2009**
- PC 299 Cucumber and tomato: to evaluate new strategies for IPM of spider mite
- PC 302 Organic tomato: Phase 1 of contingency plans for the control of Tuta absoluta and Nesidiocoris tenuis.

Water, energy & climate change

- PC 6 The effects of humidity on growth of tomato, cucumber and poinsettia
* **1. Report 1987/88; 2. Report 1988/89**
- PC 23c Irrigation requirements of the tomato crop
* **Final Report 1992**
- PC 23d Tomato: evaluation of recirculation systems
* **Final Report 1991**
- PC 30 Tomatoes: the effect of humidification on plant growth, yield and fruit quality
* **Final Report 1992**
- PC 30a Tomatoes: the effect of humidification on plant growth, yield and fruit quality
* **Final Report 1992**
- PC 56 Hortitrans: a programme for calculating humidity and transpiration in greenhouses and its effects on tomato crops
* **Computer prog & manual 91/92 (Lotus 123)**
- PC 68 Review of greenhouse design and technology for tomato and cucumber production
* **Final Report 1993**
- PC 82 Irrigation regimes for tomatoes grown on rockwool
* **Final Report 1993**
- PC 83 Tomatoes: Irrigation systems for NFT

* **Final Report 1992/95**

PC 83a Tomatoes: commercial evaluation of yield relative to positional effects in NFT channels

* **Final Report 1996**

PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of Pythium spp. in the propagation and production phases of hydroponic crops

* **Final Report 2001**

PC 110 The influence of CO2 concentration and plant density on tomato yield and fruit quality

* **Final Report 1996**

PC 110a Tomatoes: practical guidelines for control of CO2 enrichment

* **Grower guide and computer file 2002**

PC 122a Tomatoes: optimisation of summer fruit quality (LINK)

* **Final Report 2001**

PC 142 Tomatoes: comparison of methods for determining irrigation frequency with measured crop water use

* **Final Report 1999**

PC 151 Tomatoes: water uptake by NFT and rockwool grown crops

* **Final Report 1999**

PC 162 A computational fluid dynamic (CFD) study of flow patterns, temperature distributions and CO2 dispersal in a tomato glasshouse

* **Final Report 2002**

PC 228 Tomatoes: an investigation into apparent yield improvements associated with the installation of a micro-gas-turbine CHP facility

* **Final Report 2005**

PC 241 Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease

* **Final report 2009**

Labour utilisation/ergonomics

PC 217 Improving the efficiency of labour use in tomato production - developing best practice

* **Final report 2006**

PC 217a Extension to project PC 217: Labour use in tomato production - a commercial application of task separation to maximise output from seasonal staff.

* **Final report 2007**

PC 257 Lean manufacturing - applying the principles to harvesting tomatoes

* **Final report 2008**

Waste/Environment

PC 209 Tomatoes: reducing waste disposal costs through use of sustainable wood-based growth media

* **Annual Report 2004**

Varieties/Products

PC 21b Tomatoes: trial of varieties for long season production

* **Final Report 1992**

Product scheduling/supplychain

PC 5 Tomato fruit quality - pre- and post-harvest factors

* **Reports 1986/87, 1987/88 & 1988/89**

PC 109 Vine-ripe tomatoes: optimising the picking colour stage and storage conditions of tomatoes to maximise flavour at the point of consumption

* **Final Report 1995**

PC 122 Tomatoes: the role of potassium and calcium nutrition in optimising fruit quality in summer

* **Final Report 1997**

PC 122a Tomatoes: optimisation of summer fruit quality (LINK)

* **Final Report 2001**

PC 167 Tomato: preliminary investigation of the effects of cultivar, stage of harvesting and post-harvest storage on fruit lycopene content

* **Final Report 1999**

Nutrition & other inputs

PC 2 Tomato temperature regimes

* **Final Report 1988**

PC 23a An investigation into the production of main crop tomatoes using rockwool and NFT

* **Final Report 1991**

PC 23c Irrigation requirements of the tomato crop

* **Final Report 1992**

PC 54 Tomatoes: an examination of the efficiency of spray application to commercial crops

* **Final Report 1992**

PC 55 Tomatoes: use of potassium nitrate & chloride and calcium nitrate & chloride to elevate root zone conductivities and their effect on yield and quality

* **Final Report 1992**

PC 55a The influence of reduced nitrate input on tomato yield and fruit quality

* **Final Report 1992**

PC 64 Tomatoes: optimum planting stage and plant density for the V-system

* **Final Report 1992**

PC 65 Regulation of tomato fruit size by plant density and truss thinning

* **Final Report 1992**

PC 65a Regulation of tomato fruit size by taking side shoots

* **Final Report 1994**

PC 110 The influence of CO₂ concentration and plant density on tomato yield and fruit quality

	* Final Report 1996
PC 110a	Tomatoes: practical guidelines for control of CO2 enrichment
	* Grower guide and computer file 2002
PC 136	Tomatoes & cucumbers: evaluation of effective use of pipe-rail boom sprayers
	* Final Report 2000; Factsheet 20/00
PC 151	Tomatoes: water uptake by NFT and rockwool grown crops
	* Final Report 1999
PC 162	A computational fluid dynamic (CFD) study of flow patterns, temperature distributions and CO2 dispersal in a tomato glasshouse
	* Final Report 2002
PC 228	Tomatoes: an investigation into apparent yield improvements associated with the installation of a micro-gas-turbine CHP facility
	* Final Report 2005
PC 229	'Wash and Grow': The development of non-destructive tomato seed testing
	* Final report 2006
PC 241	Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease
	* Final report 2009

3. General projects

Protected Crop Sector

Diseases & Disorders (Crp Pro)

BOF 144 (p	Bulbs and Flowers: Pest and disease information cards
	* Current
FV 352	Disease management in organic Brassica seed and transplants
PC/HNS 255	Biobeds/ biofilters for the safe treatment of pesticide waste and washings (extension to PC/HNS 255)
	* Final report 2008
PC 8	Control of root diseases in hydroponically grown tomato and cucumber crops
	* Reports 1987/88 & 1988/89
PC 17	Glasshouse lettuce - use of mildew resistant varieties during autumn and winter
	* Final Report 1988
PC 19f	Chrysanthemum: cultivar selection and production techniques for natural season bloom and spray production
	* Final Report 1994
PC 20	Lettuce downy mildew control

- PC 20a * **Final Report 1991**
Lettuce: control of downy mildew using fungicides
- PC 24a * **Final Report 1998; Factsheet 8/96**
AYR Chrysanthemums: assessment of disease levels in hydroponic growing systems
- PC 24b * **Final Report 1992**
Chrysanthemums: factors influencing quality of production of AYR chrysanthemums - hydroponic systems and aspects of disease control
- PC 26 * **Final Report 1993**
Tomato: chemical, cultural and biological control of powdery mildew
- PC 26a * **Final Report 1991**
Fungicide sensitivity testing and comparison of fungicides for control of tomato powdery mildew
- PC 27 * **Final Report 1993**
Distortion in bedding plants: a survey to determine the incidence and potential losses caused by the disorder
- PC 27a * **Final Report 1990**
Distortion in bedding plants: investigation into the agents causing this disorder
- PC 34 * **Final Report 1993**
Sterilisation of glasshouse soils: review of options
- PC 35c * **Final Report 1991**
Sweet peppers: effect of fruit load on blossom-end rot and fruit quality
- PC 38 * **Final Report 1993**
Black root rot of pansy and other bedding plants: an investigation of control measures, including fungicide screening
- PC 38a * **Final Report 1992**
Epidemiology of black root rot in bedding plants
- PC 38b * **Final Report 1996; Factsheet 19/02**
Effect of pH and plug nutrition on black root rot in autumn pansy
- PC 38c * **Final Report 1993**
Bedding plants: comparison of chemical disinfectants for treatment of plastic trays contaminated with *Thielaviopsis basicola*
- PC 39 * **Final Report 1995; Factsheet 19/02**
Control of verticillium wilt and phomopsis root rot of cucumbers grown in rockwool
- PC 46a * **1. Final Report 1991 2. Report 1991**
Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem
- PC 50 * **Final Report 1992; Factsheet 5/95b**
Cyclamen: integrated control of fusarium wilt

- PC 50a Pot plants: integrated control of root diseases
* **Final Report 1993**
- PC 50b Cyclamen: evaluation of integrated control systems for the control of fusarium wilt
* **Final Report 1994**
- PC 57 Review of white rust (*Puccinia horiana*) disease on chrysanthemums and potential for biological control using *Verticillium lecanii*
* **Final Report 1992**
- PC 57a Control of chrysanthemum white rust (*Puccinia horiana*) with *Verticillium lecanii*
* **Final Report 1993**
- PC/HNS 58 Protected crops and HONS: rapid diagnostic tests for root and stem base pathogens
* **Final Report 1993**
- PC 60 Protected crops: root diseases in recirculating hydroponic systems and the potential for control with disinfection
* **Final Report 1993**
- PC 60a The development of a sustainable system for the prevention of root disease in recirculating hydroponic crops (LINK)
* **Final Report 2000**
- PC 87 Control of ringspot on protected hybrid pinks
* **Final Report 2001; Factsheet 23/00**
- PC 89 A review and industry survey of the problem of 'pigtail' in cucumbers
* **Final Report 1993**
- PC 90 Protected column stocks: evaluation of the efficacy and crop safety fungicide treatments for the control of downy mildew
* **Final Report 1993**
- PC 96 Investigation and control of seed-borne *Colletotrichum* spp. causing anthracnose of lupins and *Lavatera*
* **Final Report 1994**
- PC 97 Identification of sources of inoculum and the development of rapid diagnostic tests for *Pythium* infestation of ornamentals on nurseries
* **Final Report 1998**
- PC 97a Ornamentals : sources of *Pythium* inoculum, fungicide resistance, and efficacy of surface sterilants
* **Final Report 2001**
- PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of *Pythium* spp. in the propagation and production phases of hydroponic crops
* **Final Report 2001**
- PC 98 Long season tomatoes: control of stem botrytis by treating young lesions
* **Final Report 1996**
- PC 98a Long-season protected tomatoes: control of stem botrytis
* **Final Report 1998**

- PC 99 Protected celery: survey of crops on the South Coast and investigation of a breakdown problem
* **Final Report 1994; Factsheet 9/95**
- PC 107 Comparison of chemical disinfectants for treatment of a glasshouse sand bed contaminated with Phytophthora
* **Final Report 1995**
- PC 117 Protected lettuce: investigation and control of basal rots in winter crops
* **1. Final Report 1997; 2. Final Report 98**
- PC 118 Control and significance of viruses in trailing petunia and other ornamental species (factsheet for growers)
* **Factsheet 4/96**
- PC 121 Integrated chemical and environmental control of grey mould (*Botrytis cinerea*) in protected container grown ornamentals (LINK)
* **Final Report 2002; Factsheet 23-25 2002**
- PC 125 Cucumber: evaluation of disinfection treatments for the control of *Pythium* spp. in rockwool slabs
* **Final Report 1998**
- PC 126 Cherry Tomatoes: an examination of the causes of truss branching and fruit splitting
* **Final Report 1997**
- PC 131 Celery: evaluation of novel fungicides for the control of white rot (*Sclerotinia sclerotiorum*) in protected celery
* **Final Report 1997**
- PC 139 Tomatoes: examination of *Macrophus* damage to commercial crops
* **Final Report 2001**
- PC 141 Cucumber: evaluation of fungicides for control of powdery mildew and other foliar/stem pathogens
* **Final Report 2000**
- PC 143 Bedding plants: control of black root rot and downy mildew (yr 2)
* **Final Report 2000; Factsheet 19/02**
- PC 144 (pa) Bulbs and Flowers: Pest and disease information cards
- PC 149 Cucumber and tomato: investigation of the cause, epidemiology and control of root proliferation ('rootmat') in hydroponic crops
* **Final Report 2001; Addendum report 2002**
- PC 153 Cucumber thick root disorder - study visit to Holland
* **Final Report 1998**
- PC 153a Investigation of the cause of thick root
* **Final Report 2000**
- PC 157 Chrysanthemums: investigation of propagation techniques to improve plant establishment, yield, quality and resistance to root-rot pathogens during winter and spring production
* **Final Report 2001**
- PC/FV 164 Lettuce: the identification of downy mildew (*Bremia lactucae*) resistance gene combinations in

lettuce cultivars of commercial importance for protected and field production in the UK

* **Final Report 1996; Factsheet 8/96**

PC 171 Tomato: new roots for the early removal of haulm and continued cropping

* **Final Report 2001**

PC/FV 173 Celery: control of crater spot (*Rhizoctonia solani*)

* **Final Report 1995/97**

PC 174 Tomatoes: development of biocontrol as a component of an integrated, sustainable strategy for the control of grey mould (*Botrytis cinerea*)

* **Final Report 2004**

PC 175 Protected bedding plants: biology and control of some important rust diseases

* **Final Report 01; Factsheet 23/00 & 09/02**

PC 179 Lisianthus (*Eustoma*): control of Downy mildew (*Peronospora chlorae*)

* **Final Report 2003; Factsheet 12/03**

PC 181 Protected tomato: sources, survival and disinfection of Pepino Mosaic Virus (PepMV)

* **Final Report 2003**

PC 185 Chrysanthemum white rust: estimation of prevalence of strains of *Puccinia horiana* on chrysanthemum tolerant to strobilurin and triazole fungicides and the development of a protocol for identifying tolerant strains

* **Final Report 2002**

PC 186 Tomato: an assessment of current problems and future risks of *Verticillium* wilt in hydroponic and soil-grown crops

* **Final Report 2002; Factsheet 15/01**

PC 186a Tomato: epidemiology and control of *Verticillium* wilt in hydroponic and soil grown crops

* **Final report 2006**

PC 191 Poinsettia: evaluation of phytotoxic effects of fungicides applied to mature plants for the control of powdery mildew

* **Final Report 2002; Factsheet 17/02**

PC 195 To investigate new symptoms of *Verticillium* wilt of chrysanthemums and determine the extent of pathogen variation

* **Final Report 2004; Info sheet 02/02**

PC 199 Protected lettuce: biology and control of bacterial leaf rot (petiole blackening)

* **Final Report 2004**

PC 210 Protected herbs: best practice guidelines for integrated pest and disease control

* **Current**

PC 212 Protected tomato: sources, survival, spread and disinfection of Potato Spindle Tuber Viroid (PSTVd)

* **Final Report 2004**

PC 213 Protected stock: aspects of the biology and control of *Fusarium* wilt, a new disease problem

* **Final Report 2006**

PC 213a Protected cut flowers: evaluation of two steaming methods for disinfesting soil of *Fusarium*

oxysporum and Sclerotinia sclerotiorum (extension to PC 213)

* **final report**

PC 223 To examine the potential of Orius majusculus to control Macrolophus caliginosus in a tomato crop.

* **New Project - Awaiting First Report**

PC 229 'Wash and Grow': The development of non-destructive tomato seed testing

* **Final report 2006**

PC 230 Detection and control of downy mildew on ornamentals

* **Annual report 2007, Annual report 2008**

PC 231 Control of white rust in commercial chrysanthemum production

* **Final report 2008**

PC 232 Cucumber, sweet and chilli pepper, and tomato: An assessment of current problems and future risks of fusarium diseases in hydroponic crops, and priorities for research

* **Final Report 2006**

PC 232a Sweet pepper: aspects of the epidemiology of a stem and fruit rot caused by *Fusarium oxysporum*

* **Final report 2006**

PC 239a Protected herbs; ornamentals and celery: development of an on-nursery rearing system for Atheta coriaria for reduced cost biological control of sciarid and shore flies - extension to PC 239

PC 241 Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease

* **Final report 2009**

FV/HNS/PC2 Bedding Plants: An investigation into the potential growth promoting and disease suppressive effects of different substrate mixes and commercially available bio-stimulants under different nutrient regimes

* **Final report 2006**

PC 249 Cut flowers: evaluation of drip-applied chloropicrin for control of soil-borne Fusarium oxysporum, Rhizoctonia species, Sclerotinia sclerotiorum and weed seeds.

* **Final Report 2006**

PC 249a Cut flowers: evaluation of drip-applied chloropicrin for control of soil-borne Fusarium oxysporum, Rhizoctonia species, Sclerotinia sclerotiorum and weed seeds (Phase II)

* **Final report 2006**

PC 252 Protected ornamentals: detection, prevalence and control of seed-borne diseases

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

PC 253 Verticillium wilt of chrysanthemums - protecting UK growers by ensuring a safe propagation chain

* **Final report 2007**

PC 260 Sweet pepper: aspects of the epidemiology of a stem and fruit rot caused by Fusarium oxysporum

* **Final report 2008**

PC 264 Electronic noses as a tool for providing real-time information on crop pests and diseases in protected cropping

* **Final report 2007**

PC 289 Sweet pepper: securing knowledge on TSWV and a potyvirus in an infected crop to increase understanding of a potential threat to UK growers

* **Final report 2008**

PC 294 Detection and elimination of solanaceous viroids in tomato seeds and seedlings

* **annual report 2009**

PC 298 Protected Lettuce: Developing Best Practice for Disease Control

PC 301 Targeting of humidity control, through the use of stem temperature measurements, to reduce stem botrytis and save energy in tomato production.

* **annual report**

Pests (Crop Protection)

CP 17a Pesticide gap analysis update for ornamental crops (2006)

* **Final Report 2006**

BOF 144 (p) Bulbs and Flowers: Pest and disease information cards

* **Current**

PC/HNS 255 Biobeds/ biofilters for the safe treatment of pesticide waste and washings (extension to PC/HNS 255)

* **Final report 2008**

PC 1a Narcissus: forecasting and control of large Narcissus fly

PC 1c Narcissus: integrated control of the large narcissus fly

PC 15 Vine weevil and other root weevils - control measures. CROSS PANEL

PC 18a Western flower thrips - control in commercial crops

* **Final Report 1988**

PC 18b Western Flower Thrips: biology and chemical control

* **Reports 1987/88 & 1988/89**

PC 18c Western Flower Thrips: chemical and integrated control

* **Final Report 1992**

PC 18d Control of chrysanthemum pests with Verticillium lecanii

* **Final Report 1992**

PC 18f Pot and Bedding plants: dichlorvos fogs - phytotoxicity tests and effectiveness against western flower thrips

* **Final Report 1991**

PC 18g Pot and Bedding plants: crop safety and control of western flower thrips with dichlorvos fogs

* **Final Report 1992**

- PC 22 Leafminer: biological control of Liriomyza species
- PC 22a Monitoring the incidence, survival and natural parasitism of Liriomyza huidobrensis around infested glasshouses
 * **Final Report 1991**
- PC 52 Review of low volume mist systems of pesticide application
 * **Final Report 1992**
- PC 66 Promotion of IPM in glasshouse salad crops
- PC 69 Cucumber: integrated control of aphids
 * **Final Report 1993**
- PC 70 Poinsettia: integrated pest management of whiteflies
 * **Final Report 1993**
- PC 76 Sweet peppers: biological control of green leafhopper (Empoasca decipiens)
 * **Final Report 1992/95**
- PC 77 Chrysanthemums, sweet peppers, cucumbers: control of thrips and aphids by the flower bugs, Orius spp and Anthocoris
 * **Final Report 1993**
- PC 89 A review and industry survey of the problem of 'pigtail' in cucumbers
 * **Final Report 1993**
- PC 93 The future role of Torque (fenbutatin oxide) in the integrated control of two-spotted spider mites (TSSM) in protected edible and ornamental crops
 * **Final Report 1996**
- PC 93e Narcissus: forecasting and control of large narcissus fly
- PC 95 A literature review of tomato spotted wilt virus (TSWV) and its vector western flower thrips (WFT) with reference to the production of protected ornamental plants
 * **Final Report 1996; Factsheet 32/97**
- PC 101 Protected lettuce: control of sciarid and shore flies
 * **Final Report 1997**
- PC 108 Integrated pest management of leaf miner pests of protected tomato crops (LINK)
 * **Final Report 2000; Factsheet 08/00**
- PC 115 Efficacy and safety evaluation of Luxan Dichlorvos 600 EC and Luxan Dichlorvos Aerosol 15 on cucumbers in support of on-label approval
 * **Final Report 1995**
- PC 123 Control of capsid bugs within IPM programmes in protected crops
 * **Final Report 2001; Factsheet 37/96**
- PC 129 Cucumbers: the development of remedial treatments for the control of western flower thrips within

- IPM programmes
- * **Final Report 2000**
- PC 132 Protected lettuce: an integrated approach to aphid and caterpillar control
- * **Final Report 2001; ID Card - Aphids 2003**
- PC 144 (pa) Bulbs and Flowers: Pest and disease information cards
- PC 147 Control of sciarid fly during ornamental plant propagation
- * **Final Report 1998**
- PC 147a Ornamentals: evaluation of the effect of insecticide granules in the plug stage on plant quality and sciarid fly control in finished plants
- * **Final Report 2001; Factsheet 08/02**
- PC 160 Protected crops: optimising the use of abamectin within IPM programmes
- * **Final Report 2000; Factsheet 18/00**
- PC 161 Protected tomatoes: integrated control of mealybugs
- * **Final Report 2002; Factsheet 18/00**
- PC 163 Tomatoes: control of spider mites with fungal pathogens
- * **Final Report 2002**
- PC 165 Protected crops: design and evaluation of a robust biologically based strategy for the control of MACE resistant *Mysus persicae*
- * **Final Report 2002**
- PC 170 Protected Crops: The potential of spectral filters for pest control
- * **Final Report 2000**
- PC 177 Protected Flower Crops: evaluation of sugar products to improve the control of western flower thrips
- * **Final Report 2001**
- PC 178 Protected herbs: control of glasshouse whitefly and leafhoppers within IPM programmes
- * **Final Report 2001; Factsheet 05/01**
- PC 180 Protected Crops: A review of the potential of *Beauveria bassiana* against pests of glasshouse grown in the UK
- * **Final Report 2000**
- PC 184 Securing efficacy data for Amistar and Calypso in support of a GAP for protected lettuce
- PC 189 Tomato: biological and behavioural variation in spider mites infesting UK crops
- * **Final Report 2003**
- PC 194 Protected lettuce: towards insecticide free production
- * **Final Report 2006**
- PC 210 Protected herbs: best practice guidelines for integrated pest and disease control
- * **Current**

- PC 215 Tomatoes: Further development of sustainable mealybug control strategies
* **Final report 2007**
- PC 219 Risk assessment and chemical ecology of the red lily beetle
* **Final report 2007**
- PC 222 Cucumbers: Strategy for the management of Thrips palmi
* **Final Report 2005**
- PC 225 Tomatoes: survey of hyper-necrotic spider mite damage in UK crops
* **New Project - Awaiting First Report**
- PC 236 A review of alternatives to chemical pesticides as post-harvest treatments for cut flowers
* **Final Report 2005**
- PC 239 Protected herbs, ornamentals and celery: development of an on-nursery rearing system for *Atheta coriaria* for reduced cost biological control of sciarid and shore flies
* **Final report 2008**
- PC 240 Organic tomato: Development and implementation of a robust pesticide-free IPM programme
* **Final report 2009**
- PC 248 Investigation in to the decline curve of a range of pesticides under glass
* **Final Report 2006**
- PC 251 AYR Tomato production: Phase 1 of the development and implementation of a robust IPM programme.
* **Final report 2007**
- PC 251a AYR tomato production: Phase 2 of the development and implementation of a robust IPM programme
* **Final report 2008**
- PC 254 Phytotoxicity testing of new pesticides as Dip treatments to unrooted ornamental cuttings; in order to remove or reduce the risk of *Bemisia tabaci* infestation
* **Final report 2007**
- PC 261 Protected bedding and pot plants: evaluation of western flower thrips control by *Atheta coriaria* using an on-nursery rearing system
* **Final report 2006**
- PC 264 Electronic noses as a tool for providing real-time information on crop pests and diseases in protected cropping
* **Final report 2007**
- PC 284 Review of pest control in UK pepper crops
* **Final report 2008**
- PC 289 Sweet pepper: securing knowledge on TSWV and a potyvirus in an infected crop to increase understanding of a potential threat to UK growers
* **Final report 2008**
- PC 290 Protected lettuce: Development of robust IPM strategies for the control of aphids
- PC 291 Protected ornamentals: evaluation of control options for bacterial diseases of pot plants

- PC 292 Protected chrysanthemum: Development of a fungicide strategy for the control of White Rust
 * **Final report 2009**
- PC 293 Tomato: Impact of sulphur-based fungicides on parasitic wasps
 * **Final report 2009**
- PC 295 Sweet pepper: Short term IPM solutions for leafhopper and aphid infestations
- PC 299 Cucumber and tomato: to evaluate new strategies for IPM of spider mite
- PC 302 Organic tomato: Phase 1 of contingency plans for the control of Tuta absoluta and Nesidiocoris tenuis.

Weeds (Crop Protection)

- HNS 35g Chemical weed control in container-grown nursery stock under protection
 * **Final Report 1998**

Water, energy & climate change

- PC/HNS 255 Biobeds/ biofilters for the safe treatment of pesticide waste and washings (extension to PC/HNS 255)
 * **Final report 2008**
- PC 4 Energy saving - the use of thermal screens in glasshouses
 * **Final Report 1987**
- PC 6 The effects of humidity on growth of tomato, cucumber and poinsettia
 * **1. Report 1987/88; 2. Report 1988/89**
- PC 6a The effects of humidity on poinsettia and begonia
 * **Final Report 1990**
- PC 13 Winter quality of pot chrysanthemums
- PC 13b Supplementary lighting for pot chrysanthemums
 * **Final Report 1992**
- PC 13c Chrysanthemums: the influence of supplementary lighting on winter quality and shelf-life of Yoder bred varieties of Pot'mums
 * **Final Report 1993**
- PC 23c Irrigation requirements of the tomato crop
 * **Final Report 1992**
- PC 23d Tomato: evaluation of recirculation systems
 * **Final Report 1991**
- PC 25 NOx pollution in greenhouses using boiler flue-gases

- * **Final Report 1991**
- PC 25a Gaseous air pollution in greenhouses using a low NOx CO2 generator
- * **Final Report 1991**
- PC 30 Tomatoes: the effect of humidification on plant growth, yield and fruit quality
- * **Final Report 1992**
- PC 30a Tomatoes: the effect of humidification on plant growth, yield and fruit quality
- * **Final Report 1992**
- PC 33a Alstroemeria: the effects of irrigation regime on the flower production cycle
- * **Final Report 1992**
- PC 33b Alstroemeria: evaluation of irrigation/nutrition requirements relative to stage of growth for a range of commercially grown varieties of Alstroemeria
- * **Final Report 1996**
- PC 41a Bedding plants: to assess the use of DIF during growing on and its influence on shelf life
- * **Final Report 1991**
- PC 41b Fuchsia: observation trial of DIF on a range of cultivars
- * **Final Report 1995**
- PC 41c Mechanisms involved in plant height regulation by temperature (DIF)
- * **Final Report 1995**
- PC 42 Pot plants: a comparison of light sources for use as supplementary lighting for winter pot plant production
- * **Final Report 1992**
- PC 46 Pot Plants: summer shading / humidification
- * **Final Report 1995**
- PC 47 Induced air movement to improve greenhouse climate
- * **Final Report 1994**
- PC 49 Optimal control of greenhouse climate
- * **Final Report 1994**
- PC 56 Hortitrans: a programme for calculating humidity and transpiration in greenhouses and its effects on tomato crops
- * **Computer prog & manual 91/92 (Lotus 123)**
- PC 68 Review of greenhouse design and technology for tomato and cucumber production
- * **Final Report 1993**
- PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production
- * **Final Report 1997**
- PC 72 Environmental control to prevent condensation on plants in greenhouses
- * **Final Report 1995**

- PC 73 Pot plants: a review of the experimentation on shade screens and humidification and the application of this technology in glasshouse pot plant production
- * **Final Report 1993**
- PC 74 Bedding plants: effect of temperature on growth, development and flowering
- * **Final Report 1993**
- PC 74a Bedding plants: effects of the photo-thermal environment on growth, development and flowering
- * **Final Report 1996**
- PC 79 Pot plants: optimisation of light intensity and CO₂ utilisation for Christmas production
- * **Final Report 1993**
- PC 82 Irrigation regimes for tomatoes grown on rockwool
- * **Final Report 1993**
- PC 83 Tomatoes: Irrigation systems for NFT
- * **Final Report 1992/95**
- PC 83a Tomatoes: commercial evaluation of yield relative to positional effects in NFT channels
- * **Final Report 1996**
- PC 92 Chrysanthemums: the combined influence of supplementary lighting and difference in temperature (DIF) on winter quality of commercially grown varieties
- * **Final Report 1994; Factsheet 3/95**
- PC 92a Chrysanthemums: the influence of combined supplementary lighting regimes and pot spacings on the quality and economics of the winter production of pot chrysanthemums
- * **Final Report 1995; Factsheet 2/96**
- PC 92b Chrysanthemums: the influence of daylength extension and supplementary lighting during flower maturation on the winter quality of pot chrysanthemums
- * **1. Report 1996; 2. Final Report 1998**
- PC 92c Pot chrysanthemums: comparison of the effects of reduced night-length on winter pot quality when imposed using either assimilation or tungsten lighting
- * **Final Report 1999**
- PC 92d Evaluation of the efficiency of production of winter pot chrysanthemums at 2000 lux and 4000 lux supplementary lighting
- * **Final Report 2002**
- PC 92e Supplementary lighting of pot chrysanthemums - a growers guide
- * **Publication '..pot chrysanthemums guide'**
- PC 94 Bedding plants: an investigation of the effects of a range of light and temperature regimes during the plug stage and their influence on the subsequent performance of the plants
- PC 97b Tomatoes and cucumbers: an investigation into the commercial significance of Pythium spp. in the propagation and production phases of hydroponic crops
- * **Final Report 2001**
- PC 104 AYR Chrysanthemums: an assessment of the interaction of supplementary lighting and spacing on winter quality

- * **Final Report 1996**
- PC 110 The influence of CO2 concentration and plant density on tomato yield and fruit quality
- * **Final Report 1996**
- PC 110a Tomatoes: practical guidelines for control of CO2 enrichment
- * **Grower guide and computer file 2002**
- PC 112 Foliage plants: improving winter production and plant quality with the use of supplementary lighting
- * **Final Report 1995**
- PC 114 Osteospermum: extending the season of production and examination of environmental effects on quality
- * **Final Report 1996; Factsheet 43/96**
- PC 114a Osteospermum: examination of the use of chilling treatments on a range of cultivars and evaluation of the effect of interrupted periods of warmer temperatures on floral initiation and subsequent flowering
- * **Final Report 1997**
- PC 119 Glasshouse irrigation: a review of R&D and evaluation of current techniques for irrigating edible crops grown in hydroponic systems
- * **Final Report 1997**
- PC 122a Tomatoes: optimisation of summer fruit quality (LINK)
- * **Final Report 2001**
- PC 128 The efficient use of light during bedding plant production (LINK)
- * **Final Report 2002**
- PC 142 Tomatoes: comparison of methods for determining irrigation frequency with measured crop water use
- * **Final Report 1999**
- PC 148 Chrysanthemums: investigation of reduced night length treatments to improve final stem weight and quality under winter and summer environments
- * **Final Report 1999**
- PC 151 Tomatoes: water uptake by NFT and rockwool grown crops
- * **Final Report 1999**
- PC 162 A computational fluid dynamic (CFD) study of flow patterns, temperature distributions and CO2 dispersal in a tomato glasshouse
- * **Final Report 2002**
- PC 166 Protected ornamentals: the efficiency of water use in different production systems
- * **Final Report 2000**
- PC 169 Optimization of the glasshouse environment in summer using the selective infra-red filter material, Luminance THB, as an internal shade screen
- * **Final Report 2000**
- PC 172 The use of dynamic climate control systems for the production of high value ornamental crops in the uk - a technical assessment
- * **Final Report 2001**
- PC 176 Protected crops: improving the efficiency of supplementary lighting equipment and installations

* **Final Report 2001; Publication 'Suppleme**

- PC 183 The development of a training programme to improve the use of climate control computers by protected crop growers in the UK
- * **Final Report 2002**
- PC 188 A technical and economic appraisal of technologies and practices to improve the energy efficiency of protected salad crop production in the UK
- * **Final Report 2003**
- PC 188a Enhancing the performance of temperature integrating climate control strategies - a commercial demonstration
- * **Final Report 2004**
- PC 190 Protected ornamentals: investigation into the potential savings available from adopting energy optimisation principles in UK glasshouse production
- * **Final Report 2002; Final Report 2003**
- PC 196 Bedding plants: The use of low temperature storage as a scheduling aid
- * **Final Report 2004; Factsheet 09/05**
- PC 196a Beddings plants: the use of low temperature storage as a scheduling aid in bedding plant production (Autumn Pansy and Primrose crops)
- * **Final Report 2004; Factsheet 09/05**
- PC 197 Protected ornamentals: a demonstration of the use of advanced greenhouse environmental controls for energy saving
- * **Final Report 2003; Final Report 2004**
- PC 198 An investigation into the performance of modern designs of thermal screens when used in protected edible crop production
- * **Annual Report 2004; Annual Report 2005**
- PC 198a The use of thermal screens for energy saving and greenhouse climate management in protected edible production - performance optimisation
- * **Final report 2006**
- PC 206 Maximizing energy saving in the production of protected ornamentals using temperature integration: the conflict with humidity control and CO2 enrichment
- * **New Project - Awaiting First Report**
- PC 207 Protected ornamentals: improved guidelines for humidity measurement and control when using advanced climate control strategies
- * **Final Report 2005**
- PC 216 Derivation of an energy efficiency analysis method for protected horticulture
- * **Final Report 2005**
- PC 226 Scoping study on air movement and CO2 use efficiency in protected crops
- * **Final Report 2005**
- PC 227 Optimising greenhouse environment and energy inputs for sweet pepper production in the UK - a commercial demonstration of the use of thermal screens and advanced climate control
- PC 227a Extension to project PC 227: Optimising greenhouse environment and energy inputs for sweet pepper production in the UK - a commercial demonstration of the use of thermal screens and advanced

climate control.

* **Final report 2007**

PC 228 Tomatoes: an investigation into apparent yield improvements associated with the installation of a micro-gas-turbine CHP facility

* **Final Report 2005**

PC 233 Energy optimisation in European greenhouses (Greenenergy) - EU funded project

PC 237 The use of supplementary lighting in protected ornamentals and edible crops: beyond maximisation of biomass

* **Final Report 2005; Final Report 2006**

PC 241 Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease

* **Final report 2009**

PC 250 Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.

* **Final report 2006**

PC 256 An initial investigation into the potential for using sealed greenhouse technologies in the UK

* **Final report 2007**

PC 265 An investigation into the technical and financial viability of biomass heating systems for greenhouse horticulture in the UK

* **Final report 2007**

PC 278 The development and commercial demonstration of ducted air systems for glasshouse environmental control

* **Annual report 2008**

PC 301 Targeting of humidity control, through the use of stem temperature measurements, to reduce stem botrytis and save energy in tomato production.

* **annual report**

Labour utilisation/ergonomics

PC 35b Sweet peppers: the effect of irrigation and trimming on fruit quality

* **Final Report 1991/92**

PC 36 Labour in bedding plant production - stage I

* **Video 'Dichlorvos fogs and labour use...**

PC 36a Labour in bedding plant production - stage II defining and describing improved methods for selected operations

* **Video and manual 'Labour use in bedding**

PC 71c Poinsettia: an investigation of the growth and shelf-life performance of new poinsettia cultivars at two different temperatures and an assessment of the costs of labour and energy in production

* **Final Report 1997**

PC 217 Improving the efficiency of labour use in tomato production - developing best practice

* **Final report 2006**

PC 217a Extension to project PC 217: Labour use in tomato production - a commercial application of task separation to maximise output from seasonal staff.

* **Final report 2007**

PC 257 Lean manufacturing - applying the principles to harvesting tomatoes

* **Final report 2008**

Waste/Environment

BOF/PC 140 Lilies: nutrition of forced bulbs in peat-free and recycled peat substrates

* **Final Report 2003**

PC 23b Cucumbers: recirculation of run-off solution from hydroponic systems

* **Final Report 1991**

PC 59 Environmental impact of waste solutions from hydroponic systems for the production of edible crops

PC 59a Environmental impact of run-off from the production of protected ornamental crops

PC 61 Cucumber: potential for re-use of substrates

* **Final Report 1995**

PC 63 Cucumber: evaluation of organic substrates

* **Final Report 1993**

PC 67 Reed beds: treatment of hydroponic run-off

* **Final Report 1994**

PC 113 Bedding plants: evaluation of reduced peat or alternative peat-free substrates for use in bedding plant production

* **Final Report 1995**

PC/BOF 140 PC/BOF 140

* **Final Report 2003**

PC 182 Composting of organic wastes to produce a peat replacement substrate for herb production.

* **Final Report 2003**

PC 209 Tomatoes: reducing waste disposal costs through use of sustainable wood-based growth media

* **Annual Report 2004**

PC 255 (Pa Biobeds: The safe disposal and treatment of pesticide waste and washings

* **Final report 2008**

PC/ HNS 25 Biobeds/ biofilters for the safe treatment of pesticide waste and washings (extension to PC/HNS 255)

Varieties/Products

PC 19c American Beauty bloom production: Techniques for improving flower quality

	* Final Report 1991
PC 21a	Protected lettuce variety evaluation
PC 21b	Tomatoes: trial of varieties for long season production
	* Final Report 1992
PC 21c	Variety trialling: AYR chrysanthemums
	* Final Report 1991
PC 21d	Cucumbers: variety evaluation
	* 1. Reports 1992 & 93 2. Report 1993
PC 21e	Protected lettuce: variety trials
PC 21f	Protected celery: green celery variety trial
	* Final Report 1995; Factsheet 41/95
PC 44	Hydrangea: preliminary trial on the production of early quality plants
	* Final Report 1992
PC 44a	Hydrangea: evaluation of new cultivars for growth, habit, marketability and shelf-life for marketing from the end of February to the end of March
	* Final Report 1996
PC 46a	Reiger Begonias: investigation into cultural factors that cause leaf necrosis to enable regimes to be developed which can eradicate this plant quality problem
PC 71	Assessment of new Poinsettia cultivars for production in the UK for marketing in December
	* Final Report 1993
PC 84	Protected celery - improvement of quality of British produce
	* Final Report 1993
PC 102	Leafy salads: production of speciality protected crops for processing
	* Final Report 1999
PC 137	Novel cut flowers: opportunities and research requirements for UK production
	* Final Report 1998
PC 154	Primrose (<i>Primula vulgaris</i>): factors affecting flowering and it variability
	* Year 1 Report 1999
PC 155	Poinsettia: strategies for the reduction of plant growth regulator use
	* Final Report 2001; Computer program 'Poi
PC 155a	Extension to HDC project PC 155 (Poinsettia: strategies for the reduction in the use of plant growth regulators): Development of HDC Poinsettia TrackerTM v2.0
PC 156	Poinsettia: commercial evaluation of new varieties and selections

* **Final Report 2002**

PC 156a Poinsettia: an assessment of the marketing and shelf-life quality of new varieties and selections grown under commercial conditions

* **Final report 2007**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

PC 214 Cyclamen: an assessment of cultivars during production and under shelf-life conditions

* **Final Report 2006**

PC 235 Bedding plants: Assessment of the suitability of a range of miniature cyclamen varieties for use as late summer/autumn flowering bedding plants

* **Final report 2006**

PC 246 Garden Plants: Development of New Marketing Opportunities Based on Controlled Flowering of Herbaceous Perennials for Early Spring and Late Summer sales

* **Final report 2008**

PC 259 Effects of variety and growth conditions on shelf life and appearance of pot and field-grown coriander

* **Final report 2008**

Product scheduling/supplychain

FV/PC 311 Optimising the propagation environment for endive, escarole, celery and Chinese cabbage

* **Annual report 2007, 2008**

PC 3a Extending the season of iceberg lettuce

* **Reports 1987 & 1987/88**

PC 5 Tomato fruit quality - pre- and post-harvest factors

* **Reports 1986/87, 1987/88 & 1988/89**

PC 19d An investigation into alternative methods of height control, production and marketing of a range of chrysanthemum cultivars

* **Final Report 1993**

PC 45 Bedding plants: a review of shelf life

* **Final Report 1992**

PC 45a Fuchsia: effect of variety on shelf life properties and the potential for extending shelf life with chemical and cultural means

* **Final Report 1993**

PC 71a Poinsettia: investigation of the response of a range of cultivars to cultural and chemical treatments with a view to improving shelf-life

* **Final Report 1994**

PC 71b Poinsettia: evaluation of the effect of pinching technique and compost type on the growth, development and shelf life of poinsettia cultivars

* **Final Report 1995**

PC 71d Poinsettia: investigation of the impact of temperature and light during the final phase of growth and an assessment of the interaction between marketing stage and shelf-life

- * **Final Report 1998; Factsheet 36/98**
- PC 74b Bedding Plants: Development and validation of a scheduling programme and decision support system for use by growers.
- * **Computer program 'Plant Scheduler' 96/97**
- PC 74c Bedding plants: optimising returns in production
- * **Final Report 1996**
- PC 79 Pot plants: optimisation of light intensity and CO2 utilisation for Christmas production
- * **Final Report 1993**
- PC 80 New Guinea Impatiens: the potential for extending the growing season and improving plant production and shelf life properties using cultural and chemical means
- * **Part 1 and 2: Final Report 1993**
- PC 80a New Guinea Impatiens: extending the growing season and improving plant production and shelf life using cultural and chemical means
- * **Part 1 and 2: Final Report 1994**
- PC 109 Vine-ripe tomatoes: optimising the picking colour stage and storage conditions of tomatoes to maximise flavour at the point of consumption
- * **Final Report 1995**
- PC 122 Tomatoes: the role of potassium and calcium nutrition in optimising fruit quality in summer
- * **Final Report 1997**
- PC 122a Tomatoes: optimisation of summer fruit quality (LINK)
- * **Final Report 2001**
- PC 127 Poinsettia: translation of the Dutch report "Poinsettia: rijende of vallende ster?" from Aalsmeer on the production and shelf-life of poinsettia
- * **Final Report 1996**
- PC 128 The efficient use of light during bedding plant production (LINK)
- * **Final Report 2002**
- PC/FV 135 Lettuce: a non-toxic crop protection system for lettuce (and other vegetable crops)
- * **Final Report 1993**
- PC 145 Cineraria: investigation of factors controlling flowering and development of a predictive model
- * **Final Report 2000**
- PC 146 Reiger begonia: supplementary lighting techniques to improve the quality of early season crops
- * **Final Report 1999**
- PC 152 Robust product design and prediction for post-harvest pot plant quality and longevity (LINK)
- * **Final Report 2003**
- PC 158 New guinea impatiens: early season production and improvement of shelf-life
- * **Final Report 1999**
- PC 167 Tomato: preliminary investigation of the effects of cultivar, stage of harvesting and post-harvest storage on fruit lycopene content

* **Final Report 1999**

PC 196 Bedding plants: The use of low temperature storage as a scheduling aid

* **Final Report 2004; Factsheet 09/05**

PC 196a Beddings plants: the use of low temperature storage as a scheduling aid in bedding plant production (Autumn Pansy and Primrose crops)

* **Final Report 2004; Factsheet 09/05**

PC 200 Objective criteria for the standardisation and improvement of bedding plant quality

* **Final report 2007**

PC 201 Cucumber: a technical and economic evaluation of AYR production

* **Final Report 2007**

PC 203 Practical demonstration of scheduling techniques for flowering patio plants

* **Final Report 2004**

PC 205 Alstroemeria: towards understanding and optimising productivity, quality and scheduling of Alstroemeria under UK production conditions through monitoring and analysing data from grower holdings

* **Final report 2008**

PC 208 Poinsettia: assessment of the value of lighting a late crop to improve throughput

PC 218 Development and promotion of a rapid test for measurement of nitrate in lettuce and spinach at UK production and produce distribution centres

* **Final Report 2005**

PC 221 Developing novel approaches to the sustainable production of ornamentals in the UK HDC Research Fellowship

* **Final report 2007**

PC 224 Improved scheduling of primrose

* **Final report 2008**

PC 234 Bedding Plants: Benchmarking current transport and distribution practices with the aim of identifying factors that determine plant quality during transit and methods to maintain quality

* **Final report 2008**

PC 238 Improved scheduling of violas and pansies through the use of night-break lighting

* **Final report 2007**

PC 247 Collaborative research programme in partnership with Saxon State Institute for Agriculture, Pillnitz, Germany, for the development of "new" ornamental plants for early season sales

* **Final report 2007**

PC 267 Collaborative research programme in partnership with Saxon State Institute for Agriculture, Pillnitz, Germany for the development of 'new' ornamental plants for early season sales. Part II: Scheduled production and quality improvement

* **Final report 2007**

Nutrition & other inputs

CP 26 The use of spectral modification to control plant growth and quality - a biological framework for
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predicting crop responses (HDC Studentship)

* **Current**

CP 37 Decision support for glasshouse ornamental production using digital imaging and artificial neural networks (HDC Studentship)

* **Final report 2008**

BOF/PC 140 Lilies: nutrition of forced bulbs in peat-free and recycled peat substrates

* **Final Report 2003**

PC 1 Crop Production in doubleskin polythene structures. (N.B. Panel proposal is 'energy saving by the use of polythene structures')

PC 2 Tomato temperature regimes

* **Final Report 1988**

PC 4 Energy saving - the use of thermal screens in glasshouses

* **Final Report 1987**

PC 6a The effects of humidity on poinsettia and begonia

* **Final Report 1990**

PC 10 Celery: temperature monitoring in relation to bolting

* **Final Report 1989**

PC 12 Development of interrupted-lighting schedules for a range of AYR spray chrysanthemum cultivars

* **Final Report 87/88; Supplim Report 88/89**

PC 14 Module production of bedding plants; improved seed performance

PC 19 Natural season chrysanthemums - growing problems under winter conditions

* **Reports 1988 & 1989**

PC 19b Natural season chrysanthemums: growing problems under winter conditions

* **Final Report 1990**

PC 19e An investigation of post harvest handling techniques and chemical treatments to establish the best method of achieving maximum shelf-life of American Beauty

* **Final Report 1993**

PC 19f Chrysanthemum: cultivar selection and production techniques for natural season bloom and spray production

* **Final Report 1994**

PC 23a An investigation into the production of main crop tomatoes using rockwool and NFT

* **Final Report 1991**

PC 23c Irrigation requirements of the tomato crop

* **Final Report 1992**

PC 24 Hydroponic systems for AYR chrysanthemums

* **Final Report 1992**

- PC 24c Chrysanthemum: examination of the influence of repeated cropping in soil and hydroponic substrate-based systems on crop quality and disease incidence/control and to investigate the potential for 'direct-sticking' of cuttings in hydroponic production
- * **Final Report 1995**
- PC 25 NOx pollution in greenhouses using boiler flue-gases
- * **Final Report 1991**
- PC 25a Gaseous air pollution in greenhouses using a low NOx CO2 generator
- * **Final Report 1991**
- PC 35 Sweet peppers: review of research findings on aspects of fruit quality
- * **Final Report 1990**
- PC 35a Sweet peppers: factors affecting fruit quality
- * **Final Report 1991**
- PC 35c Sweet peppers: effect of fruit load on blossom-end rot and fruit quality
- * **Final Report 1993**
- PC 41 Pot and bedding plants: control of plant stature by manipulation of day and night temperatures (DIF regimes)
- * **Final Report 1993**
- PC 48 Lettuce: early production of bagged crisp and early lettuce under glass
- * **Final Report 1991**
- PC 54 Tomatoes: an examination of the efficiency of spray application to commercial crops
- * **Final Report 1992**
- PC 55 Tomatoes: use of potassium nitrate & chloride and calcium nitrate & chloride to elevate root zone conductivities and their effect on yield and quality
- * **Final Report 1992**
- PC 55a The influence of reduced nitrate input on tomato yield and fruit quality
- * **Final Report 1992**
- PC 61 Cucumber: potential for re-use of substrates
- * **Final Report 1995**
- PC 63 Cucumber: evaluation of organic substrates
- * **Final Report 1993**
- PC 64 Tomatoes: optimum planting stage and plant density for the V-system
- * **Final Report 1992**
- PC 65 Regulation of tomato fruit size by plant density and truss thinning
- * **Final Report 1992**
- PC 65a Regulation of tomato fruit size by taking side shoots
- * **Final Report 1994**
- PC 75 Bedding plants: proposal for the development of a germination room for use by growers to improve germination rates and improve space utilisation

* **Literature Review 1992**

- PC 85 Bedding plants: growth regulation by 'air brushing'
- * **Final Report 1993**
- PC 85a Bedding plants: growth regulation by mechanical brushing
- * **Final Report 1996**
- PC 86 Bedding plants: investigation of cultural methods for controlling plant height
- * **Reports 1993/94 & 1995; Factsheet**
- PC 88 Glasshouse lettuce: reduction of nitrate levels
- * **Final Report 1994**
- PC 88a Development of a decision support system for nitrogen fertiliser application in soil grown glasshouse crops
- * **Final Report 2000**
- PC 104 AYR Chrysanthemums: an assessment of the interaction of supplementary lighting and spacing on winter quality
- * **Final Report 1996**
- PC 105 An evaluation of the effect of container sizes, sowing dates and temperature on the development and blindness of *Primula vulgaris* cultivars, flowering from mid February to the end of April
- * **Final Report 1996; Factsheet 32/96**
- PC 106 Evaluation of plant growth regulators as a method of controlling leaf size on bedding primrose and polyanthus varieties grown under protection
- * **Final Report 1995**
- PC 110 The influence of CO₂ concentration and plant density on tomato yield and fruit quality
- * **Final Report 1996**
- PC 110a Tomatoes: practical guidelines for control of CO₂ enrichment
- * **Grower guide and computer file 2002**
- PC 111 Cucumbers: the influence of reduced nitrate input on yield and fruit quality
- * **Final Report 1996**
- PC 112 Foliage plants: improving winter production and plant quality with the use of supplementary lighting
- * **Final Report 1995**
- PC 113 Bedding plants: evaluation of reduced peat or alternative peat-free substrates for use in bedding plant production
- * **Final Report 1995**
- PC 114 *Osteospermum*: extending the season of production and examination of environmental effects on quality
- * **Final Report 1996; Factsheet 43/96**
- PC 114a *Osteospermum*: examination of the use of chilling treatments on a range of cultivars and evaluation of the effect of interrupted periods of warmer temperatures on floral initiation and subsequent flowering
- * **Final Report 1997**
- PC 124 Cucumbers: plant establishment and nutrition

- * **Final Report 1998; Factsheet 37/98**
- PC 130 Passiflora: factors influencing the long term storage and germination of seed
- * **Annual Reports 1995/1996/1997**
- PC 133 Chrysanthemums: an investigation of factors influencing root establishment during the winter period.
- * **Final Report 1998**
- PC 134 Ornamentals: a review of the role of ethylene on post harvest flower senescence and abscission and methods to ameliorate ethylene effects
- * **Final Report 1997; Factsheet 24/97**
- PC 136 Tomatoes & cucumbers: evaluation of effective use of pipe-rail boom sprayers
- * **Final Report 2000; Factsheet 20/00**
- PC 138 Chillii peppers: evaluation of crop management systems
- * **Final Report 1999**
- PC/BOF 140 PC/BOF 140
- * **Final Report 2003**
- PC 150 Bedding plants: the use of spectral filters to regulate plant growth
- * **Final Report 1999**
- PC 151 Tomatoes: water uptake by NFT and rockwool grown crops
- * **Final Report 1999**
- PC 159 Cucumbers: the role of environmental and agronomic factors in carbon dioxide toxicity
- * **Final Report 2002**
- PC 162 A computational fluid dynamic (CFD) study of flow patterns, temperature distributions and CO2 dispersal in a tomato glasshouse
- * **Final Report 2002**
- PC 168 Cut flowers: evaluation and development of plastic films and low cost growing structures
- * **Final Report 2003**
- PC 187 Protected crops: assessment of glass cleaning practices and the development of best practice guidelines
- * **New Project - Awaiting First Report**
- PC 192 A review of research work and production practices in Alstroemeria cultivation
- * **Final Report 2003**
- PC/HNS202 Review of IT systems requirements for the HNS and Ornamentals industry
- * **Final Report 2004**
- PC 226 Scoping study on air movement and CO2 use efficiency in protected crops
- * **Final Report 2005**
- PC 228 Tomatoes: an investigation into apparent yield improvements associated with the installation of a micro-gas-turbine CHP facility
- * **Final Report 2005**

- PC 229 'Wash and Grow': The development of non-destructive tomato seed testing
* **Final report 2006**
- PC 237 The use of supplementary lighting in protected ornamentals and edible crops: beyond maximisation of biomass
* **Final Report 2005; Final Report 2006**
- PC 241 Protected hydroponic tomato: Investigating the potential for various novel non-chemical techniques for the suppression or control of root-mat disease
* **Final report 2009**
- FV/HNS/PC2 Bedding Plants: An investigation into the potential growth promoting and disease suppressive effects of different substrate mixes and commercially available bio-stimulants under different nutrient regimes
* **Final report 2006**
- PC 243 Poinsettia: Assessment of strategies for efficient utilisation of nursery resources
* **Final report 2007**
- PC 244 Lettuce: The use of novel irrigation techniques as a management tool to restrict nitrate uptake in winter crops
* **Final report 2006**
- FV245 (PC) Protected Salads: Effect of spectrally modifying plastics on the harvest nitrate content of baby leaf and lettuce
* **Final Report 2003 & Final Report 2006**
- PC 250 Protected lettuce: A feasibility study to investigate the economics of sustainable lettuce production in hydroponics.
* **Final report 2006**
- PC 263 Protected lettuce - to assess the effects of soil nitrogen levels, trickle irrigation and light levels on nitrate accumulation in winter crops
* **Final report 2007**
- PC 266 Assessment of reflective films for pot plant production
- PC 275 Lettuce and spinach: Preparation of paper for submission to EFSA supporting the case for lifting levels of permissible nitrate in EU regulations relating to salad and vegetable crops.
* **Final Report 2007**
- PC 297 Lettuce: To investigate nitrate levels in a range of butterhead and curly lettuce
* **Final report 2009**

General

- CP 24 Future development of the British Ornamental Plant Producers (BOPP) Accreditation Scheme to encompass all sectors of the UK Ornamentals Industry
* **Current**
- CP 49 New opportunities for UK horticultural producers.
* **Current**
- BOF/PC 204 Cut flowers & bulbs: Developing the British Ornamental Plant Producers (BOPP) accreditation scheme for cut flower and bulb producers

FV/HNS/PC2 FV/HNS/PC242

PC 16 Study visits to Holland; Disease problems (M McPherson), New crops (J Ashdown), New research (K Cockshull)
 * **Reports 1987/88**

PC 33 Alstroemeria
 * **Final Report 1993**

PC 52a An assessment and evaluation of the safety aspects of low volume mist (LVM) systems and the drafting of standard operating procedures
 * **Final Report 1992**

PC 53 Standards for plastic clad greenhouses
 * **1. Final Report 91; 2. Final Report 92**

PC 66a British Glasshouse Producers Information and Education Campaign (1993)

PC 78 British Bedding and Pot Plant Association Technical Field Officer

PC 81 Survey of bedding and pot plant growers
 * **Final Report 1992**

PC 91 Grant to the BBPA to assist with the establishment of the Ornamentals Advice Centre

PC 91a Ornamentals Advice Centre: proposal for a telephone survey
 * **Final Report 1995**

PC 100a Travel to the ISHS symposium on pot & bedding production at Michigan State University
 * **Report 1989**

PC 100b The 1993 International Conference on Thysanoptera
 * **Report 1993**

PC 120 Pot & bedding plants: support for the British Ornamental Plant Producers Code of Practice
 * **Code of Practice 1996**

PC 193 Cucumber: to determine the feasibility of establishing an up to date development and technology transfer facility for the cucumber industry
 * **Final Report 2002**

PC 211 Technology transfer projects for the pot & bedding plant sector

PC 211a Technology transfer initiatives for the pot and bedding plant sector

PC 220 Scoping project ideas for the HDC Protected Crops Panel

