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BASIS®
PLANT PROTECTION AWARD

The UK Crop Protection industry continues to be progressive and innovative with additional knowledge and skills rapidly becoming part of everyday business life. The pace of development and increasing wish to coordinate various aspects of learning and qualification have given rise to the changes that are now embodied in this new syllabus of the Plant Protection Award.

Originally, the examination known as the BAA Certificate in Crop Protection formed the baseline for crop protection product manufacturer field staff. In 1997 the Certificate was merged with the Pesticide Technology Module of the Advanced BASIS Certificate to create the Plant Protection Award. (Note: For BAA/CPA members the exam either as the original BAA certificate and more recently as the Plant Protection Award has fulfilled the CPA's Part III training requirement for manufacturers staff who regularly give advice).

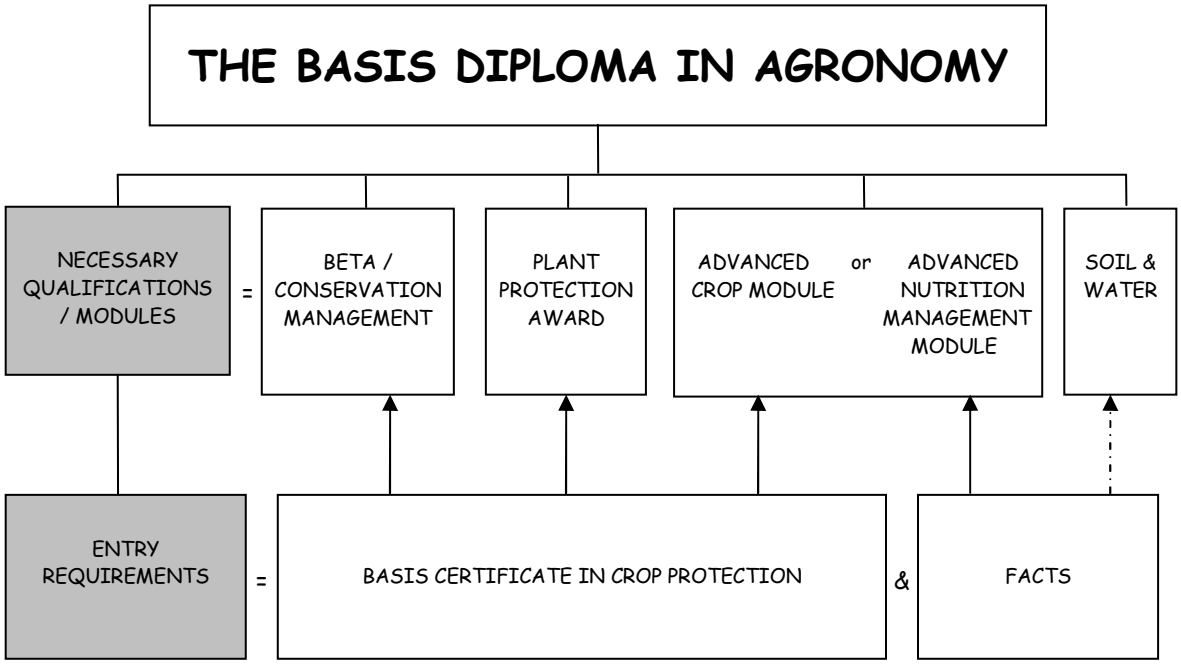
The organisation and administration of the Award has recently transferred to BASIS. The standards and principles of the Award are being maintained under BASIS stewardship and the Award together with the BETA qualification (see later) will continue to meet the CPA's Part III training requirement. However, since the Award was introduced there is now greater emphasis on Integrated Crop Management (ICM) and on matters such as Biodiversity, the Environment, Soil and Water. These elements are part of UK government strategy seeking improvement in the management of all these areas of agriculture. In consequence, they are now deserving separate qualification and these modules are underway.

The new BETA qualification was introduced in 2003 and ICM is a part of that qualification. A new soil and water management certificate will be introduced in 2004. Hence the Plant Protection Award is now positioned alongside those two modules (BETA and Soil and Water) as part of the new BASIS Diploma in Agronomy.

The primary content of the Plant Protection Award is concentrated on:-
Plant Protection and its implementation in agricultural systems and society; Formulations; Modes of Action; Application and Health and Safety. In essence, it covers Plant Protection Technology and it is therefore a most important part of the future industry knowledge and skill requirement.

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. The Plant Protection Award covers the Technology of Crop Protection at a more advanced level than the BASIS Certificate in Crop Protection for Field Sales and Technical Staff, which itself is a pre-requisite for candidates wishing to achieve the Plant Protection Award (PPA). The PPA is the qualification required by CPA of its members' staff who regularly give advice; it is also the next step for any agronomist who wishes to demonstrate an advanced level of knowledge of Crop Protection Technology.



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 (by examination, exemption or validated certificate) 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:

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 training department on 01335 340857 or 01335 340854 or by email to training.courses@basis-reg.co.uk

PLANT PROTECTION AWARD
EXAMINATION GUIDELINES

EXAMINATION STRUCTURE

09.45 am Candidates gather at prior notified examination venue
- enrol
- coffee
- meet Independent BASIS appointed chairman

10.00 am Written examination begins and comprises
- 20 multi-choice questions
- 6 out of 10 short answer questions

12.30 pm Written examination ends

Lunch

1.45 pm Oral examinations begin
- each candidate to attend 2 separate viva panels

Examiners will be drawn from a panel of experienced and competent representatives nominated by AIC, AICC, BASIS and CPA.

PANEL 1

Two panel members including an Independent BASIS Chairman

CONTENT

15-20 minute viva covering questions and discussion with each candidate on course content related matters both technical and practical.

PANEL 2

Two panel members including an Independent BASIS Chairman

CONTENT

Minimum 5 minutes up to 10 minutes discourse from each candidate, presented to the 2 person panel covering a course content related subject, followed by a 10-15 minute discussion with the panel. Each candidate will be given prior notice (approx. 4 weeks) of 3 possible topics for the discourse. The viva panel will choose the topic for presentation at the beginning of each viva session. Candidates will be allowed to have headline bullet points only as an aide memoir (eg. on one postcard per topic) – not notes or script.

MARKS

The multi-choice questions merit 1 mark each if correct, short answer questions up to 8 marks each, the general viva up to 16 marks and the discourse viva up to 16 marks, therefore

100 marks are possible and the pass mark is 70%. Candidates may drop below 70% on one section provided their overall mark attains 70% or more.

NUMBERS

Each Plant Protection Award examination day will be a minimum of 7 candidates and a maximum of 10.

VENUES

Examinations may be conducted at Colleges / Universities, business premises or other suitable locations provided the appropriate facilities and quiet environment are both provided. Where possible, BASIS will endeavour to organise examinations within easy traveling distance for the majority of candidates.

TIMING

BASIS will be as flexible as possible to accommodate candidates / employers wishes. Usually, examinations cannot be conducted at particularly busy times of year, i.e. spring and autumn. Winter is preferred by many as a time when less field based activity is happening.

BOOKING AND EXAMINATION

Please contact Sue Mason on 01335 340856 training.courses@basis-reg.co.uk. Please allow at least 8 weeks notice in advance of an examination request date.

TRAINING FOR THE EXAMINATION

A number of organisations and companies have their own in-house training facilities. There are also training courses for the Plant Protection Award available from a number of Independent Trainers and / or educational organisations. These change from time to time and an up-to-date list is kept at the BASIS office. Please contact Sue Mason as above. The extent of training required will vary by individual. The more experience and knowledge a person has, the less training will be required to be able to pass this examination to obtain the Plant Protection Award.

Examinations can be conducted for groups of candidates (e.g. all from one company). In addition, exam sessions will be conducted for individuals or smaller groups collectively as required. Exam dates will feature on the BASIS website so that additional candidates can join collective exam sessions.

THE CHARNOCK PRIZE

The Charnock prize is awarded annually by the Crop Protection Association in conjunction with BASIS, to the successful candidate who obtains the highest mark in the written section of the Plant Protection Award Examination.

PLANT PROTECTION AWARD
OBJECTIVE SYLLABUS

MODULE 1 - ELEMENT: PLANT PROTECTION, AGRICULTURAL SYSTEMS AND SOCIETY

1.1 Competence

Give reasoned arguments and decisions in support of the most appropriate and safe plant protection practices, including pesticide use in different agricultural and horticultural systems, and in relation to current issues and the concerns of Society.

1.2 Performance Criteria

Candidates must be able to:

- identify different types of damage and losses caused by pests, pathogens and weeds;
- recognise and where applicable recommend the various options of plant protection measures available for pest management or control and state the values of each;
- detail costs and potential benefits of plant protection with calculations for the economics of the control of pests;
- specify the essential features of systems requiring plant protection, including amenity and commercial horticulture; organic, low and high input systems of agricultural production; industrial and urban situations; all with or without chemical controls as relevant
- relate plant protection benefits to human health, food availability, food quality and environmental protection and enhancement.
- plan an integrated control programme for the protection of a crop or amenity situation
- discuss water safety and practices to avoid pesticide pollution of water from direct and indirect sources

1.3 Essential Knowledge and Skills

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

- needs for plant protection and the effects of pest, weeds and diseases on crops
- nature of plant protection measures including cultural and biological control
- economics of plant protection including diagnosis, thresholds , impact assessment and forecasting
- main types of farming systems;
- requirements for plant protection in commercial and amenity horticulture;
- requirements of industrial weed control;
- relationships of plant protection to food production in countries at different stages of economic, social and agricultural development
- relationships of plant protection to human and animal health;
- the case for and against genetically modified crops.
- the case for and against the use of pesticides
- the use of pesticides in a sustainable farming system
- precision farming, record keeping and mapping, IT, expert systems
- varieties, pests, resistance, IPM, beneficial and detrimental organisms
- requirements for environmentally sound pesticide use in relation to water systems and soil residues

ii) Candidates will be able to exercise the following skills:

- interpret correctly information relating to the need for all types of plant protection measures including pesticide use;
- evaluate the costs and potential benefits of plant protection measures;
- discuss the basis of public concerns towards plant protection practices and pesticides with particular reference to water quality, soil residues and food residues

MODULE 2 - ELEMENT: FORMULATION

2.1 Competence

Select an appropriate formulation to suit the physical, chemical and biological properties of an active ingredient, and efficacy and safety expectations.

2.2 Performance Criteria

Candidates must be able to:

- identify the physical, chemical and biological properties of an active ingredient which will influence the choice of formulation;
- recognise the characteristics of a formulated active ingredient which influences its biological activity;
- identify any safety, environmental and wildlife hazards inherent in formulation types;
- recommend any appropriate components, in addition to the pesticide active ingredient, which may improve biological performance, safe storage and application of the product
- identify circumstances where an adjuvant is appropriate

2.3 Essential Knowledge and Skills

i) Candidates will have a knowledge and understanding of:

- formulation types;
- the relevance of the physical and chemical properties of an active ingredient;
- the relationship between formulation and the method of application;
- the relationship between the physical and chemical properties of an active ingredient and its biological activity;
- the compatibility of different active ingredients and other materials;
- the influence of formulation on the handling and environmental hazards of an active ingredient;
- the influence of formulation on biological performance;
- adjuvant types.

ii) Candidates will be able to exercise the following skills

- transfer formulation details from appropriate information sources;
- interpret relevant chemical, physical and biological data;
- identify the best formulation for a particular situation;
- plan and present product recommendations.

MODULE 3 - ELEMENT: MODE OF ACTION

3.1 Competence

Give advice on the correct selection and use of a product in the field, so as to achieve optimum control of the "pest", minimum damage to the crop, and minimum risk to the operator and the environment.

3.2 Performance Criteria

- Use the correct terminology when giving advice concerning the use of pesticides;
- Identify the conditions required to allow the product to work effectively;
- Follow procedures for establishing why an application has not been effective
- Identify the hazards of particular pesticides and select appropriate measures to minimise risk to people and the environment

3.3 Essential Knowledge and Skills

i) Candidates will have a knowledge and understanding of:

- the main classes of pesticide treatments;
- the mode of action of the major herbicide, fungicide and insecticide groups, in so far as it explains performance and hazard;
- the mechanisms and biological significance of pesticide selectivity, synergism and antagonistic reactions;
- the influence of soils, soil organisms and weather on the biological activity of pesticides;
- the influences and potential for biotechnology as an adjunct to, or component of, crop protection;
- the production and potential of biological organisms as pesticides, and the current uses of "biological pesticides";
- the development of resistant "pest" populations.

ii) Candidates will be able to exercise the following skills:

- read and interpret product labels, safety data sheets, Environmental Information Sheets and literature;
- analyse, evaluate and communicate data and observations from the laboratory and field;
- identify "pest" problems and select appropriate control measures;
- plan and present recommendations.

MODULE 4 - ELEMENT: APPLICATION

4.1 Competence

Give advice on appropriate conditions, timings, techniques and requirement for applying pesticides efficiently and safely.

4.2 Performance Criteria

Candidates must be able to:

- explain the storage, transport and handling requirements for pesticides on farm
- understand the best practice requirements for filling a sprayer, the site arrangements and water safety issues
- recommend application equipment appropriate to particular pesticide products and specific plant protection problems;
- check application patterns, correctly calibrate a sprayer/granule applicator and advise on spray and granule distribution patterns;
- explain the features, benefits and limitations of the main nozzle types available for hydraulic sprayers;
- appreciate the different types of pumps in current use, and be able to discuss their particular advantages and disadvantages;
- understand the functioning and limitations of hydro-mechanical and electronic automatic control systems;
- understand the relationships between vehicle and sprayer/granule applicator;
- recognise the significance of spray quality on target coverage, product performance and environmental risk from hydraulic sprayers;
- outline the principles of twin-fluid application systems;
- recognise the potential role of spray-line injection systems
- recognise the advantages and disadvantages of non-hydraulic application;
- explain the significance of tramlines, bout-marking devices, boom height and stability for accurate spray/granule placement;

- specify times for optimising crop-safe pesticide applications based on crop growth stages, thresholds or stage of development of weed, pest or disease problems;
- advise on the most appropriate weather and soil conditions for optimising specific pesticide applications;
- recognise the advantages and limitations of tank-mixing pesticides;
- recognise the advantages and limitations of the use of adjuvants;
- know how to optimise product performance from applicators other than hydraulic sprayers;
- recognise the crop symptoms of mis-applied pesticides;
- know how to de-contaminate application equipment and deal with any left-over chemicals or tank mix washings
- know how to decontaminate and safely dispose of used pesticide containers

4.3 Essential Knowledge and Skills

i) Candidates will have a knowledge and understanding of:

- pesticide storage, handling and sprayer filling best practice
- the types of application equipment;
- the procedures required to ensure effective and accurate delivery of pesticide to the target;
- the influence of weather, soils, crop and pesticide on the efficacy and safety of application

ii) Candidates will be able to exercise the following skills

- discuss the appropriate sprayer filling procedures
- identify and justify appropriate pesticide application systems;
- diagnose spray application faults;
- interpret environmental and crop interactions with pesticide applications;

- match the pesticide dose to its required performance;
- analyse crop problems and recommend suitable application approaches;
- decontaminate spraying equipment, and deal with pesticide containers and tank mix washings
- undertake environmental risk assessment for pesticide application

MODULE 5 - ELEMENT: HEALTH AND SAFETY

5.1 Competence

Give advice as necessary to enable the safe storage, handling, transport, use and disposal of pesticides and their containers.

5.2 Performance Criteria

Candidates must be able to:

- recognise the characteristics of pesticides that can influence health and safety;
- specify the safety requirements and procedures involved in the approval of pesticides;
- specify the statutory information which must be included on a pesticide label;
- specify other information which may be included on a pesticide label;
- explain the significance of container design in relation to safe storage and use;
- specify the regulations and recommendations (including off-label recommendations) relating to the use and storage of protective clothing and equipment and understand their importance;
- relate details of legislation, assessments and codes of practice relevant to the transport, storage (distributor and farm), handling and use of pesticides, and food safety;
- recognise the role, purpose and composition of Environmental Information Sheets (EIS'S)
- recommend emergency procedures following a pesticide incident involving people, animals or the environment;
- recognise the role and responsibility of the various organisations involved in the safe distribution, storage and use of pesticides;
- recognise public fears relating to health and safety perceptions about pesticide use
- recognise the role of protocols, monitoring, auditing and verification in relation to food quality/safety and consumer/customer assurance

5.3 Essential Knowledge and Skills

i) Candidates will have a knowledge and understanding of:

- factors influencing the safe use of pesticides;
- risk and hazard in relation to use of pesticides;
- pesticide toxicity testing;
- the significance of pesticide residues and tests;
- legislation and codes of practice relating to health and safety, food safety, transport, storage and pesticide use;
- approval requirements and procedures;
- organisations involved in safe and efficient distribution, storage (distributor and farm) and use of pesticides;
- the interpretation of EIS's, and the key information they contain, in the composition of crop product choice and programmes of control on-farm.
- emergency procedures relating to pesticide incidents;
- crop protocols and assurance schemes;

ii) Candidates will be able to exercise the following skills:

- communicate appropriate safety information;
- identify hazards of individual pesticides before use;
- identify possible problems and react accordingly to reduce any potential risk;
- complete COSHH Assessments
- interpret recommendations for the safe use of pesticides

BASIS Approved Trainers

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

Harper Adams University College
Edgmond
NEWPORT
Shropshire
TF10 8NB

Contact: Lisa Chapman
Tel. 01952 815300
email: lchapman@harper-adams.ac.uk
Web:www.harper-adams.ac.uk/shortcourses/

James Christian-Ilett
8 Painshall Close
Welton
LINCOLN
Lincolnshire
LN2 3NU

Contact: James Christian-Ilett
Tel: 01673 860925
email: christian.ilett@btinternet.com

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

DJL Agronomics
Highgrove House
Cassbrook Drive
Fulstow
LOUTH
LN11 0XR

Contact: Dr Jim Lewis
Tel: 01507 363698
email: jim.lewis@fsmail.net
Web: www.djlag.co.uk

Dorset Training Ltd
PO Box 5002
DORCHESTER
DT1 2WD

Contact: Amanda Smith
Tel: 01305 263125
email: dorsettraining@btinternet.com
Web: www.dorsettraining.org.uk

East Riding Training Group
Furrows Farm
York Road
Cherry Burton, BEVERLEY
East Yorkshire. HU17 7RU

Contact: Michelle Brumfield
Tel: 01964 550080
email: brumfield@furrowsfarm.fsnet.co.uk

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

Contact: Jenny Lewis
Tel: 01635 268086
email: jenny@hampshire-training.co.uk

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

Royal Agricultural College
Stroud Road
CIRENCESTER
Gloucestershire
GL7 6JS

Contact: James Foster
Tel: 01285 889873
e-mail: rsc@rac.ac.uk
Web: www.rac.ac.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
Trainer: John Purslow

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

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

University Of Lincoln
Riseholme Park
LINCOLN
Lincolnshire
LN2 2LG

Contact: Dr Simon Goodger
Tel: 01522 895295
e-mail: sgoodger@lincoln.ac.uk

Web:
http://www.lincoln.ac.uk/riseholmecollege/_courses/fe-short_courses/agriculture/sc_ppa_plant_protection_new.asp