



**Centre name:** Warwick Crop Centre, School of Life Sciences, University of Warwick

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## The research programmes of your centre

### Specie : Integrated Pest Management

Person of contact for this programme: Rosemary Collier

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Vegetable material	Technical itinerary	Integrated protection
All crops but especially brassica, carrot, lettuce, allium	<ul style="list-style-type: none"> <li>• Controlled environment facilities – cabinets, rooms, glasshouses and containment facilities (dedicated labs, rooms and glasshouse compartments);</li> <li>• Facilities for work on outdoor crops, protected crops, semi-protected crops;</li> <li>• Rothamsted suction trap;</li> <li>• Insect cultures, specialised pest areas (e.g. carrot fly, narcissus pests);</li> <li>• Collections of biocontrol agents;</li> </ul>	<ul style="list-style-type: none"> <li>• All aspects of biology and ecology of pests of a wide range of horticultural crops – edible and ornamentals (including bulbs) – particularly flies, aphids, Lepidoptera, thrips, Coleoptera, bugs ;</li> <li>• Integrated pest management;</li> <li>• Biological and cultural control of pests particularly with microbial antagonists, botanicals, biofumigation, green manures etc;</li> <li>• Applications for novel pesticides on minor crops;</li> <li>• Host-plant resistance to insects (phenotyping and genomics);</li> <li>• Decision support – monitoring and forecasting;</li> </ul>

## Specie : Integrated Disease Management

Person of contact for this programme: John Clarkson

Email: John.Clarkson@warwick.ac.uk

Vegetable material	Technical itinerary	Integrated protection
All crops but especially brassica, carrot, lettuce, allium	<ul style="list-style-type: none"><li>• Controlled environment facilities – cabinets, rooms, glasshouses and containment facilities (dedicated labs, rooms and glasshouse compartments);</li><li>• Facilities for work on outdoor crops, protected crops, semi-protected crops;</li><li>• Pathogen cultures, specialised and disease areas (e.g. cavity spot, sclerotinia, onion white rot, clubroot, , fungi, bacteria and viruses);</li><li>• Collections of biocontrol agents;</li></ul>	<ul style="list-style-type: none"><li>• All aspects of biology, epidemiology and ecology of pathogens of a wide range of agricultural and horticultural crops – edible and ornamentals (including bulbs) – particularly, viruses, fungi (especially <i>Sclerotinia</i>, <i>Fusarium</i>, <i>Botrytis</i>), oomycetes (<i>Albugo</i>, <i>Hyaloperonospora</i>, <i>Pythium</i>) and bacteria (<i>Pseudomonas</i>, <i>Xanthomonas</i>);</li><li>• Microbial ecology and community research and analysis, particularly in the rhizosphere;</li><li>• Integrated disease management;</li><li>• Biological and cultural control of pathogens, particularly with microbial antagonists, botanicals, biofumigation, green manures etc;</li><li>• Applications for novel pesticides on minor crops;</li><li>• Host-plant resistance pathogens (phenotyping and genomics);</li><li>• Decision support – monitoring and forecasting;</li><li>• Pangenomic-based diagnostics and quantification of plant pathogens.</li></ul>

## Specie : Integrated Disease Management – Plant Viruses

Person of contact for this programme : John Walsh

Email: [john.walsh@warwick.ac.uk](mailto:john.walsh@warwick.ac.uk)

Vegetable material	Technical itinerary	Integrated protection
All glasshouse and field vegetable crops but especially brassica and lettuce	<ul style="list-style-type: none"> <li>• Controlled environment facilities – cabinets, rooms, glasshouses and containment facilities (dedicated labs, rooms and glasshouse compartments)</li> <li>• Facilities for work on outdoor crops, protected crops, semi-protected crops</li> <li>• Rothamsted suction trap</li> <li>• Virus vector cultures including fungi and aphids, specialised handling facilities</li> <li>• Large collection of plant virus isolates form around the world and antisera</li> <li>• A network of collaborators including other research groups, extension workers, farmers and Rothamsted Research</li> </ul>	<ul style="list-style-type: none"> <li>• All aspects of biology and ecology of viruses of a wide range of horticultural crops – edible and ornamentals – particularly potyviruses and poleroviruses, aphid vectors, fungal vectors</li> <li>• Integrated disease management;</li> <li>• Cultural, chemical and biological control of viruses particularly natural plant resistances, insecticides, virus status of vectors etc.</li> <li>• Virus detection</li> <li>• Virus monitoring in crops and aphids vectors</li> <li>• Applications of pesticides</li> <li>• Host-plant resistance to viruses (phenotyping and genomics)</li> <li>• Introgression of virus resistance from wild species</li> <li>• Virus resistance gene mapping and identification</li> <li>• Maker-assisted selection</li> <li>• Decision support – monitoring and forecasting</li> </ul>

## Specie : Vegetable Genetic Improvement Network

Person of contact for this programme: Peter Walley

Email: [Peter.G.Walley@warwick.ac.uk](mailto:Peter.G.Walley@warwick.ac.uk)

Vegetable material	Technical itinerary	Other subjects
<a href="http://www2.warwick.ac.uk/fac/sci/lifesci/research/vegin/">http://www2.warwick.ac.uk/fac/sci/lifesci/research/vegin/</a> Vegetables and especially brassica, carrot, lettuce, allium	<ul style="list-style-type: none"> <li>• Controlled environment facilities – cabinets, rooms, glasshouses and containment facilities (dedicated labs, rooms and glasshouse compartments);</li> <li>• Facilities for work on outdoor crops, protected crops, semi-protected crops;</li> <li>• Crop genetic diversity collections – Defra UK Vegetable Genebank (national collection of range of vegetables - cultivars, landraces, wild relatives) and unique</li> </ul>	<p>The Network brings together research focused on key vegetable crops and encourages collaborations between industry and researchers to address how genetic improvement of crop varieties can contribute to a sustainable increase in food production to meet the twin challenges of food security and climate change.</p> <p>VeGIN brings together research on the genetic improvement of carrot,</p>

	<p>research-orientated diversity sets for vegetable brassicas, oilseed rape, lettuce, onion and carrot.</p> <p><a href="http://www2.warwick.ac.uk/fac/sci/lifesci/wcc/gru/genebank/">http://www2.warwick.ac.uk/fac/sci/lifesci/wcc/gru/genebank/</a></p>	<p>onion, leafy vegetables and salads and maintains the genetic resource collections in the UK Vegetable Gene Bank. It benefits from knowledge arising from satellite projects funded by industry and other government funders and provide underpinning resources for such projects.</p>
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### Specie : UK Vegetable Gene Bank

Person of contact for this programme : Charlotte Allender

Email: [Charlotte.Allender@warwick.ac.uk](mailto:Charlotte.Allender@warwick.ac.uk)

Vegetable material	Technical itinerary	Other subjects
<p><a href="http://www2.warwick.ac.uk/fac/sci/lifesci/wcc/gru/genebank/">http://www2.warwick.ac.uk/fac/sci/lifesci/wcc/gru/genebank/</a></p> <p>Vegetables and especially brassica, carrot, lettuce, allium.</p>	<p>The UK Vegetable Genebank collections encompass a wide range of small-seeded, mainly outbreeding vegetables (current/obsolete cultivars and landraces) and associated wild taxa including:-</p> <p><b>Allium</b> onion, leek, Welsh leek and wild taxa</p> <p><b>Apium</b> celery and celeriac</p> <p><b>Brassica oleracea</b> broccoli, Brussels sprout, cabbage, cauliflower, kale &amp; kohlrabi</p> <p><b>Brassica napus</b> horticultural &amp; fodder forms (kale &amp; swede)</p> <p><b>Brassica rapa</b> horticultural &amp; fodder forms (Chinese cabbage, broccoletto &amp; turnip)</p> <p><b>Brassica juncea</b> horticultural &amp; fodder (leaf mustards)</p> <p><b>Daucus</b> carrot and wild taxa</p> <p><b>Lactuca</b> lettuce and wild taxa</p> <p><b>Raphanus</b> radish and wild taxa various other minor vegetables and salad crops</p>	<p>The UK Vegetable Genebank manages a collection of almost 14,000 seed samples from a range of vegetable crops. We aim to conserve diversity within vegetable crops and to ensure it remains available to plant breeders and researchers in the future.</p> <p>Our activities form part of a broader national and international effort to maintain and increase the genetic diversity in our crops in order to support resilient and sustainable food production systems.</p>

**Specie :** Systems sustainability

Person of contact for this programme: Rob Lillywhite

Email: Robert.Lillywhite@warwick.ac.uk

Vegetable material	Technical itinerary	Other subjects
All crops	<ul style="list-style-type: none"><li>• Agronomy</li><li>• Soil health and quality</li><li>• Crop nutrition</li><li>• Resource use and waste generation</li><li>• Environmental accounting techniques (life cycle assessment, footprinting, mass balances).</li></ul>	<ul style="list-style-type: none"><li>• The interactions between land management, agriculture and the environment</li><li>• Environmental accounting (carbon, water and environmental footprinting, mass and energy balances)</li><li>• Greenhouse gas emissions from agriculture</li><li>• Ecosystem services</li><li>• Composting, anaerobic digestion and the application of organic materials to agricultural land</li><li>• Nitrogen balances in agriculture</li><li>• The nitrogen nutrition of crops and the release of nitrogen from crop residues</li></ul>

## Current partnership with other research centres (national or international)

Species :

- We work with a range of research centres, companies and other organisations to develop innovative solutions for the wider crop production industry. Industry collaborations include:
  - agrochemical companies;
  - companies producing biopesticides;
  - primary producers, processors and retailers, e.g. we are members of the Waitrose Agronomy Group;
  - seed companies
  - agronomy companies
- International networks include IOBC, EPSO.

## Are you searching for more European partnerships with other research centres?

On what species : On any horticultural crops, particularly vegetables

What kind of projects are you searching for: European projects related to crop production, crop improvement and crop protection.

What kind of partners are you searching for? From which countries?

We seek partners from research organisations and industry partners from along the supply chain: agrochemical companies; companies producing biopesticides; primary producers, processors and retailers; seed companies ; agronomy companies, retailers, policy makers, NGOs. From any country.