

How to optimise crop management of protected salad crops

Optimise yield and quality and profit • Reduce risk and control costs
Save money on products, time, and application



Designed for:

Trainee agronomists (pre-BASIS), growers, technical managers, supervisors, retail technologists and horticulture graduates who wish to gain an understanding of crop production and pest and disease control in protected salad crops to achieve maximum commercial crop yields and quality. The course covers tomato, cucumber, sweet pepper, chilli, aubergine and lettuce crops

Entry requirement:

An intermediate course best suited to those who are **able** to demonstrate some practical experience

Price:

£225 + VAT

Duration:

A one day classroom-based course

CPD points:

CPD points to be awarded

Learning outcomes:

At the end of this course you will be able to:

- Understand the key components and operations of the protected salad industry
- Manage production environments which affect plant physiology
- Control water quality, electrical conductivity (EC) and pH in greenhouse production
- Manage nutrition for yield and quality
- Choose and manage irrigation and the systems used to provide crops with water and nutrients
- Understand the use of CO₂ in greenhouse production (tomato crops)
- Manage climate in the greenhouse for plant growth and crop production

- Understand the principals behind Integrated Pest Management (IPM)
- Identify key pests and diseases in greenhouse salad crop production (including life cycles, sources of pests and disease, crop hygiene, scouting and monitoring)
- Control key pests and diseases in greenhouse salad crops
- Use beneficial insects and monitoring tools in IPM programmes
- Use crop protection agents in controlling pests and diseases in greenhouse environments
- Understand how bio-pesticides can support the grower in IPM programmes

Content:

Classroom module 1 (half day) – Crop production:

General protected salad industry overview:

- Crops, greenhouse structures, industry and planting through to harvesting

Greenhouse plant physiology:

- Light, temperature and humidity interactions with protected salad crops, and their connection to greenhouse plant physiology and environmental management

Water quality, EC and pH, and irrigation:

- Assessing water quality
- Characteristics of different treatment systems and their application
- Principle factors involving EC and pH
- Irrigation strategies to match growing media
- Irrigation strategies to match water uptake and drainage
- Irrigation strategies to control root-zone water content and EC
- Plant evaporation and transpiration

continued overleaf

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Greenhouse environmental management:

- The principal factors affecting environmental management, including the effect of outside conditions on inside conditions (temp, relative humidity, wind, radiation, rain)
- Growers' tools used to influence the internal environment (heating, cooling, fans, screens, climate control systems, fogging, etc.)
- Principles of ventilation

Plant structure, nutrition and nutrient management:

- Assessment of plant structure
- Photosynthesis, nutrition, characteristics of different root-zone factors and their application
- Principal factors involving nutrient management, including functions of nutrient elements, nutrient uptake principles, plant disorder symptoms, deficiencies and toxicities, nutrient management, difference between root zone and input solutions, interpretation of root zone nutrient analysis, adjusting input solution based on drain analysis, and basic formula calculations

Substrate/media types and characteristics:

- Assessment of media types, characteristics, their application, and the principal factors affecting their selection, including ideal media properties, void space, porosity, aeration, cation exchange capacity and pH
- Commercial hydroponic media types and their characteristics

CO₂ enrichment of greenhouses:

- The benefits, costs and equipment required to correctly enrich a greenhouse with carbon dioxide for maximum crop growth and quality, including CO₂ enrichment principles, influence of light and temperature on CO₂ enrichment, enrichment technology options, enrichment targets and strategies (evaporators)

Classroom module 2 (half day) – Integrated crop management:

Common greenhouse pests, diseases and IPM:

- Assessment of common pests and characteristics of different diseases
- The principal factors involving IPM
- Implementation of bio-controls and bio-pesticides to control common greenhouse pests
- Identifying key pests and diseases (e.g. taxonomy, life cycles)
- IPM programmes, including consideration of sources of plant pests and diseases, crop hygiene, and plant fungal, bacterial and virus conditions
- Common physiological problems and their treatments

Greenhouse crop protection principles:

- Basic principles of crop spraying, including high volume, low volume and ultra-low volume systems, and suitable vertical and horizontal spray systems for greenhouses crops
- Chemical crop protection options (dripping, spraying/fogging/low volume misting, dusting, sulphur evaporators)

Trainer:

Dr Richard Binks, Director, FreshTec



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