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BIODIVERSITY AND ENVIRONMENTAL TRAINING FOR ADVISERS

SYLLABUS AND INFORMATION

British agriculture has consistently demonstrated its' willingness to change and to adopt new technology. This open approach to such a fundamental and traditional industry is principally responsible for the plentiful supplies of safe, wholesome food we all enjoy.

Through change and technology, yields of crops have increased year on year and have at least kept pace with the growth in population.

However, such significant progress does not come without some related issues. Modern farming techniques not only produce superb crops but also exert pressures on the natural balance of the environment and its biodiversity.

The beauty of the British countryside is no accident. It is achieved by the care and stewardship of farmers as the custodians of their land. However, there is more to be done. The VI (Voluntary Initiative), agreed with UK government, has a number of targets to improve the awareness, knowledge and skills of those involved on farm to increase biodiversity and environmental management.

The introduction of CPMP's (Crop Protection Management Plans) and NRoSO (National Register of Spray Operators) both aim to increase awareness and to improve the management skills of farmers and spray operators respectively.

The BETA (Biodiversity and Environmental Training for Advisers) training syllabus aims to progress the knowledge and skills of on-farm advisers in those important aspects related to Crop Protection use.

The syllabus is a result of co-operation amongst a number of organisations as it has developed, with involvement from FWAG, HAUC, AIC, The Game & Wildlife Conservation Trust and others. Their assistance is appreciated and it has enabled the Crop Protection Association and BASIS® (Registration) Ltd. to co-ordinate the four modules of this syllabus together. The BETA qualification is part of the Voluntary Initiative (VI) package of measures which were presented to, and agreed by, government through a representative group of UK industry bodies, as a practical alternative to the introduction of a pesticide tax.

The BETA modular training programme aims to promote the protection and enhancement of biodiversity, in the context of best practice of crop protection use on farm and the sustainability of profitable farming. The combination of Integrated Crop Management with Crop Protection Management plans and biodiversity training, puts together a wider package which leads to more holistic Integrated Farm Management support.

This syllabus, and the structure of the BETA qualification, was initiated in 2003 to recognise three principal objectives and requirements.

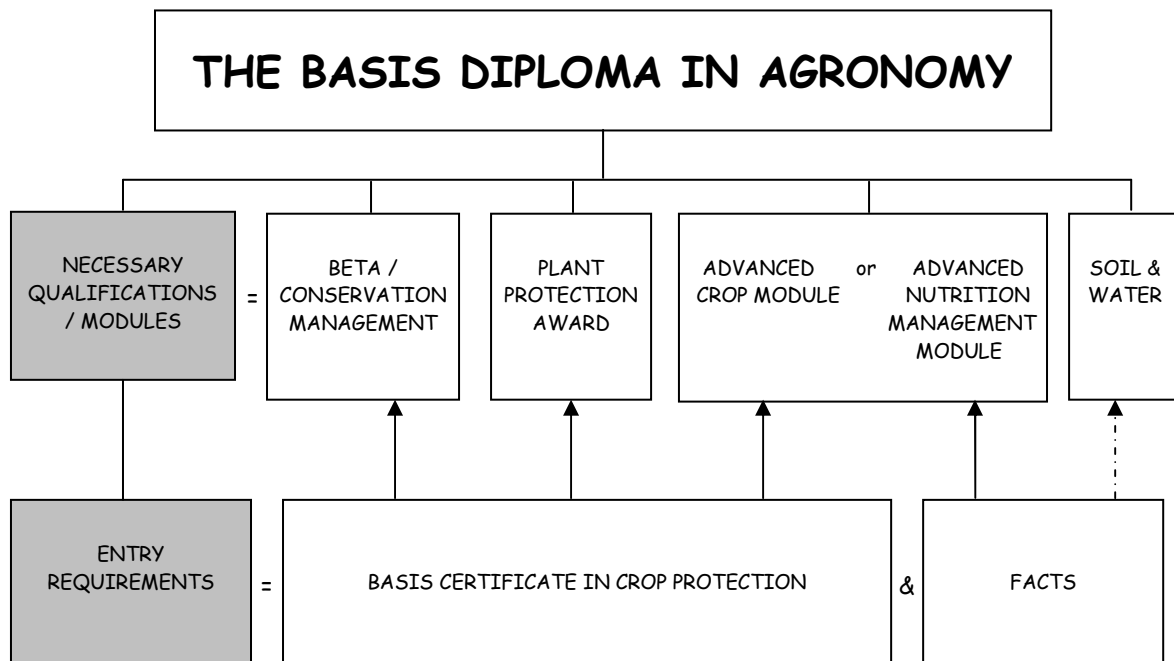
- The VI (Voluntary Initiative), launched to try to avoid a Pesticide Tax, has the improvement of the environment and biodiversity on farm as a key part of its objectives. Those who achieve the BETA qualification will ensure a greater awareness and input to these aspects of agrochemical and fertiliser use.
- The Mid Term Review of the Common Agricultural Policy aims to decouple subsidy payment to farmers from the production of food. Farmers will in part be rewarded for attention to countryside stewardship issues including local environment and biodiversity. Farmers will need help and guidance to make the improvements targeted and those agronomists with the BETA qualification will be better placed to give such advice and guidance.
- The increase in knowledge and skills that BETA will bring to established agronomists will provide a new step in their career and a platform for a "new" advice/service area of safe agricultural pesticide and fertiliser use.

This syllabus has been updated in 2005 to incorporate further information on

- The Entry Level Stewardship Scheme of the Defra Environmental Stewardship Programme
- Single Payment Scheme - Cross Compliance - Guidance for the Management of Habitats and Landscape Features
- Interim outcomes of the SAFFIE Project.

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.

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:

FACTS	
Credit Value	15
Level	Intermediate

SOIL & WATER	
Credit Value	15
Level	Honours

BASIS CROP PROTECTION	
Credit Value	30
Level	Honours

BASIS PLANT PROTECTION AWARD	
Credit Value	15
Level	Honours

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

BETA / CONSERVATION MANAGEMENT	
Credit Value	15
Level	Intermediate

Intermediate = 2nd or 3rd 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 or steph@basis-reg.co.uk or amanda@basis-reg.co.uk

PRE-EXAMINATION REQUIREMENTS

- 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 to be capable of passing the BETA examination.
- Normally candidates will receive formal training before sitting the BETA examination. The suggested time scale for training is as follows:

Module 1	- Biodiversity and Environmental Training	1 day
Module 2	- Environmental Protection	$\frac{1}{2}$ day
Module 3	- IFM Training: (add $\frac{1}{2}$ day if BASIS/LEAF IFM exam to be taken)	1 day
Module 4	- Climate Change	$\frac{1}{2}$ day

- It is possible for candidates to sit the BETA examination without attending formal training days, provided they have attained the required level of knowledge.
- Training can be provided from many sources: Agricultural Colleges / Universities, Independent Trainers, FWAG and In-house Trainers.
- If candidates already hold the BASIS/LEAF IFM qualification then the total training time can be reduced to 2 days, plus $\frac{1}{2}$ day for the BETA examination.
- If BETA training is undertaken in a block then it will normally cover 3 days plus $\frac{1}{2}$ day for the examination.
- It is recommended that unless a candidate has achieved the separate BASIS/LEAF IFM certificate then they should receive training in all four modules before taking the BETA examination.

EXAMINATION PROCEDURE

The BETA examination can be held at any suitable location with prior agreement, after consultation and making an advanced booking with BASIS.

An independent examiner appointed by BASIS will adjudicate at, and examine all candidates for, each examination.

A maximum of 20 candidates is preferred for the BETA exam in any one examination session with a minimum of 7 candidates per examination session. Smaller numbers can be examined but BASIS will charge for **at least** the minimum number for any particular examination. Examinations must be booked in advance, preferably with at least 6 weeks notice, to ensure availability of an independent BASIS examiner. Cancellation of a booked examination within one to 4 working weeks **will** incur a £50.00 fee. This will be increased to £250.00 if an exam is cancelled the week before an exam. Exams cancelled on the day will be subject to the full exam fee for all candidates.

The BETA examination will be $2\frac{1}{2}$ hours duration and usually held during the morning. Examination papers will be marked as soon as possible and results made available usually within 20 working days of the exam.

The BETA examination format will be:

- 20 multiple choice questions
- 3 fixed short answer questions
- Completion of questions relating to Environmental Protection including the CPMP and Environmental Information Sheets.
- Completion of questions relating to Climate Change

The exam marks

- | | |
|---|---------------------------------|
| • 20 multiple choice questions | 30 marks ($1\frac{1}{2}$ each) |
| • 3 fixed short answer questions | 30 marks (10 each) |
| • 10 Environmental Protection questions | 20 marks (2 each) |
| • 10 Climate Change questions | 20 marks (2 each) |

BETA VIVA

Those candidates who have previously failed a BETA written exam by only a small margin (up to 10 marks) will be eligible to re-sit the BETA exam as a viva. The idea is to cover those candidates who know the syllabus content but who have difficulty expressing themselves in writing. We need at least ten candidates and a maximum of twenty for a BETA viva Exam. Each candidate will undertake an individual viva exam for approximately 20 - 30 minutes. A collective venue will need to be selected and appropriate dates will be arranged. The cost will be £110 per person. Only those candidates who have taken the BETA written exam and failed, will be eligible.

OBJECTIVE SYLLABUS

Candidates wishing to attain the BETA certificate should be aware of, and conversant with, the following 4 modules and the detail of their content.

It is recognised that a small number of points of the performance criteria are duplicated within this syllabus in individual modules so that they can be taught separately, but if taught together then each topic should clearly only be covered once.

MODULE 1 - BIODIVERSITY AND AGRI- ENVIRONMENT SCHEMES

1.1 Competence

Give reasoned arguments as to why biodiversity should be conserved and enhanced in the context of the use of crop protection products within farming systems. The concerns of society in conjunction with the needs of farmland wildlife need to be expressed.

1.2 Performance Criteria

Candidates must be able to:

- define the term 'biodiversity' and understand its history in terms of both international conventions and national agreements eg. Rio Summit / Johannesburg Sustainability Summit
- recognise why conservation of biodiversity is of concern to society.
- explain what a Biodiversity Action Plan (BAP) is and how this relates to specific Species Action Plan, (SAP) and Habitat Action Plans (HAP).
- provide examples of BAP species associated with arable farming ecosystems.
- specify which species have declined and describe the likely causes, including habitat loss and changes to agricultural practices.
- describe the direct and indirect effects of crop protection products.
- specify what measures can be developed to help arable farmland biodiversity such as: field margins, beetle banks, conservation headlands, hedgerow and waterway management. Show an awareness of the economic implications of biodiversity protection and enhancement.

- explain how the Entry Level Stewardship Scheme operates as part of the DEFRA Environmental Stewardship Programme.
- describe the published outcomes of the SAFFIE Project.
- show understanding of Cross Compliance Guidelines and Good Agricultural and Environmental Conditions as they relate to maintenance of habitats and landscape features.
- explain how ensuring best crop protection practice can protect and enhance wildlife habitat areas.

1.3 Essential Knowledge and Skills

i) Candidates must have a knowledge and understanding of the:

- requirements to encourage and maintain biodiversity.
- nature of crop protection chemical impacts.
- species for which declines in numbers are of major concern.
- relationship between biodiversity, integrated crop management and sustainable farming including the SAFFIE project.
- different types of agri-environment schemes, across the UK including the Single Farm Payment Scheme and Environmental Stewardship Programmes.
- conservation measures which can be funded as part of the schemes.
- management of whole farms in a way which promotes wildlife and environmental protection.
- Campaign for the Farmed Environment (CFE)
- Farm Land Bird Package (as developed by RSPB, GWCT, NE, FWAG & NFU) and its role in supporting and enhancing ELS and the CFE

ii) Candidates will exercise the following skills:

- interpret information relating to biodiversity protection when offering guidance on the use of crop protection products.

- explain the indirect risks to farmland wildlife from crop protection use and how promoting best practice can help to prevent this including, for example, the outcomes of the SAFFIE project.
- explain simple, practical measures that can be adopted to protect and enhance farmland biodiversity eg. grey partridge, brown hare, lapwing, skylark, corn bunting, etc.
- explain the procedures and requirements of DEFRA biodiversity and environmental schemes on farm.

1.4 Activities

The following example activities are suggested to reinforce training and to provide a context for assessment.

- Explain how good agricultural practice can influence farmland wildlife.
- Prepare public presentations on best practice for pesticide use to protect and enhance biodiversity on farmland
- Explain the benefits for sustainable farming of measures to promote biodiversity, with reference to agri-environment schemes.
- Read relevant DEFRA publications to learn how the new agri-environment schemes work.

MODULE 2 ENVIRONMENTAL PROTECTION

2 (a) Plan to protect – Assessing the Environmental Hazards of using Pesticides on Farm and subsequent Risk Management

2 (a) .1 Competence

Demonstrate how the use of a Crop Protection Management Plan on farm can ensure that the use of crop protection is considered in the context of avoiding water pollution and promoting and protecting farmland biodiversity. Successful completion of the LEAF audit and/or EMA also covers this competence area. (Section 3.8.2 of Revised Code of Practice)

2 (a) .2 Performance Criteria

Candidates must be able to:

- explain what the Crop Protection Management Plan is seeking to achieve.
- be competent to advise on how the CPMP should be completed on farm.
- recommend how best practice can be achieved on farms.
- demonstrate awareness of specially designated areas eg SSSI's and other areas where pesticides use is restricted.

2 (a) .3 Essential Knowledge and Skills

i) Candidates will have knowledge and understanding of:

- variety choice and associated pest and disease problems.
- the BASIS Crop Protection Certificate, BASIS Professional Register and use of formal agronomy advice.
- relevant Codes of Practice.
- thresholds and the need to treat crops, including adoption of cultural control methods.

- choice of crop protection products and associated record keeping methods.
- crop rotation and non-chemical husbandry practices.
- best practice in application of pesticides including use of granular applicators / sprayer equipment / nozzles to prevent drift and/or exposure and cleaning/emptying sprayers.
- safety practices required for the storage and transport of pesticides, proper disposal procedures for empty pesticide containers to prevent pollution of water sources, according to the revised Code of Practice and latest advice.
- the need to protect on-farm ground and surface water features, awareness of water catchment and sensitive areas on farm and downstream.
- how to prevent diffuse pollution and point source water contamination (including product stewardship eg. herbicide decision trees and best practice guidance for molluscicides)
- the need to protect groundwater and Groundwater Protection Zones (GPZs).
- LERAP restrictions on pesticide use near water courses.
- sources of available environmental and conservation advice.
- the H2OK campaign, its aims and content
- the Water Framework directive, its UK implementation and the ensuing issues for crop protection, agriculture and the environment
- developments in pesticide legislation and the likely consequences (e.g. revision of the Authorisation Directive and the introduction of the Sustainable Use Directive)
- how to reduce exposure of non-target organisms to pesticides including vertebrate control products and molluscicides.
- practical measures which can be taken on farm to encourage biodiversity, both within fields and in non-cropped areas.

ii) Candidates will exercise the following skills:

- recognise farm areas requiring special consideration to ensure wildlife and water is protected.
- assess the use of pesticides in a farm situation.

- develop a crop protection strategy which identifies environmental hazards and provides appropriate risk management.
- identify the hazards and appropriate risk management for bystanders and users of neighbouring land.

2 (a) .4 Activities

The following example activities are recommended to reinforce training and provide a context for assessment.

- Given an example farm, be able to recommend best practice techniques which would protect water and biodiversity when using crop protection in line with the CPMP.
- Identify how the farmer can make adjustments to the current farm practices to avoid water pollution and protect farmland wildlife.

2 (b) Environmental Risk Assessment - Assessing the Environmental Hazards and Managing Environmental Risks using specific Plant Protection Products in Specific Locations / Situations

2 (b) .1 Competence

Ensure by reference to its Environmental Information Sheet that a crop protection product is used with due care and diligence with regard to the environment. Candidates will understand the issues and lessons learned from pesticide use which have, in part, given rise to the preparation of Environmental Information Sheets. Section 3.1.2 of the revised Code of Practice).

2 (b) .2 Performance Criteria

Candidates must be able to:

- understand how choice of product is influenced by label requirements
- understand the environmental risk management highlighted by the Environmental Information Sheet.
- identify the risks to non-target species and sensitive areas which need to be taken into account when applying the product.
- provide clear advice to the spray operator on the precautions required.

- identify environmentally sensitive areas and suitable protection options.

2 (b) .3 Essential Knowledge and Skills

i) Candidates will have a knowledge and understanding of:

- the different risk categories specified on the EIS: Wildlife, Mammals and Birds; Bees; Non Target Insects and Other Arthropods; Aquatic Life; Soil and Groundwater, Earthworms and Soil Micro-organisms; Non Target Plants.
- the relevance of the EIS to the approved label phrases specified on the appropriate crop protection products.
- the principles of risk management which apply to crop protection.
- the campaign to prevent "Illegal poisoning", (CAIP and WIIS)

ii) Candidates will exercise the following skills:

- identify the risks associated with the product to water and wildlife.
- plan and present recommendations on the care (necessary precautions) required when using the product.

2 (b) .4 Activities

The following example activities are recommended to reinforce training and provide a context for assessment.

- Given several product Environmental Information Sheets and a context for use, identify the environmental hazards and the risk management required
- Using a known example farm, describe the recommendations which are needed, to put risk management into practice, along waterways, field margins and in general, for an example product, based on its Environmental Information Sheet.

MODULE 3 - INTEGRATED FARM MANAGEMENT (IFM)

3.1 Competence

Demonstrate how the implementation of Integrated Farm Management (IFM) practices, combine the ability to produce high quality food with sensitivity for the environment, whilst maintaining a financially profitable business for the farmer.

3.2 Performance Criteria

Candidates must be able to:

- understand the breadth and depth of knowledge required to implement IFM practices in an on-farm situation.
- discuss with farmers the ways in which CPMP's, EIS's and the aim to enhance biodiversity, can be balanced into an Integrated Farm Management system for each individual farm.
- give advice as part of the on-farm agronomy which combines best practice in crop protection, with the aims and objectives of BETA.

3.3 Essential Knowledge and Skills

The candidate will have knowledge and understanding of:

i) Site, Crop Rotation and Varietal Choice

Candidates will demonstrate an ability to:

- consider the significance of the various factors influencing choice of rotation including the effect of site features and the end use for which the crop is intended.
- appreciate the environmental impact of contrasting rotations.
- assess the effect of varietal choice and seed quality on achieving the aim of IFM.

ii) Soil Management and Crop Nutrition

Candidates will demonstrate an ability to:

- identify and assess soil properties in relation to agricultural management and for the prevention of soil erosion.
- appreciate the value and use of technology in planned cultivation systems
- be aware of the factors to be taken into account for nutrient management plans for a farm situation
- understand the importance of taking advice from a FACTS Qualified Adviser
- assess the environmental impact of management decisions and the policy adjustments required by legislation and Codes of Good Practice
- appreciate the value of water resources and irrigation management
- understand the impact of fertiliser and manure application on conservation areas.
- appreciate the relationship between ground-water and nitrates/NVZ's and the protection of water quality.
- understand the relationship between agricultural sources of phosphate and eutrophication.

iii) Crop Protection

Candidates will demonstrate an ability to:

- understand the importance and value of an integrated approach to crop protection (IPM).
- appreciate the importance of crop monitoring in evaluating crop protection problems and in the design of integrated control strategies.
- understand the value of existing information technology and expert systems used in crop protection decision making.
- understand the potential significance of developments in biotechnology.
- specify the conditions and procedures required for safe, accurate and economic application.

- be familiar with techniques for the safe disposal of chemicals and their containers.
- appreciate the requirements of legislation, Codes of Conduct and safe working practices.
- identify alternative methods of pest and disease control other than chemicals.
- identify the actions that can be taken to manage pesticide resistance.

iv) Wildlife and Landscape Management

Candidates will demonstrate an ability to:

- appreciate the inter-relationships between farming enterprises in a land use system (eg. integration of livestock and crop production).
- understand the role of advisory organisations involved with conservation issues eg. FWAG.
- assess the value of cropped and uncropped areas of the farm for wildlife .
- consider the criteria involved in selecting specially protected areas
- understand how to evaluate the farm's environmental features and the environmental management techniques that are required.

v) Auditing and Management

Candidates will demonstrate an ability to:

- appreciate the importance of detailed records, planning and good management in a successful IFM system.
- identify long and short term farm business objectives.
- familiarise staff and contractors with farm policies and objectives.
- consider methods of evaluating current farm practice and of reviewing performance with targets and timescales for improvement.
- identify key management functions to achieve best practice in line with safety and legal requirements.

vi) Quality and Safety within the Food Chain

Candidates will demonstrate an ability to:

- understand the issues of key importance to food quality and safety within the food chain.
- demonstrate awareness of the food safety legislation
eg. Food Safety Act
 Food Safety Regulations
- identify the implications of the main food safety legislation for integrated farm management.
eg. Crop Assurance Schemes
- consider the key systems and standards for managing food quality and safety
eg. HACCP (Hazard Analysis Critical Control Point)
- discuss the philosophy and principles underlying these systems and standards.

vii) Energy, Farm Waste and Pollution Management

Candidates will demonstrate an ability to:

- appreciate the range and scale of farm waste production, the likely re-use and recycling opportunities and potential pollution risks.
- understand the practical, environmental and financial implications of such wastes.
- be conversant with the appropriate legislation and Codes of Good Agricultural Practice.
- understand the need to improve the efficiency of energy use.
- identify waste minimisation and resource management techniques.
- initiate a specific farm waste and energy management plan based on the information provided.

MODULE 4 - CLIMATE CHANGE

4.1 Competence

Understand that climate change may be one of the most daunting challenges facing us all. The United Nations have stated; "It has profound implications for virtually every aspect of human well-being, from jobs and health, to growth and security."

The subject is vast but key elements, as they relate to UK farming, are covered by this module and need to be understood.

4.2 Performance Criteria

Candidates must be able to:

- demonstrate knowledge of how the climate is already changing and predicted to change further
- understand how climate change may affect the world in general and the UK in particular

i). show understanding of what is meant by the terms:

- *Climate Change, Greenhouse Effect and Global Warming*
 - Scientific theory and evidence
 - The different greenhouse gasses and their significance
 - The contribution to the production of those gasses by UK agriculture

ii) discuss with farmers what the effects of climate change may be on their farms and the actions that can be taken to minimise the negative effects

iii) give advice which is consistent with measures required to mitigate climate change, and which embraces any opportunities which climate change may present.

4.3 Essential Knowledge and Skills

The candidate will have knowledge and understanding of:

- i). the agreements, structure and legislation that are in place to address climate change at international and UK level including:
- Kyoto treaty
 - United Nations Framework Convention on Climate Change

- EU Emissions Trading Scheme
- UK Climate Change Strategic Framework
- Climate change in the UK Programme 2006
- Climate Change Bill - targets and other key provisions; Committee on Climate Change; Carbon Reduction Commitment
- Part of the solution - Climate Change, Agriculture and Land Management
- The suspected contributory causes to climate change

ii). the possible threats to UK Agriculture including:

Arable:

- Water availability
- Yields
- Resource Management
- Pests and Diseases
- Crop Marketing
- Extreme Events

Livestock:

- Feed & Forage
- Housing
- Water
- Diseases, Pests and Weeds
- Fertility
- Energy
- Management

iii). farmers and advisers can help to minimise the rate of climate change by finding proactive ways to introduce a positive improvement in the carbon balance on farm by attention to the following points:

- Address energy efficiency, carbon monitoring and greenhouse gas emission monitoring (e.g. CLA CALM Calculator) and reducing emissions of CO₂ and other greenhouse gasses.
- Target the relevant requirements of end markets and assurance schemes (e.g. LEAF Marque)
- Consider nitrogen inputs and the contribution to greenhouse gas emission
- Ensure correct storage, handling and application of manures, slurries etc.
- Consider:
 - anaerobic digestion
 - opportunities for carbon sequestration?
 - tree planting, habitat creation, environmental improvements aimed at carbon balance improvements
 - developing biofuel markets
 - other opportunities for renewable energy production

iv) the opportunities for Farmers from climate change including

Arable:

- Yields
- Markets
- Crop Range

Livestock:

- Energy & Inputs
- Productivity
- Housing needs
- Breeds
- Market opportunities

v). the likely effects of climate change on farm biodiversity and how it can be managed?

- Species range
- Changes in lifecycles and the consequences for habitats, competition, food webs and predator relationships
- Loss and creation of habitats
- Impact of changes in farming practice in response to climate change and consequent legislative and market requirements.

BASIS APPROVED TRAINERS

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

Alasdair Lowe Limited

Grange Barn
Birds Lane
Epwell
BANBURY
Oxfordshire
OX15 6LQ

Contact: Alasdair Lowe

Tel: 01295 788006

Email: alowe@alasdairlowe.co.uk

Chelmsford & West Essex Training Group

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

Contact / Trainer: Debbie Wedge

Tel: 01245 381193

Email: debbiewedge@aol.com

Hampshire Training Providers Ltd

c/o Hampshire Grain Limited
Overton Road
Micheldever Station
WINCHESTER
Hampshire
SO21 3AN

Contact: Jenny Lewis

Tel: 01962 774430

Email: jenny@hampshire-training.co.uk

James Christian-Ilett

8 Painshall Close
Welton
LINCOLN
LN2 3NU

Contact / Trainer: James Christian-Ilett

Tel: 01673 860925

Email: christian.ilett@btinternet.com

Landbased Training

c/o Garth Training
Garth Cottage
Wintringham
MALTON
North Yorkshire
YO17 8HX

Contact: Linda Bower

Tel: 01944 758379

Email: linda@landbased-training.com

Web: www.landbased-training.com

Mid Kent Training
Kempes Corner Farm
Boughton Aluph
ASHFORD
Kent
TN25 4EN

Contact: Dianne Qusted
Tel: 01233 813688
Email: info@mkt.uk.net

The Game & Wildlife Conservation Trust:
The Allerton Project
Loddington House
Loddington
LEICESTER
LE7 9XE

Contact / Trainer: Dr Alastair Leake
Tel: 01572 717220
Email: info@allertontrust.org.uk
Web: www.allertontrust.org.uk

The Training Association (East)
57 Low Road
Grimston
KINGS LYNN
Norfolk
PE32 1AF

Contact: Jayne Parsey
Tel: 01485 600225
Email: jayne@traineast.co.uk
Web: www.traineast.co.uk

The Training Association (pdfw)
Grays Farm
Peterborough Road
Crowland
PETERBOROUGH, PE6 0AD

Contact: Stella Parker
Tel: 01733 210346
Email: stella.parker@graysfarm.org.uk
Web: www.traineast.co.uk

University of Lincoln
Riseholme Park
LINCOLN
Lincolnshire
LN2 2LG

Contact / Trainer: Dr Simon Goodger
Tel: 01522 895295
Email: sgoodger@lincoln.ac.uk

Web: http://www.lincoln.ac.uk/riseholmecollege/courses/sc_beta.htm

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

Bishop Burton College

Bishop Burton
BEVERLEY
East Yorkshire
HU17 8QG

Contact: Annie Lightfoot

Tel: 01964 553044

Email:

annabel.lightfoot@bishopb-college.ac.uk

Web: www.bishopb-college.ac.uk

Boston & North Wash Training Group

Kiln House
West Fen
Stickney, BOSTON
Lincolnshire
PE22 8BH

Contact: Margaret Dawson

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Cambridge Area Training Ltd

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Dorset Training Ltd

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Duchy College

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North Cheshire Training Group

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The Vale Training Group
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Many companies may wish to arrange their own in-house training, however those who do not have suitable examination facilities should contact colleges / trainers listed in this booklet. All examinations must be booked in advance with BASIS to ensure sufficient time is available to appoint an independent examiner.