

# **BASIS Certificate in Crop Protection - Amenity Horticulture For Field, Sales and Technical Staff (FSTS)**

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Probable training time per module is shown above in brackets. This is a guide for trainers and candidates to help structure the course training programme. The experience level of candidates, prior to starting the training course, will have a significant effect on the time required per module and trainers should plan the programme timing based on the candidates' pre-identified strengths and weaker areas.

It is expected that all candidates will have a working knowledge of the seven core modules. In depth knowledge will be required relating to the skill area module pre-selected at least 1 month prior to the exam date.

# **BASIS CERTIFICATE IN CROP PROTECTION (AMENITY HORTICULTURE) SYLLABUS & INFORMATION**

This syllabus is prepared for those individuals who are involved in the advice, sale or supply of pesticides in the amenity industry. Those covered by this section would thus include:

- Contractors who sell or give advice
- Distributors who sell or give advice
- Pesticide manufacturers and suppliers
- Consultants, agents, managers, specifiers and local authority managers who are involved in pesticide sales or advice

The amenity industry includes hard surface areas, turf, amenity grass and sports areas, large public and private gardens (eg National Trust type properties), parks and other areas where spraying is carried out by in-house or contract labour, private forestry companies, local authorities, motorway and other road verge maintenance, aquatic and dry areas and industrial site maintenance. This may include amateur gardens where contractors are employed using professional products.

## **BACKGROUND**

The BASIS Certificate in Crop Protection for Field Sales and Technical Staff (FSTS) has been established since 1978 to provide training and certification for sellers of pesticides and those giving advice on their use.

In 1985 the Food & Environment Protection Act (FEPA) made certification a statutory obligation for pesticide sellers.

"No person shall sell, supply or otherwise market to the end-user a pesticide approved for agricultural use unless he has obtained a certificate of competence recognised by the Ministers, or he sells or supplies that pesticide under the direct supervision of a person who holds such a certificate"

The BASIS Certificate in Crop Protection has been approved by Ministers to meet the requirements of Schedule 2 of the Control of Pesticide Regulations for certification of those involved in the sale, advice and supply of pesticides.

This booklet is designed to help those involved with the certificate and provide guidelines to the subject areas which need to be covered to enable candidates to achieve a satisfactory level of competence.

It is essential that candidates understand the need for a practical approach to training because in order to be successful, individuals must be able to give sound technical advice on site. Obviously some of the training will be of a theoretical nature but both the syllabus and training programme should be interpreted to provide practical instruction wherever possible.

All of those employed in the sale of pesticides and/or giving advice on their use must, under the Control of Pesticides (Amendment) Regulations 1997, have obtained a Certificate of Competence or exemption from it within three years of entering the pesticide industry. New staff to the industry will be allowed a period of three years in which to qualify, during which they will be working under the direct supervision of a qualified member of staff.

Candidates must have had satisfactory training and supervised field experience before entering for the BASIS examination. If in doubt as to this requirement, please contact the BASIS office.

Courses are run as either day release or in blocks of a week at a time; please contact the trainer of your choice for details.

## **OTHER BASIS QUALIFICATIONS FOR AMENITY HORTICULTURE**

### **BETA Amenity**

A new course designed to build knowledge and skills in biodiversity and the environment relevant to Amenity Horticulture.

### **POWER**

Protection of Water, the Environment and Recommendations. This course is designed for those who organise and control pesticide application, but who may not actually do the spraying. However, increasingly, spray operators who want to broaden their knowledge and earn NRoSO points are taking the POWER course.

### **BASIS Diploma**

Candidates who wish to develop their knowledge and skills to achieve an overall recognition of their hard work and learning acquired, can achieve the BASIS Diploma. Candidates must pass the Crop Protection (FSTS) Certificate, BETA, Soil & Water Management, the Plant Protection Award, FACTS and an Advanced Module.

### **Further News**

BASIS is planning to introduce, at a later date, an equivalent Diploma specifically for the Amenity Horticulture sector.

## EXAMINATION GUIDELINES

### Introduction

Examinations are conducted by BASIS for Training Providers who run training courses for the BASIS Certificate in Crop Protection - Amenity Horticulture in various parts of the UK. The examination is divided into four sections, all of which must be passed. They are:

- a) 2 multi-choice question papers
- b) practical identification test
- c) simulated site exercise
- d) site station and panel vivas

### Overall Standard for Examination

The structure for the BASIS Certificate in Crop Protection in Amenity Horticulture was revised in March 2007. The examination (and the course training associated with it) now has a number of central, core modules, all of which candidates must pass, plus a more specialised module(s) for a skill area that candidates (and their employers) will select prior to starting the course tuition (and at least one month prior to the exam date and notified to BASIS) and for which the pass mark must also be achieved

The skill area module choices are:

- 1. Hard surface areas
- or 2. Turf, amenity grass and sports areas
- or 3. Shrubs, borders and container plants

For a candidate to achieve a BASIS Certificate in Crop Protection - Amenity Horticulture they must pass the core modules and at least one other (skill) module. The skill area selected will be shown on the pass certificate. By prior arrangement and prior booking candidates may sit a second or third skill area exam at a later date. This means candidates can build up their qualifications to include additional skill areas.

Please note candidates will only be tested on the core modules and one skill area on any one exam day. Core module training would be the same for all, followed by separate skill area training.

## THE EXAM

The exam procedure and structure for the full certificate and for the additional skill exams are covered in appendices I + II at the rear of this booklet.

### **Multi-Choice Question Paper**

Questions for the paper have been submitted by the industry and are validated by a Technical Panel. There will be 2 papers consisting of 30 multi-choice questions each, to be completed within 1½ hours. Four possible answers are given for each question and in each case only one is correct. Candidates are examined with 30 multi choice questions on the core modules and 30 multi choice questions on the pre-selected skill area module.

Pass mark for this section - 70% in each paper

### **Practical Identification Test**

Candidates are required to identify equipment, relevant industry items, common weeds, pests and diseases either in an examination room or a laboratory. All samples in the identification test will be common to Amenity Horticulture and, where appropriate, at least 60% should be fresh samples. All should be previously unseen by candidates. The test should include 30 samples with at least 5 for Application, 10 for Weeds, Pests and/or Diseases relevant to the core modules and 10 relevant to the Skill Area selected, with a further 5 appropriate items from any of the relevant syllabus modules.

Pass mark for this section - 85%

### **Simulated Site Exercise**

Candidates are required to complete an exercise which describes a scenario relevant to the skill module selected and sets questions relevant to the scenario and to that module. It will also incorporate elements of the core modules where appropriate.

Pass mark for this section - 60%

### **Site Stations and Panel Viva (3 vivas per candidate)**

#### a) & b) Site Station Vivas

All candidates are expected to have practical knowledge of recommendations, application, legislation and storage appropriate to pesticides as outlined in this syllabus. All candidates will be tested by representatives of the industry at the site stations. Books and back-up materials

are not required but candidates should be able to tell the examiner where they would seek the necessary information should the need arise.

There will usually be two vivas in this section of the exam: one viva will be with an expert in the skill area module selected and the second will cover application, safety, product registration and storage. Marks from both 'Site Stations' are taken into account when assessing a candidate's ability. Each viva should last for approximately 15 - 20 minutes.

### c) Viva Panel

The final section of the examination involves the 3<sup>rd</sup> viva with candidates meeting a panel of the site station examiners. The purpose of this section is to enable the panel to make a final assessment of the candidate as a competent adviser for pesticides used in amenity horticulture. Where available, the candidate's marks from the previous sections are taken account of by the panel. The interview is carried out in an informal and friendly atmosphere. Time allowed is 15-20 minutes.

Pass mark for this section - 85% in each viva

NB - Companies are reminded that candidates must have had satisfactory training and supervised field experience before entering for the BASIS Crop Protection Certificate examination. This will usually include at least 18 months on-site / in-field experience. If in doubt as to this requirement, please contact the BASIS office.

### **General Notes**

It is essential that candidates acquire sufficient practical experience with the full range of topics applicable to the examination. Examiners must be assured that for the candidate to pass, he/she is capable of giving clear, concise and accurate advice and recommendations.

Theoretical knowledge without an understanding of its practical application would not be sufficient for a candidate to pass the exam.

Candidates who do not reach the overall pass mark required but who achieve a pass level in the simulated site exercise can carry that pass forward for an exam re-sit and so do not need to re-take that part of the examination. Candidates who fail part of the skill area will need to re-sit all skill area exams (as listed on page 40) apart from the identification test and simulated site exercise which can be carried forward (as above) if already passed. Candidates who fail the site exercise but pass all other elements will **only** need to re-sit this paper. This may be done at a pre-arranged exam instance anywhere in the UK provided there are adequate facilities and by agreement with the provider of the exam. This should reduce the need for excessive travel for candidates and allow them to attend a local exam venue.

### **Typical examination structure and procedure**

Please see at the back of this booklet, the layout normally adopted for this exam (Appendix I)

## YOUR QUESTIONS ANSWERED

- **DO I NEED TO TAKE A TRAINING COURSE IN ORDER TO SIT THE BASIS CROP PROTECTION CERTIFICATE EXAMINATION?**

Not necessarily, if you feel you already have enough technical knowledge and on-site / in-field experience. However, candidates should ensure that they have been trained satisfactorily, either in-house or externally, and have had sufficient supervised on-the-job experience prior to the examination, so that they are capable of giving clear, concise recommendations for the use of pesticide products.

- **WHAT FORM DO THE TRAINING COURSES TAKE?**

That will depend on the trainer / training provider, the chosen course and on previous experience to date. Courses can run for up to a total of 17 days. This will be split up into blocks of a week at a time or perhaps day release.

- **WHERE ARE TRAINING COURSES HELD?**

Details of trainers and locality can be obtained on Page 45.

- **HOW DO I APPLY TO TAKE A TRAINING COURSE?**

Contact the Training Provider of your choice and complete a training course application form or contact BASIS for advice.

- **WHEN AND WHERE ARE EXAMINATIONS HELD?**

Examinations are held when there are sufficient numbers to make them viable, usually following a training course and at a venue chosen by the training provider and agreed with BASIS.

- **WHAT DOES THE EXAMINATION ENTAIL?**

Details can be found in this booklet on pages 5 - 7.

- **IF I FAIL THE EXAMINATION, CAN I RE-SIT?**

Yes you can re-sit the exam; however, BASIS examinations are accredited on the Higher Education qualifications framework. One consequence of this is that we need to ensure procedures are in place to improve candidates' chances of success in subsequent examinations following a previous failure.

Where candidates have been examined unsuccessfully on two occasions, they will be required to retrain before attempting the exam for a third time.

Candidates and trainers will be required to complete a form to confirm that they have retrained, particularly covering areas that were identified as 'areas of weakness' at previous exams.

The form should be presented to the exam Chairman at the third exam attempt. Failure to confirm that retraining has taken place will result in a refusal to conduct the viva examination and subsequent 'no result' for the exam.

Please help us to help you by asking your training provider to evaluate your training needs and undertake the training required to ensure you can pass the exam.

Those candidates wishing to go forward for the 'BASIS Diploma and later the HAUC Diploma in Agronomy with Environmental Management should be aware that only four attempts at any examination will be permitted if that course is included as a qualification module for the diploma(s).

- **IF I APPLY FOR A JOB WITHIN THE PESTICIDES INDUSTRY DO I HAVE TO HOLD THE BASIS CROP PROTECTION CERTIFICATE OR HAVE EXEMPTION FROM IT?**

If you have not previously been employed by a distributor or contractor giving advice you have up to three years from entering the industry in which to become qualified. During that time you must work under the supervision of a certificate holder. Anyone involved in the sale, advice or supply of pesticides must hold the BASIS Crop Protection Certificate of Competence.

- **WHAT IS MEANT BY "WORKING UNDER SUPERVISION"?**

All good trading companies will require their new personnel to have an initial period of training, accompanied by a qualified member of their staff. There will come a time when the company will have to allow the representative to work on his/her own. Until such time that he/she becomes qualified, all advice given and sales made by the new representative must be monitored by a qualified person who should countersign their sales or advice documentation. Certainly in the early stages of a person's development and training, they should be within "sight and sound" of the training person, to ensure any advice, recommendations or instructions they give are correct.

- **HOW DO I APPLY TO SIT THE BASIS CROP PROTECTION CERTIFICATE EXAMINATION?**

Contact the BASIS office or complete an examination application form and return it to the Training Provider of your choice. You will be notified when an examination is to take place. (Those attending a BASIS Crop Protection Certificate training course will automatically be entered for the examination and so do not need to apply separately).

It is important that candidates are booked onto the exam as early as possible to allow BASIS to make the necessary exam arrangements. **Re-sit candidates must be notified to BASIS at least 4 weeks prior to the exam; otherwise it may not be possible to make the required arrangements in time.**

- **WHEN WILL I RECEIVE MY EXAMINATION RESULTS?**

We aim to issue results and feedback within 4 weeks from the date of examination. **Please note results will not be given over the telephone.**

# **BASIS CERTIFICATE IN CROP PROTECTION (AMENITY HORTICULTURE) OBJECTIVE SYLLABUS**

The syllabus has been designed to allow individual sections of training to be treated as separate units for training purposes. This will permit the choice of the most appropriate time of year in which to undertake such training. Some indication of the time required to cover each section of the syllabus is given in the contents page of this booklet. Those concerned with the delivery of training will thus be able to assess the depth of tuition for each subject and establish their training programme accordingly, taking account of the prior experience and knowledge of the course candidates.

## **CORE MODULES**

### **MODULE 1 - IMPACT OF AMENITY ACTIVITIES ON BIODIVERSITY, THE ENVIRONMENT AND WATER**

#### **1.1 Competence**

Ensure a knowledge and understanding of the concept and importance of biodiversity, environmental and water considerations which impact on the variety of amenity situations.

#### **1.2 Performance Criteria**

Candidates must be able to:

- define biodiversity in the context of Amenity Horticulture.
- understand the importance of biodiversity in the Amenity Environment.
- describe the role of key organisations involved in developing and promoting biodiversity.
- demonstrate knowledge of Biodiversity Action Plan (BAP) species related to the Amenity Horticulture sector.
- identify and describe ways in which conservation measures can assist biodiversity and the environment in Amenity Horticulture situations.
- describe the impacts of amenity activities which directly or indirectly affect the quality of water.

### 1.3 Essential Knowledge & Skills

Candidates must have the ability to:

- understand how site factors affect management decisions, with regard to the creation of a biodiversity action plan.
- define and minimise the effects of pesticides used in Amenity Horticulture.
- understand and act upon the requirements needed to encourage biodiversity.
- define and plan activities in any site locality, that will improve the biodiversity and the environment of that area.
- understand how amenity horticulture activities can be organised to avoid water pollution.
- understand how pesticide use in amenity horticulture should be conducted to avoid water contamination.

## **CORE MODULE**

### **MODULE 2 - RECOGNITION, BIOLOGY AND CONTROL OF WEEDS**

#### **2.1 Competence**

Develop an ability for accurate weed identification and the evaluation of safe and appropriate control measures.

#### **2.2 Performance Criteria**

Candidates must be able to:

- provide a basis for accurate weed identification
- develop an understanding of weed biology.
- provide an appreciation of the reasons for weed control, and their evaluation.
- provide a knowledge and understanding of methods available for weed prevention and control.
- develop a knowledge of major weed problems in amenity horticulture and develop an understanding of the choice and integration of suitable and economical control treatments.

#### **2.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- understand the causes of weed infestation.
- describe the main features of seed morphology and physiology that contribute to the dissemination and successful establishment of weed species.
- understand the dynamics of the weed seed population of soils and especially of the factors that encourage a reduction in seed numbers.
- understand the importance of vegetative regeneration of weeds in relation to cultivation, planting practices and weed control.

- interpret the seasonal and locational appearance of major weed species.
- recognise major weeds according to region.
- examine and assess weed problems in particular situations and maintain records of infestation.
- understand the benefits, methods and economics of different control options.
- select and justify appropriate control measures.
- recognise which herbicides will reduce weed populations and which combinations of herbicides can be legally and safely applied as tank mixes for specific problems.
- calculate suitable dose rates and justify the timing and methods of application for specific weed problems.
- predict the weed control strategies for particular situations which are necessary to reduce weed populations progressively.
- explain the interaction between site practices, soil type and weed incidence in particular situations.
- identify and name botanical features used for recognition of seeds, seedlings and mature plants.
- recognise different stages of plant growth.
- use an identification key successfully.
- recognise major weed species associated with particular soil types and amenity areas.
- describe the nature of weed competition and predict the likely outcome of the level of weed infestation.
- understand the significance of particular weed and volunteer plant species as hosts of pests and pathogens.
- recognise poisonous and harmful plants.
- explain the possible problems caused by particular weed species eg Japanese Knotweed.

- demonstrate an awareness of legislation relating to noxious weeds and weed seeds.
- understand the significance of weeds as potential fire, security or surface stability risks.
- explain the significance of particular site practices to the prevention, reduction and control of weed problems.
- recognise the competitive abilities of cultivated plants in various locations.
- classify the main types of chemical control measures and major groups of chemical materials.
- justify the choice of methods for the control of particular types of weed species and weed infestations.

## **CORE MODULE**

### **MODULE 3 - RECOGNITION, BIOLOGY AND CONTROL OF PESTS**

#### **3.1 Competence**

- Develop the ability to recognise pests and pest damage, to anticipate and prevent pest problems and to choose safe and appropriate control measures.

#### **3.2 Performance Criteria**

Candidates will be able to:

- develop a knowledge of feeding methods and behaviour which will provide a basis for diagnosis of the causes of pest damage symptoms.
- develop an awareness of the factors that determine the occurrence of pest damage and its importance.
- develop a knowledge and understanding of the methods available to prevent or control pest damage.
- develop the ability to recognise the important pests of specific plants, to identify, anticipate and prevent the damage each may cause, and to select the most appropriate control measures or combination of measures for specific circumstances, taking into account threshold levels for control.
- develop a knowledge of the characteristics and life cycles of those groups of animals that include important pest species.

#### **3.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- describe the structures used in feeding by eelworms, slugs, mites, insects, birds and rodents.
- explain the method of feeding of pest species from these groups.

- relate pest feeding to typical damage symptoms to roots, shoots, leaves, flowers, seeds and fruit.
- relate pest feeding to the transmission of plant pathogens.
- diagnose the causes of plant damage by identifying symptoms and/or pests.
- relate pest incidence to pest mobility, host specificity, weather and climate.
- apply knowledge of the factors affecting pest incidence to the monitoring of pest species and the prediction and prevention of pest damage.
- identify legislation designed to minimise the importation, dissemination and multiplication of plant pests.
- select cultural practices that may be used to minimise pest damage.
- identify plant varieties resistant to pests and the circumstances in which they should be used.
- identify biological agents that may be used in commercial practice to control pests and appropriate circumstances for their use.
- choose appropriate chemical control measures for particular pest problems.
- explain the advantages of integrating pest control methods by reference to specific examples.
- recognise eelworms, slugs, millipedes, mites and the important orders of insects.
- describe typical life cycles of eelworms.
- describe typical life cycles of mites, millipedes and insects.
- describe the cycle of generations of aphids.
- identify the special features of bird and mammal biology that contribute to pest problems caused by these animals.
- identify the major pests or pest damage symptoms, as appropriate, according to region.

- evaluate the risk of damage or describe the steps that must be taken to get such risks evaluated by specialist services.
- recommend and justify specific control measures from the options available, with an understanding of the economic implications of each.
- evaluate the most appropriate and cost effective control measures, including Integrated Pest Management (IPM), cultural, rotational, timing and other options.
- calculate appropriate dose rates for particular pesticides, and justify the timing and methods of application for specific pest problems.
- design pest control strategies for specific situations.

## **CORE MODULE**

### **MODULE 4 - RECOGNITION, BIOLOGY AND CONTROL OF DISEASES**

#### **4.1 Competence**

Develop an ability for the recognition of disease symptoms, the evaluation of disease problems and choice of appropriate control measures.

#### **4.2 Performance Criteria**

Candidates will be able to:

- provide a basis for accurate disease identification.
- explain the significance of disease-damage and provide a knowledge of the methods of assessment and evaluation.
- provide an understanding of the biology of major causal agents of disease.
- demonstrate an understanding of methods available for disease control, reduction and prevention and the role of threshold levels for control.
- provide knowledge of the major diseases of specific plants and an understanding of the choice and integration of suitable control measures.

#### **4.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- recognise the nature of major types of plant damage.
- interpret the significance of types of damage to plant growth.
- carry out disease assessments on plants.
- assess and record disease damage to plants.
- describe significant characteristics of virus, mycoplasma, bacterial and fungal pathogens and the effects they each have on plants.

- relate conditions influencing the survival, build-up and dispersal of pathogens to disease development.
- recognise environmental influences on infection and the development of disease within plants.
- use a knowledge of the factors influencing infection and disease development to enable forecasting and the prediction of disease risks.
- develop an understanding of major legislation relating to plant disease.
- recognise the significance of particular cultural practices to disease control.
- identify varieties of plants resistant to diseases.
- understand the various options of physical and chemical control measures and know the economic implications of each.
- classify the main types of chemical control measures, and major groups of chemicals.
- justify the choice of methods for the control of particular types of diseases.
- recognise major diseases in particular plants.
- evaluate disease risks to particular plants.
- select and justify appropriate control measures.
- calculate appropriate dose rates for particular fungicides, and justify the timing and methods of application for specific disease problems.
- understand and explain disease control strategies.
- recognise the development of symptoms at different stages of plant growth.
- recognise major varietal effects, and the influence of growing and storage condition, on symptom expression.
- interpret the distribution pattern of symptom development.

## **CORE MODULE**

### **MODULE 5 - COMPOSITION, ACTIVITY AND PERSISTENCE OF PESTICIDES**

#### **5.1 Competence**

Develop an understanding of the nature of pesticides and biological control agents.

#### **5.2 Performance Criteria**

Candidates will be able to:

- ensure the correct use of technical terms.
- understand the composition of pesticides.
- develop an awareness of the various control agents, their benefits and drawbacks.
- explain the biological activity of important groups of chemicals.
- provide an understanding of factors influencing persistence.
- provide an understanding of the development of tolerance to certain pesticides by target organisms.
- understand the implications of pesticide use relative to ground, surface and drinking water.
- understand the importance of Environmental Information Sheets (EIS)

#### **5.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- explain the use of chemical names, British Standards Institute (BSI) approved common names and proprietary names for pesticides.
- classify pesticides into functional, chemical and mode of action categories.
- accurately define terms used in relation to chemicals and plant treatments.

- identify formulations in the form of emulsifiable concentrates, wettable powders, suspension concentrates, dusts, granules, fumigant materials, combustible materials, seed dressings, aerosols and encapsulated materials.
- understand the basic functions of additives, such as surfactants, dilutants and dispersing, dispensing and emulsifying agents.
- explain the significance and limitations of different formulations in relation to application, activity, selectivity, toxicology, persistence and environmental effects.
- explain the importance of compliance with manufacturers' instructions for correct doses and the application of particular formulations.
- describe the characteristics of various biological control agents and understand their benefits and limitations.
- outline the mode of action of major groups of herbicides, nematocides, molluscicides, acaricides, insecticides, vertebrate poisons, fungicides and plant growth regulators.
- develop a knowledge of certain properties of materials which influence their biological activity, selectivity and human toxicity.
- describe the likely influence of weather factors on the effectiveness and behaviour of particular materials.
- describe the influences of soil type on the behaviour of pesticide materials.
- identify types and significant properties of soils.
- explain the importance of recognising the correct stages of development of plants, weeds, pests and diseases, in relation to plant safety and maximising the effectiveness of treatments.
- explain the importance of preventing pesticides entering water and the consequences of accidental contamination.
- recognise the susceptibility of particular varieties of plants to phytotoxic damage by certain materials.
- explain the limitations of particular materials.
- explain likely causes of plant damage by chemical treatments.

- understand the importance of storage conditions on the activity of particular materials.
- explain the possible reasons for the ineffectiveness of chemical treatments in particular situations and seasons.
- give justification for the selection of certain materials for particular situations.
- apply knowledge of factors influencing the behaviour of particular pesticides to their possible persistence in the environment, in plant produce and in water.
- recognise the significance of approved and recommended uses of particular materials in relation to persistence.
- develop a knowledge of resistance in target organisms to particular pesticides.
- outline how resistance in target organisms develops.
- explain measures for limiting the development of resistance.
- recommend alternative materials in situations where resistance exists, or is likely to develop.
- detail alternative strategies of control to overcome problems of resistance, and prevent its possible development in target organisms.
- explain how to perform an environmental risk assessment using the product Environmental Information Sheets (EIS).

## CORE MODULE

### MODULE 6 - APPLICATION OF PESTICIDES

#### 6.1 Competence

To develop an understanding of the equipment and techniques for applying pesticides.

#### 6.2 Performance Criteria

Candidates will be able to:

- develop an awareness of formulations in relation to application treatments.
- provide a knowledge of the types, and use, of equipment for spray application.
- provide a knowledge of correct sprayer use and maintenance and accurate application procedures, including calibration.
- develop an appreciation of potential hazards associated with application and ensure safe practices for the operator, public, environment and water.

#### 6.3 Essential Knowledge & Skills

Candidates must have the ability to:

- demonstrate a knowledge of the various types of formulations of pesticide materials.
- recognise the significance of formulation in relation to the choice of application equipment, and method of delivery of the material.
- describe the practical limits of the accuracy of placement of particular materials (eg granules).
- give details of types of application treatment.
- describe vehicles utilised for the application of pesticides.
- recognise the nature of plant surfaces and their influence on the degree of retention and distribution of chemicals.
- explain the importance of factors such as droplet size, wetters and oil additives to the retention and distribution of chemicals on plant surfaces.

- demonstrate a knowledge of the various types of spray application equipment, including specialised seed treatment, granule and dust applicators and fumigation equipment.
- demonstrate a knowledge of the hydraulic circuitry of sprayers, including ON/OFF systems, agitators, anti-drip devices, filters, positions and types of valves, filling systems and types of pumps.
- identify and describe types of nozzles and where each should be used.
- describe equipment for ultra-low volume, and controlled-droplet application.
- understand the interaction of factors such as pressure, nozzle size and type and operator / tractor speed on droplet size and coverage.
- identify major faults.
- describe, calibrate and maintain tractor spray equipment.
- describe, calibrate and maintain hand-operated spraying equipment.
- describe, calibrate and maintain granule pesticide applicators.
- outline procedures for ensuring correct spray output.
- explain the significance of bout-marking devices, and boom height and stability for accurate spray placement.
- describe methods of improving the accuracy of spray application.
- recognise symptoms in plants of incorrect spray application.
- identify potential hazards in maintaining application equipment and the benefits of the National Sprayer Testing Scheme (NSTS).
- describe safe procedures for the handling of materials and their preparation for application.
- describe procedures for ensuring the safety of operators during the application of pesticides.
- recognise safe procedures for protecting the general public, the environment and water from potential hazards during the application of pesticides.
- understand the qualifications and training required for operators prior to any application.
- understand the needs and types of continual training development required for operators and the benefits of the National Register of Sprayer Operators Scheme (NRoSO).

## **CORE MODULE**

### **MODULE 7 - SAFE USE, HANDLING, TRANSPORT AND STORAGE OF PESTICIDES**

#### **7.1 Competence**

Develop an appreciation of the hazards of pesticides, to encourage safety consciousness and an awareness of legal obligations.

#### **7.2 Performance Criteria**

Candidates will be able to:

- understand the process and requirements of pesticide registration and approval.
- ensure a thorough understanding of the human hazards presented by pesticides and the circumstances in which poisoning may occur.
- develop an awareness of the harmful effects of pesticides on the environment and encourage a willingness to minimise such effects.
- develop an understanding of possible harmful effects of pesticides on plants through direct toxicity, the destruction of pest enemies or the development of pesticide resistance.
- develop an understanding of the benefits of pesticide use and how they help society.
- understand the obligations and requirements of pesticide legislation.
- encourage an awareness of the importance of safe practices and a knowledge of the procedures and precautions that should be adopted.

#### **7.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- identify the routes of entry of pesticides into the human body.

- define the terms oral toxicity, dermal toxicity and LD50.
- identify, from a list of common crop protection chemicals, those which are most toxic to man.
- identify the application procedures and formulations likely to give rise to the greatest contamination of operatives clothing, skin and respiratory tract.
- recognise the influence of previous exposure on the toxicity of anti-cholinesterase compounds.
- recognise the hazards associated with uncontrolled access to pesticide operations, materials and stores, especially by children and domestic animals.
- give an explanation of the hazards associated with the transfer of pesticides into incorrectly labelled containers.
- explain the possible route of pesticide residues to the public.
- identify the factors that affect the level of pesticide residues in plants.
- define the terms food chain, food web and ecosystem.
- identify important wildlife refuges in amenity horticulture.
- explain the possible effects of pesticides on soil animals and micro-organisms.
- show how pesticides may affect the population density of wild plants, animals and birds.
- explain how pesticides may cause pollution of water and damage to aquatic organisms.
- describe the circumstances in which insect pollinators may be killed by pesticides.
- illustrate, with examples, the toxicity of pesticides to plant species and varieties.
- explain how plants may be damaged by approved products through incorrect application, dose rates and pesticide mixtures.
- show how pesticides may come in contact with plants not deliberately treated with them.
- explain the circumstances in which pesticide use can lead to increased pest incidence.
- account for the development of resistance to herbicides, insecticides and fungicides.

- identify the major obligations of employers, employees and the self employed under:
  - a) the Control of Substances Hazardous to Health Regulations (COSHH)
  - b) the Health and Safety at Work Act, 1974
  - c) Poisons Act 1972 - Poisons List Order 1982 and the Poison Rules 1982
  - d) Water Resources Act 1991
  - e) the Control of Pollution Act, 1974
  - f) Ground Water Regulations 1998
  - g) Weeds Act 1959
  - h) Water Framework Directive
  
- identify the major provisions and obligations of:
  - a) the Food and Environment Protection Act 1985
  - b) Control of Pesticides (Amendment) Regulations 1997
  - c) Plant Protection Products Directive
  - d) Plant Protection Products Regulations
  - e) BASIS (Registration) Limited
  - f) the Local Environment Risk Assessment for Pesticides (LERAP) arrangements
  - g) Plant Protection Products (Basic Conditions) Regulations 1997
  
- explain the importance of appropriate choice of chemicals, mixtures, formulations and methods of application in reducing risks to people, the environment and water.
- describe the precautions to be taken during the transport of pesticides.
- describe safe specifications for a pesticide store.
- emphasise the importance of limiting access to pesticide stores, and operations.
- relate the regulations for protective clothing requirement to choice of chemical formulation, method of application and the environment in which application will take place.
- demonstrate the safety precautions taken during the mixing of pesticides and filling application equipment to avoid water and / or environmental impact.
- describe working practices that will minimise contamination of operatives and also minimise drift.
- describe safe methods of disposal of unwanted pesticides, protective clothing and empty containers.

- describe decontamination procedures for clothing and skin.
- understand the relationship between the interval before allowing access of people and animals to treated areas, and the risks associated with chemicals of varying persistence and toxicity.
- describe the steps that should be taken if human poisoning is suspected.
- understand the legal obligations concerning the environment and water.
- explain the balance of understanding needed to support the benefits of pesticide use; how society gains; how efficiencies are increased; how safety is improved; how sites are enhanced and how food quantity and quality are increased by their use.

# SKILL AREA MODULE

## MODULE 8 - HARD SURFACE AREAS

### 8.1 Competence

Develop an understanding of the maintenance of hard surface areas through the control of weeds, pests and diseases, and with knowledge of the economic and environmental implications of each option available.

### 8.2 Performance Criteria

Candidates will be able to:

- understand the risk and problems caused by weeds in hard surface areas.
- understand which weeds are particular problems; how they cause problems; how they proliferate and how best to control them. Particular emphasis should be given in tuition to:
  - a) Japanese Knotweed
  - b) Ragwort
  - c) Giant Hogweed
  - d) Brambles, Buddleja etc.
- develop knowledge of which type of hard surface area requires which type of treatment.
- ensure a thorough understanding of the options for controlling weeds in hard surface areas, with due consideration for safety, efficiency, economics and the environment.

### 8.3 Essential Knowledge & Skills

Candidates must have the ability to:

- understand how best practice should be implemented for the different hard surface weed control options, having regard for operators, the public, site workers, wildlife and water safety.
- explain the high priority of ensuring water quality is maintained and understand which weed control practices must be avoided to ensure water is not polluted by weed control activities.

- describe which pesticide options are permitted for use on hard surface areas; how they work; what doses should be used and where they may be used.
- explain the importance of timing of the different weed control options and how that affects standards of control.
- understand the different types of application equipment used for hard surface weed control, with particular regard to types of sprayer, their method of operation and how to calibrate and maintain equipment in good condition.
- understand the various support schemes available to assist good working practices and how they are implemented eg National Sprayer Testing Scheme (NSTS) and the National Register of Sprayer Operators (NRoSO).
- identify different weed or pest or disease situations in hard surface amenity horticulture and recommend how best they should be dealt with, having regard for the biology of the problem; the safety of operators and the public; safety to water and the environment, and the economics of control.
- understand how certain pests can be problematic in hard surface areas or nearby, and how they can be controlled eg rabbits, moles and squirrels.
- understand the implications of actions taken to control weeds (and/or pests) in hard surface areas, with regard to biodiversity and the environment, and how best they can be at least maintained and where possible enhanced.

## SKILL AREA MODULE

### MODULE 9 - AMENITY GRASS & SPORTS TURF AREAS

#### 9.1 Competence

Develop an understanding of the establishment and maintenance of amenity grass and sports turf areas, with emphasis on the control of weeds, pests and diseases and with knowledge of the economic and environmental implications of each aspect.

#### 9.2 Performance Criteria

Candidates will be able to:

- understand the risks and problems caused in amenity grass and sports turf areas by:
  - a) weeds
  - b) pests
  - c) diseases
- understand how amenity grass and sports turf areas are established, cared for and maintained.
- understand which particular problems require control, in each area (amenity grass and sports turf areas). These include but are not exclusive to:
  - a) Golf courses
  - b) Bowling greens
  - c) Parks
  - d) Garden areas
  - e) Sports pitches
  - f) Grassed areas around industrial areas
  - g) Other amenity grass areas
- ensure a thorough understanding of the options for controlling weeds, pests and diseases, with due consideration for safety, efficiency, economics and the environment.

### 9.3 Essential Knowledge and Skills

Candidates must have the ability to:

- explain how best practice should be implemented for the different weed, pest and disease control options, having regard for operators, the public, site workers, wildlife and water safety.
- describe the high priority of ensuring water quality is maintained and to know which weed, pest and disease control practices must be avoided to ensure water is not polluted by those activities.
- understand and explain the most economic and most effective methods of amenity grass and sports turf area establishment, whilst recognising best practice standards for the processes involved and the equipment needed.
- explain which pesticide options are permitted for use on amenity grass and sports turf areas; how they work; what doses should be used and where.
- describe the importance of timing of the different weed, pest and disease control options and how that affects the standards of control.
- identify different weed, pest or disease situations in amenity grass and sports turf areas and recommend how best they should be dealt with, having regard for the biology of the problem; the safety of operators and the public; safety to water and the environment, and the economics of control.
- understand the different types of application equipment used for weed, pest and disease control on amenity grass and sports turf areas, with particular regard for types of sprayer, their method of working and how to calibrate and maintain equipment in good condition.
- understand the various support schemes available to assist good working practices and how they are implemented eg National Sprayer Testing Scheme (NSTS) and the National Register of Sprayer Operators (NRoSO).
- understand and explain the implications of actions taken to control weeds, pests and diseases in amenity grass and sports turf areas with regard to biodiversity and the environment, and how best they can be at least maintained and where possible enhanced.
- explain the various equipment and methods of grass maintenance to different standards of requirement eg a bowling green versus a golf fairway.

## **SKILL AREA MODULE**

### **MODULE 10 - SHRUBS, BORDERS & CONTAINER PLANTS**

#### **SECTION A - PLANT GROWTH AND DEVELOPMENT AND PLANT PROPAGATION SYSTEMS**

##### **A10.1 Competence**

Develop an understanding of the factors which contribute to the production of high quality plant material and a knowledge of growing systems relevant to Britain.

##### **A10.2 Performance Criteria**

Candidates must be able to:

- produce a knowledge of the factors which contribute to the production of high quality plants for the amenity industry.
- develop an understanding of the production of the main plant groups for amenity horticulture,

##### **A 10.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- appreciate and explain the process of plant growth and development.
- recognise major factors affecting plant growth.
- assess plant quality.
- describe inputs for maximising yield and quality in amenity plants.
- recognise the significance of particular plant groups.
- recognise the main plant groups and their characteristics.
- understand the significance of soil types and weather problems in the choice of plant.
- identify suitable times for sowing and propagating particular plants.
- understand the different types of cultivation and cultural practices.
- recognise the main types of cultivation and maintenance equipment.
- understand the different systems of plant production and management.

## **SKILL AREA MODULE**

### **MODULE 10 - SHRUBS, BORDERS & CONTAINER PLANTS**

#### **SECTION B - RECOGNITION AND CAUSES OF PLANT DISORDERS**

##### **B10.1 Competence**

Develop an ability to discriminate between plant damage directly induced by environmental factors, damage caused by pests and pathogens and possible methods which may be adopted for prevention or control, with due regard for environmental care.

##### **B10.2 Performance Criteria**

Candidates must be able to:

- provide a basis for the description and possible identification of damage due to disorders.
- provide a basis for damage evaluation.
- outline methods available for preventing and limiting particular plant disorders, and the appropriate selection of corrective treatments, whilst implementing good practice standards of operator and public safety and care for water and the environment.
- provide a knowledge of the susceptibility of particular plants to certain disorders, and an understanding of procedures suitable for their treatment.

##### **B10.3 Essential Knowledge & Skills**

Candidates must have the ability to:

- describe symptoms of unsatisfactory growth.
- recognise plant damage induced by adverse physical soil conditions.
- recognise plant damage caused by unsuitable pH status, nutrient imbalance, nutrient deficiencies and the misuse of crop protection materials.
- recognise plant damage caused by adverse soil moisture status.

- recognise plant damage induced by extreme weather factors.
- develop an awareness of types of plant damage caused by pollutants from the atmosphere, soil and irrigation water.
- compare and contrast environmental damage with that which may be caused by pests and pathogens of plants.
- be aware of the procedures necessary for the notification and confirmation of possible causes by specialists.
- relate plant growth and development to equivalent stages in unaffected plants.
- estimate the extent of current and future plant damage.
- explain the possible causes and cures of particular problems.
- identify alternative plants and varieties which are less susceptible to particular disorders.
- identify practices and materials for the rectification of pH and nutrient problems.
- identify procedures for optimising soil moisture status.
- identify cultural practices that might alleviate particular disorders.
- examine a variety of plants for symptoms of damage and poor growth.
- identify specific instances where damage and poor growth is not attributable to pests and disease, or weed competition.
- examine particular soils for evidence of compaction, inadequate drainage or moisture stress.
- interpret the results of chemical analysis of particular plants and soil samples.
- relate types of topography and plant structure to damage likely from wind, hail, frost and snow.
- relate specific symptoms to past or present conditions of the physical and chemical nature of soil, irrigation of water or adverse atmospheric factors.
- make decisions on measures to correct abnormal plant growth and prevent its recurrence, recognising the need for economic actions and safety to operators, the public / customers, water and the environment.

## SAMPLE MULTI-CHOICE QUESTIONS FOR THE FSTS EXAMINATION

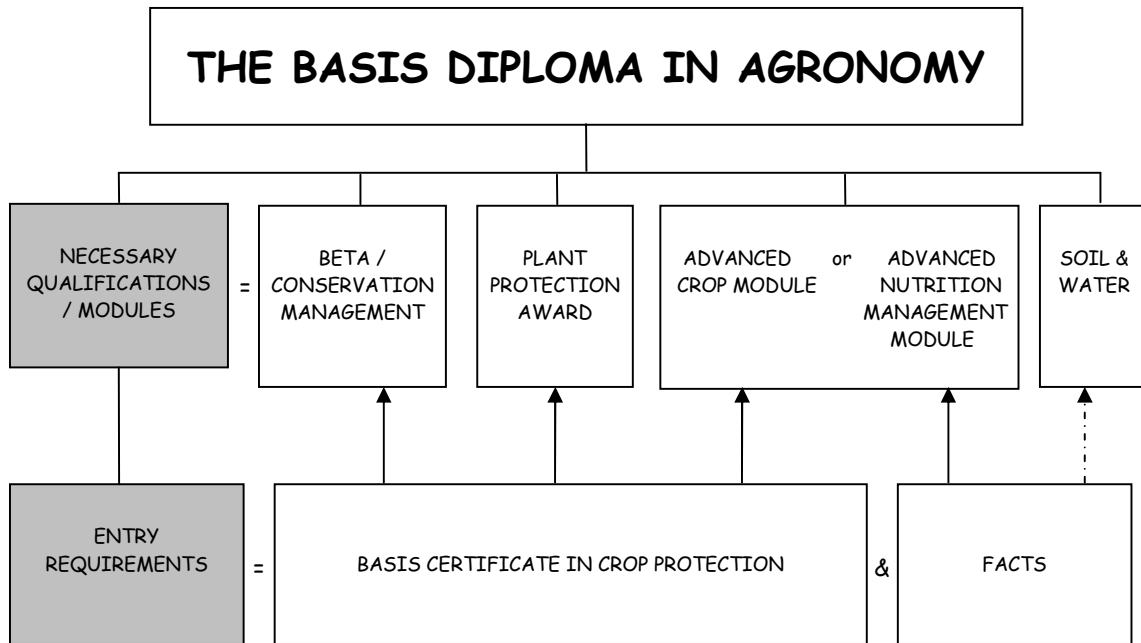
The following sample questions give a guideline of the type and presentation of questions candidates will have to answer when taking the FSTS examination. They are purely intended as a guide and consist of superseded questions from actual past papers. The multi-choice question paper consists of 70 questions and covers all the areas listed in the attached syllabus.

1. In which of the following soils will water retention be lowest?
  - a) loamy sands
  - b) silty soils
  - c) peaty soils
  - d) clay loams
  
2. What is the correct procedure to adopt when spraying upwind of a residential area?
  - a) reduce the pressure
  - b) use hollow cone jets
  - c) spray cross wind
  - d) leave part of the area unsprayed
  
3. From which two points is boom height measured?
  - a) boom to ground
  - b) nozzle tip to ground
  - c) boom to target
  - d) nozzle tip to target
  
4. Work place exposure limits (WEL) are referenced to exposure by
  - a) skin contact
  - b) ingestion
  - c) sensitisation
  - d) inhalation
  
5. Which one of the following formulations is most likely to reduce the handling hazards of a toxic pesticide?
  - a) an emulsifiable concentrate
  - b) a granule
  - c) a dust
  - d) a suspension concentrate

6. A hydraulic nozzle functions by
- a) forcing liquid under pressure through a small orifice on the nozzle
  - b) high pressure oil pushing the liquid out of a nozzle
  - c) injecting the liquid into an air-stream
  - d) allowing gravity to push liquid from a nozzle
7. Which one of the fungi below often requires two hosts (alternate) to complete its life cycle?
- a) mildews
  - b) rusts
  - c) botrytis
  - d) honey fungus
8. Plants are grouped in a botanical family because they
- a) have similar coloured flowers
  - b) have similar floral structure
  - c) grow in similar soil conditions
  - d) have similar leaf morphology
9. A contact insecticide is commonly used on several separate occasions when whitefly control is being attempted because
- a) adults need several doses to kill them
  - b) eggs and immature stages are difficult to kill
  - c) this will avoid resistance appearing
  - d) the level of insecticide has to be gradually built up in the plant
10. In a crop of chrysanthemums in April, small buff to white blisters appear on the undersides of the leaves. What should you suspect?
- a) grey mould
  - b) ray blight
  - c) powdery mildew
  - d) white rust

## THE BASIS DIPLOMA IN AGRONOMY

The breadth and scope of knowledge needed for crop protection sales and advice grows every year. New products, new techniques and the way that crop protection fits with other farm and crop management activities all add to the skills needed by those involved in sales and advice for Crop Protection. To cover the range of factors involved, the new BASIS Diploma in Agronomy, as set out below, gives a comprehensive training and qualification framework for those involved in on-farm advice and sales.



### TOPICS COVERED

**ADVANCED CROP MODULE / ADVANCED NUTRITION MANAGEMENT MODULE** Weed, Pest & Disease Control, Crop Protection Programmes, Marketing, Food Industries, Crop Assurance, Nutrient Management

**BETA / CONSERVATION MANAGEMENT** Environment, Biodiversity, EIS's, CPMP's, ICM, Climate Change

**PLANT PROTECTION AWARD (PPA)** Systems & Society, Formulation, Mode of Action, Application, Health & Safety

**SOIL & WATER** Cultivation Types and Properties, Cropping Systems, Water Quality, Drainage, Pollution/Waste, Plant Nutrition

For the PPA and the Advanced Crop Module the prior achievement (by examination, exemption or validated certificate) of the BASIS Certificate in Crop Protection is an entry requirement. For the Advanced Nutrient Management Module the prior achievement of the FACTS qualification is required.

The FACTS qualification is a requirement for successful completion of the BASIS Diploma and strongly recommended for those wishing to train for the Soil and Water Management certificate.

Prior qualification of the BASIS Certificate in Crop Protection (or exemption or validated certificate) or the Crop Protection Management and / or POWER Certificates are required for the BETA examination. In some circumstances, it may be possible for other types of prior qualification to be taken into account for BETA examination eligibility. BASIS Approved Trainers must be assured that in such cases, the prospective candidate is capable of assimilating the knowledge imparted during the BETA course tuition and also capable of passing the BETA examination.

It is **strongly** recommended that candidates should have had at least two years experience of on-farm practical agronomy before attempting any of the modules which contribute towards the BASIS Diploma in Agronomy, but in particular before taking the Plant Protection Award.

BASIS CPD points are available for training and certification in all modules of the BASIS Diploma.

The accreditation process for our qualifications has enabled BASIS to demonstrate a high standard of training and certification for our BASIS courses. The BASIS Diploma comprises a number of modules and 6 are required to complete the qualification.

A further consequence of accreditation by HAUC and the Higher Education qualifications framework has been the development by HAUC of a Graduate Diploma in Agronomy with Environmental Management.

BASIS courses have all been awarded a number of credits based on the time spent on the course (Targeted Learning Hours). This is a recognised formula including face to face tuition time, research, reading and experiential learning. The credits are awarded at a level that reflects the intensity / difficulty of the learning materials, for example A-level equivalent or 1st, 2nd or final year honours degree etc.

The qualifying BASIS courses with credits and levels awarded are shown below:

<b>FACTS</b>	
<b>Credit Value</b>	15
<b>Level</b>	Intermediate

<b>SOIL &amp; WATER</b>	
<b>Credit Value</b>	15
<b>Level</b>	Honours

<b>BASIS CROP PROTECTION</b>	
<b>Credit Value</b>	30
<b>Level</b>	Honours

<b>BASIS PLANT PROTECTION AWARD</b>	
<b>Credit Value</b>	15
<b>Level</b>	Honours

<b>BASIS ADVANCED MODULES / ADVANCED NUTRIENT MANAGEMENT MODULE</b>	
<b>Credit Value</b>	15
<b>Level</b>	Honours

<b>BETA / CONSERVATION MANAGEMENT</b>	
<b>Credit Value</b>	15
<b>Level</b>	Intermediate

Intermediate = 2<sup>nd</sup> or 3<sup>rd</sup> year of university degree qualification.

Honours level - final year university degree.

Eg. FACTS 15 credits = 150 hours notional teaching time

The six modules required for the BASIS Diploma add up to 105 credits. In order to qualify for the HAUC Graduate Diploma in Agronomy with Environmental Management, candidates will need to accumulate 120 credits (ie one extra 15 credit module in addition to the BASIS Diploma). This can be any of the Advanced Crop Modules or the new Nutrient Management Planning qualification, available from September 2009.

Further details of the BASIS Diploma in Agronomy can be obtained from the BASIS office or by e-mail to [sue@basis-reg.co.uk](mailto:sue@basis-reg.co.uk) or [steph@basis-reg.co.uk](mailto:steph@basis-reg.co.uk) or [amanda@basis-reg.co.uk](mailto:amanda@basis-reg.co.uk)

**Appendix I**  
**Amenity Horticulture**  
**Examination Procedure and Structure**

The programme for the examination set out below is not "cast in stone" but it is the format that has been used on a number of occasions and it has proved successful.

**Day One**

Morning                      May well be used by the tutor as further teaching time or as a refresher / revision period

L U N C H

Afternoon                      Examination starts

Time Allowed -                      30 multi-choice questions relating to the 7 core modules  
45 minutes

45 minutes                      30 multi-choice questions relating to the selected skill area module  
(see important note below)

10 minutes                      10 minute break

30 minutes                      Identification test - 30 samples

60 minutes                      The Simulated Site Exercise can be answered either as bullet points or sentences (maximum of 1000 words) and cover skill area, industry related practical issues presented in a job related scenario. Parts of the core modules (eg. Health & Safety) may also be included

**Total**  
**3 hours 10 minutes**

If trainers wish they can set the identification test before the multi-choice but the format above has been found helpful because the candidates have 1 ½ hours written (60 multi-choice) then a break and movement involved in the identification test, then a further 1 hour of written exam with the simulated site exercise, ie. the identification test gives a break between the two purely written parts of the exam.

**Day Two**                      **Usually starting at 9am**

3 vivas per candidate

Viva 1                              Site Station Viva - testing aspects of Storage, Health & Safety, Regulation, Application, Best Spraying Practice, Product Approval, Legislation  
15 - 20 minutes

Viva 2                              Site Station Viva - testing aspects relating to the pre-selected skill area (notified at least one month **before** the exam date). The examiner covers practical issues, recommendations, product and method selection, treatment options, operational risks, environmental aspects  
15 - 20 minutes

Viva 3                              Panel Viva with 2 examiners (BASIS Chairman and Industry Skill Area expert) covering any area of the syllabus, relating to the core modules and skill area selected  
15 - 20 minutes

The panel will be looking for knowledge and the ability to communicate and give good sound advice. The aim is to help candidates to achieve a pass standard, if, for example, their performance has not been up to the required level in earlier parts of the examination.

The 7 different elements of the examination are collated, marked, verified and results communicated back to the individual candidate (or employer if required), usually in 10 - 15 working days following the date of the exam.

**Appendix II**

**Examination Procedure to achieve an additional skill area qualification**

Prior to taking an examination for a 2<sup>nd</sup> skill area qualification, the candidate will have taken and passed the BASIS Certificate in Crop Protection - Amenity Horticulture Examination. This will have included the 7 core modules and one skill area module.

To achieve a 2<sup>nd</sup> (or 3<sup>rd</sup>) skill area qualification may involve the candidate in additional training, depending on the level of experience and knowledge the candidate already possesses.

Once a candidate has successfully achieved the BASIS Certificate in Crop Protection - Amenity Horticulture, then they may add a further skill area qualification by taking the exam as below. There is no requirement to take the 7 core module elements again.

### **Second (or third) skill area exam**

45 minutes	30 multi-choice questions relating to the skill area selected
20 minutes	20 item identification test relating to the skill area selected. It is suggested that 10 items relate to weeds, pests and diseases (60% of which should be fresh) 5 items relating to application and 5 items relating to environmental and other relevant core module issues
60 minutes	Simulated Site Exercise covering the skill area selected
15-20 minutes	Skill area site viva covering a range from all topics relevant to the skill area chosen (see viva 2 in appendix I)
15-20 minutes	Panel viva with 2 BASIS examiners covering topics related to the skill area chosen

**Total**  
**2 hours 35 minutes**  
**- 2 hours 45**  
**minutes**

The 4 component parts of the exam will be pulled together, marked, verified and candidates notified within 10 - 15 working days after the exam date.

NB. Candidates wishing to sit a second (or third) skill area exam will be asked to do so on a day when a full Amenity FSTS Exam covering their pre-selected skill area is being covered. The exception to this would be if 7 to 12 candidates wish to sit the same pre-selected skill area at the same time (having already gained the Amenity FSTS Certificate in one skill area). In which case an examination session can be organised especially for them.

## BASIS APPROVED TRAINERS

The following Colleges, Trainers and Training Providers are successfully running Amenity Horticulture examinations and have been accepted as BASIS Approved Trainers for Amenity Horticulture.

### **Scottish Agricultural College**

Kings Buildings  
West Mains Road  
EDINBURGH  
EH9 3JG

Contact: Moyra Farquhar  
Tel: 0131 5354090  
Email: [moyra.farquhar@sac.ac.uk](mailto:moyra.farquhar@sac.ac.uk)  
Web: [www.sac.ac.uk](http://www.sac.ac.uk)

### **STRI**

St Ives Estate  
BINGLEY  
West Yorkshire  
BD16 1AU

Contact / Trainer: Ruth Mann  
Tel: 01274 518913  
Email: [ruth.mann@stri.co.uk](mailto:ruth.mann@stri.co.uk)  
Web: [www.stri.co.uk](http://www.stri.co.uk)

### **Warwickshire College**

Pershore College  
Avonbank  
PERSHORE  
Worcestershire  
WR10 3JP

Contact: Jean Baldwin  
Tel: 01386 551224  
Email: [jbaldwin2@warkscol.ac.uk](mailto:jbaldwin2@warkscol.ac.uk)  
Web: [www.warkscol.ac.uk/pershore](http://www.warkscol.ac.uk/pershore)

The following Colleges, Trainers and Training Organisations have expressed an interest in running some, or all, of the training modules and / or the Amenity Horticulture examination.

### **Chelmsford & West Essex Training Group**

2 Salisbury Cottages  
Maldon Road  
Hatfield Peverel  
CHELMSFORD  
Essex, CM3 2HS

Contact: Debbie Wedge  
Tel: 01245 381193  
Email: [debbiewedge@aol.com](mailto:debbiewedge@aol.com)

### **DJL Agronomics**

Highgrove House  
Cassbrook Drive  
Fulstow  
LOUTH, LN11 0XR

Contact / Trainer: Dr Jim Lewis  
Tel: 01507 363698  
Email: [jim.lewis@fsmail.net](mailto:jim.lewis@fsmail.net)  
Web: [www.djlaq.co.uk](http://www.djlaq.co.uk)

**James Christian-Ilett**

8 Painshall Close

Welton

LINCOLN

Lincolnshire

LN2 3NU

Contact: James Christian-Ilett

Tel: 01673 860925

Email: [christian.ilett@btinternet.com](mailto:christian.ilett@btinternet.com)

**Jon Allbutt Associates**

Seaton, Goatsfield Road

Tatsfield

WESTERHAM

Kent

TN16 2BU

Contact / Trainer: Jon Allbutt

Tel: 01959 575575

Email: [jon@jonallbutt.co.uk](mailto:jon@jonallbutt.co.uk)

Web: [www.jonallbutt.co.uk](http://www.jonallbutt.co.uk)