Section 1: Introduction

1.1 This is the third Annual Report of the Pesticides Forum and covers its meetings held in 1999.

1.2 The Pesticides Forum was established in May 1996 to bring together organisations that have an interest in the use of pesticides and their impact. Its primary purpose is to advise on and promote responsible pesticide use. Responsible use goes far beyond simply using pesticides in line with their approval. It embraces any technique which aims to minimise environmental and health impacts. This includes using alternatives to chemicals for pest, disease and weed control where they are appropriate and cost effective, timing and targeting treatments better and using fewer sprays or reduced doses where this is possible. The Forum strongly supports the principles of Integrated Crop Management.

1.3 Immediately following its formation, the Forum developed an Action Plan for promoting responsible pesticide use. Most of the Action Plan targets have now been achieved but based on them the Forum has developed a set of broad objectives which set out to define the framework for its future operation. The objectives are described in Section 2. Section 3 reports on the Forum’s activities during 1999.

1.4 The success of the Forum depends crucially on the efforts of its member organisations. The Forum provides an opportunity for discussions between key interests, but changing practice on the farm depends on using established channels between Forum members and the farming community; Section 4 reports on these supporting initiatives. Finally Section 5 looks at some of the issues that will be considered by the Forum during 2000.

1.5 The current membership of the Forum, with addresses and telephone numbers, is shown at Annex A. Representatives from all the Departments responsible for regulating pesticides in Great Britain, plus the Department for Trade and Industry and the Department of Agriculture and Rural Development - Northern Ireland, attend Forum meetings in an advisory capacity. Meetings are held three times a year normally in February, June and October. Department of the Environment, Transport and the Regions (DETR) and Pesticides Safety
Directorate (PSD) provide a joint secretariat. A review of the Forum's membership after its first three years of operation has already started and details should be available in the course of 2000.

1.6 A complete list of discussion and information papers presented to the Pesticides Forum in 1999 is given at Annex B. Copies of all papers are available from the joint secretariat at the addresses given on the title page. Annex C provides details of Government policy initiatives and developments in the Government's research programme, where these are related to Forum activities.

1.7 The Pesticides Forum reports on progress annually to the Advisory Committee on Pesticides (ACP) (see Annex D for a full list of abbreviations). As part of this process, in November 1999 the ACP were invited to discuss the draft annual report and future work programme of the Pesticides Forum. The comments of the ACP have been taken into account in this report.

Pesticides Forum Joint Secretariat
December 1999

Section 2:
The Pesticides Forum's Framework of Objectives for Promoting Responsible Pesticide Use

2.1 One of the first tasks that the Forum set itself was to draw up an Action Plan to identify and promote measures to encourage responsible pesticide use and to guide farmers and growers throughout the UK to make informed decisions on their use of pesticides. Details of the work undertaken to meet these specific Action Points have been recorded in previous Annual Reports.

2.2 All the actions identified in the Action Plan have now been considered. However, many of the issues were on-going and complex such as the need continuously to improve technology transfer. Rather than produce a further detailed action plan the Forum agreed to devise and adopt wider-ranging aims in the form of summary objectives. These will provide a framework for the Forum's operations in 2000 and beyond whilst allowing greater flexibility in the agenda. The objectives are reproduced below:

*Promote effective means of helping farmers, growers, advisers and crop consultants to adopt techniques that reduce the use, risk and impact of pesticides and improve the speed and effectiveness of technology transfer to the end-user.*

*Promote practices and technologies that are most effective and practical for reducing the impacts of pesticides.*
Encourage dialogue between 'conventional' and organic farming interests to ensure that non-chemical techniques for pest control are introduced into 'conventional' systems where it is realistic to do so.

Encourage crop assurance schemes which promote responsible pesticide use.

Keep under review wider developments in agriculture, such as the influence of GM crops, which impact on pesticide use and offer advice to Ministers.

Contribute to improving information about the environmental impact of pesticides and dissemination to the end user.

Consider how the minimisation of pesticide use policy can be monitored through the use of valid indicators of environmental risk from pesticide use.

Encourage all who use, advise and sell pesticides to keep their knowledge of pesticide products and their use up to date through continuing professional development.

Encourage the uptake of relevant innovative technologies to minimise impact of pesticides on the environment.

Promote sound and comprehensive education in Integrated Crop Management (ICM) and more generally on minimising the impact of pesticides.

Encourage a two-way exchange between researchers and research funders on the one hand and farmers and advisors on the other, to ensure that research projects and research results relevant to pesticide minimisation have the maximum influence on practical farming.

Bring to the attention of funding bodies any significant gaps in research and development relevant to pesticide minimisation.

Prepare and publish an Annual Report of its activities and to maintain a close working relationship with the Advisory Committee on Pesticides.

2.3 The rationale behind each of these objectives is described in Forum Paper PF 73 Rev. 1.
Section 3: Report on the Pesticides Forum's Activities

3.1 The Pesticides Forum met on three occasions during 1999 and this Section summarises the topics which were considered. These are indicated in **bold** whilst the appropriate Pesticides Forum Paper reference (**PF/***) is also given.

3.2 A full list of papers is at Annex B and copies can be obtained from the Secretariat at the addresses given on the title page.

3.3 The Pesticides Forum has been actively involved in the debate surrounding proposals from the Government relating to the possible introduction of a pesticides tax. Environment Minister, Michael Meacher, attended the Forum's February meeting to hear members' views at first hand on this and other issues. Concern was expressed that the proposals would effectively be a tax on food production and that an increase in input costs could affect UK farmers' ability to compete at an international level. The possibility of less environmentally benign, but cheaper products being used was also raised, with the risk that taxes would not have the desired effect of reducing the impact on the environment. Some members suggested the Government was considering the introduction of a tax without giving time for a wide range of voluntary measures to take effect. However other members felt that a tax could play a useful part in reducing the use of pesticides and their environmental impact. Mr Meacher assured members that a final decision on introducing a pesticides tax would be made only after full consideration of all the factors involved.

3.4 The Forum considered the SNH initiative - 'Targeted Inputs for a Better Rural Environment' (TIBRE) - which aims to use an integrated approach based on the most recent information to reduce the environmental impact of agriculture. TIBRE is designed to be self-supporting with no requirement for subsidy and represents a partnership between farmers and environmentalists. The project has two phases. The first is the arable system, which was developed in 1993/94. This resulted in a handbook on products and technologies. Pesticide data sheets give information on products together with results of field trials. Information is also provided on targeting inputs in relation to spatial variability both for pesticides and fertilisers. This deals with methods of reducing spray drift, using low dose products and greater environmental awareness information. Further initiatives within the arable project include the use of Global Positioning Systems (GPS) for precision farming, continuous updating of the handbook, use of the TIBRE web page, the Farming and Wildlife Advisory Group (FWAG) Technology audit and links with Quality Assurance Schemes. (**PF/72**)

3.5 The ADAS/CSL study, funded by MAFF, concerning the implications for pesticide use of the Agenda 2000 reforms in the Common Agricultural Policy was reviewed. The first part of the study identified the key elements in the
draft regulations relevant to the arable sector. In responding to the proposals farmers would also be influenced by factors such as soil type and crop rotation strategy. The study then looked at gross margins throughout the rotation both before and post Agenda 2000 by region and soil type. There was no reason to suspect any resultant change in disease, pest or weed problems. The biggest influence was therefore likely to be changes to the areas of each crop grown in response to any likely change in profits. The study concluded that there was no long-term evidence that inputs such as pesticides would be reduced by reduction in crop prices, particularly if compulsory set-aside was abandoned. The Forum noted that this conclusion was open to debate. It seemed unlikely that a reduction in support prices would not lead at some point to a reduction in inputs including pesticides. Subsequent to the discussion ADAS reviewed the study conclusions in the light of the final outcome of the Agenda 2000 negotiations. This confirmed their earlier view that major changes in pesticide usage were unlikely. (PF/74)

3.6 The June meeting of the Forum was staged at the Morley Research Centre, Attleborough, Norfolk by kind invitation of the Norfolk Agricultural Association. This provided members with an opportunity to discuss the farm’s approach, based on Integrated Crop Management principles, and farm policy on biodiversity and habitat conservation. The Norfolk Agricultural Land Management Initiative (NALMI) is managed from Morley and aims to improve the economic, environmental and social impacts of farming. The Forum also viewed experimental trials on weed control in genetically modified sugar beet which formed part of the ‘Botanical and Rotational Implications of Genetically Modified Herbicide Tolerant (BRIGHT)’ crop research programme.

3.7 At Morley, the Forum discussed recent research conducted by ADAS on ‘point source’ contamination of watercourses by isoproturon (IPU). This suggested that the cumulative effect of small ‘point sources’ could be as significant as contamination arising from soil leaching following normal use. Such point sources included minor splashes whilst filling the sprayer, leakage from used containers or ‘contaminated’ mud spread from the sprayer tyres. These minor point sources could collectively constitute a major point source when the yard was washed down. The study suggested that a significant reduction in IPU levels in water might be achieved by better ‘housekeeping’ during spray operations. Discussion of the results was linked to Morley’s work on the development of biobeds to reduce pesticide contamination of water. The intention is that all sprayer and yard washings are processed through a biobed.

3.8 The Forum was asked by the then MAFF Minister of State – Jeff Rooker MP – to consider a project in France involving the distribution of ladybird eggs. This had the twin aims of encouraging the biological control of aphids whilst drawing attention to an apparent decline in the ladybird population. The Forum noted the importance of biological control through the introduction of natural predators in glasshouse production. However, members expressed doubts about the ad hoc
introduction of a species into the open environment. If the released organisms had no species on which to feed there would be no benefit as the predators would soon die out. The Forum agreed that it was likely to be far more valuable to encourage natural predators through the establishment or improvement of hedgerows, conservation headlands, beetle banks, wildlife field margins or similar features. (PF/77)

3.9 The British Agrochemical Association (BAA) confirmed that three of their member companies had produced Environmental Information Sheets (EIS) for autumn products which summarised data relevant to the assessment of environmental risk submitted as part of the Approvals Process. These 'pilot' sheets are intended to elaborate on the label and interpret the environmental risks to provide the end user with more useful information which will allow them to manage the risks in the field more effectively. Members of the Pesticides Forum have been asked to provide feedback on the sheets produced as part of the 'pilot' launch. Other agro-chemical companies will, subject to the success of the 'pilot' scheme, be encouraged to produce their own EISs. Discussions are also due to take place with PSD on providing an independent audit of EISs prior to their publication. (PF/85)

3.10 Towards the end of 1997, PSD was asked by the Pesticides Forum to investigate the opportunities for use of decision aids to assist in the interpretation and implementation of the Codes of Practice, especially the Green Code – "The Code of Practice for the Safe Use of Pesticides on Farms and Holdings". As a result, ADAS introduced a paper setting out how decision aids could be used to assist the farmer, grower or operator to consider all factors when conducting particular spraying operations. The aids could be provided in the form of a simple checklist, a flowchart or even on CD-Rom. The Forum agreed that further work needed to be done to consider who the target audience for these aids should be, and in what format they could be provided. (PF/84)

3.11 Central Science Laboratory (CSL) provided a summary of a project carried out on behalf of OECD and DETR to develop pesticide aquatic risk indicators. CSL have been working on the development of a model indicator as part of an Organisation of Economic Co-operation and Development (OECD) Expert Group. A database was set up containing data for 308 pesticides in the United Kingdom and programs developed to run the various indicator models. In this way the Group was able to assess the variances between the existing types of indicators. Subsequent work for DETR has led to the development of a new indicator based on a 'threshold' approach. In essence this divides the total area of pesticide applications into different risk categories, and shows how these change over time. The risk categories are defined using existing risk assessments used in the UK's pesticides approval process. This work is due to be reviewed by the OECD at which time a decision will be made whether to recommend the adoption of this approach to member countries and to consider the development of other indicators including ones for terrestrial risk. (PF/83)
3.12 Linking Environment and Farming (LEAF), supported by Forum members and a number of funders, have now produced a **video entitled 'Integrated Crop Management in Practice'**. This will help to disseminate information to educational and training establishments as well as farmer/grower organisations on issues relating to integrated crop management and improved pesticide application techniques.

3.13 Forum members also considered issues relating to the operation and membership of the group with a view to feeding ideas into the review of the Forum commissioned by Ministers. The views of Forum members form the basis of Section 5 of this Report. *(PF/73 Rev. 1, PF/75 & PF/82)*

**Section 4: Report on Forum Members' Activities**

4.1 Member organisations have been active throughout the year, both individually and collectively, in pursuing the Forum's aims. This Section briefly summarises these activities and presents them, as last year, under four main headings - collaboration; promotion; technology transfer and monitoring of progress.

**Collaboration**

4.2 LEAF has produced a 20 minute video introducing farmers to integrated farming practice. The video was produced with sponsorship from a number of sources, including DETR and has been widely distributed within Colleges, Universities, other training establishments and the farming community.

4.3 PSD continues to liaise with the Ministry of Agriculture, Fisheries and Food (MAFF) and other organisations on the development of the Decision Support System for Arable Crops (DESSAC) initiative particularly in the development of a module on the use of fungicides on winter wheat.

4.4 The BAA embarked on an extensive campaign of industry training including the BASIS/LEAF-organised Integrated Crop Management (ICM) course. Additional training courses have been run for member companies to ensure that their staff fully appreciate ICM and the role their products can play in an ICM regime. BAA members are also being audited on their in-house ICM training. The BAA has also called for improvements and a review of the current operator training and certification procedures and is participating in the LANTRA-led review of National Occupational Standards for pesticide application. The BAA also continues to support the work of LEAF and the delivery of ICM to UK farms through the Assured Produce and Assured Combinable Crops Schemes.
4.5 Several workshops for farmers and advisors were held by Scottish Natural Heritage (SNH) at the beginning of 1999 in order to evaluate the uptake of the TIBRE handbook for arable farming which was originally published in 1996. As a result, the handbook is in the process of being updated and will include new data sheets on topics such as spraying equipment and precision farming technologies. SNH are also making the TIBRE handbook available on their web site. It is also being incorporated into the Environmental Management for Agriculture (EMA) software, which was developed by the University of Hertfordshire. The United Kingdom Agricultural Supply Trades association (UKASTA) members have also been active in the TIBRE programme and this culminated this year in three TIBRE farmers taking the top three places in the Agribusiness Scottish Arable Farmer of the Year Awards, thus emphasising that good environmental practice can go hand-in-hand with profitable and efficient arable farming.

4.6 The NFU and the British Retail Consortium (BRC) have been instrumental in the introduction of the Assured Produce Scheme. In the first two years of operation over 3,500 growers have registered with the Scheme and are producing a variety of crops which conform with the requirements of individual crop protocols. There are currently 40 crop protocols, which have been written by industry specialists in consultation with the appropriate crop consultative group or organisation.

4.7 The Scheme combines the rigorous statutory standards for the production of fresh produce with an independent verification procedure, underlining the industry’s commitment to achieve uniform standards for product assurance and good environmental practice. This responsible approach by growers in partnership with their major retailer customers and processors, to meeting customer aspirations has been achieved without any increase in the cost of food and is an integral part of food safety practice.

4.8 There is a growing recognition between the different assurance schemes of the need to come together under an umbrella organisation to avoid duplication of effort, reduce costs and thus aid the move towards whole farm verification possible resulting in a quality assurance ‘kite mark’. It must be borne in mind that most of these schemes were created as food safety, production schemes and do not claim to be overtly environmental. However, a growing number of enlightened producers have joined LEAF and are introducing conservancy and biodiversity programmes on a voluntary basis. Discussions are taking place within the industry to see if some form of recognition could be given to their efforts, without undermining or confusing moves to achieve a whole farm quality assurance scheme.
4.9 The UKASTA-operated Trade Assurance Scheme for Combinable Crops (TASCC) follows on from the Assured Combinable Crops Scheme (ACCS) at the farm gate. The vast majority of combinable crops tonnage is now handled by TASCC-certified traders.

4.10 Focus on Farming Practice (FoFP) have launched a booklet entitled 'A Farmers Guide to Quality Assured Crops' aimed at providing practical guidance on the implementation of assurance schemes drawing upon the experience of CWS Farms Group, Profarma and Hydro Agri.

4.11 UKASTA also continues to be a leading member of the SCIMAC initiative which is seeking to progress the controlled trialling of genetically modified crops to examine environmental and ecological factors prior to the unrestricted commercial sowing of such crops.

4.12 In field trials this summer, the Game Conservancy Trust (GCT) research staff screened six insecticides approved for use in cereal crops for their spectrum of activity against non-pest, beneficial chick-food insects. Other agricultural practices including minimum tillage, undersowing, the use of grass margins and beetle banks were also examined for their impact on beneficial insects. Data from this trial will be analysed and will ultimately allow the GCT to advise farmers on pesticide choice.
Promotion

4.13 The BASIS Certificate in Crop Protection enables holders to meet the requirements of the current legislation under the Food and Environment Protection Act 1985 (FEPA). There were again a high number of applicants, with a high percentage coming from the farming community, encouraged by the increasing number of crop assurance schemes. Candidates also came from councils, the Environment Agency and the supply and manufacturing trade. There has been a good take-up of the BASIS Nominated Storekeeper Certificate which is also a requirement under FEPA.

4.14 To date, 838 certificates had been issued to successful candidates, ranging from agrochemical industry to farmer training groups, of the BASIS/LEAF course on Integrated Crop Management. Even greater success has been achieved with over 1,100 certificates being awarded on Crop Protection Management again with many candidates coming from the farming sector. The BASIS Professional Register, which is linked to continuing professional development, continued to attract qualified people to the scheme including those with a Fertiliser Advisors Certification Training Scheme (FACTS) qualification. UKASTA member companies have also used the Register to help in the development of staff together with a range of seminars and conferences. Membership of the Register was increasingly being asked for by the supermarkets and quality assurance schemes for those giving advice to farmers and growers. BASIS has developed, in consultation with the Pesticides Safety Directorate, a training course for all those directly involved in the preparation of Local Environmental Risk Assessment for Pesticides (LERAPs). The GCT also gave agronomists five days of BASIS-accredited training days where the concept of modern agriculture linked to a thriving wildlife was presented.

4.15 In teaching students from Diploma to PhD, the Scottish Agricultural College (SAC) has made much greater recognition of the principles of ICM.

4.16 Through its team of 85 advisors, FWAG made 6,457 farm visits in 1998/99, 70% of which dealt with whole farm conservation. As part of this, key farming operations, such as the use of pesticides, are highlighted with advice given on the environmental impact of pesticides on 42% of visits in England (1,997) with a corresponding figure of 29% (504) in Scotland. This advice, in conjunction with complementary advice on field margin management and pollution control, has offered the industry an avenue for disseminating guidance on best practice to a wide range of farms throughout England and Scotland.

4.17 The Environment Agency has continued to give general advice and guidance to pesticide users on the environmental aspects of pesticide use, especially the new Groundwater Regulations that were introduced in April this year. The Agency continues to support the work of LEAF and has published a report - Diffuse Pollution from Agriculture; A Field Guide.
4.18 There are now 35 volunteer LEAF demonstration farmers across the country and it is intended that more will be launched up to a target of about 50 by 2002. These farms receive regular visits from other farmers and opinion formers from a wide variety of backgrounds. Demonstration farmers' efforts are backed up by LEAF Supporters and over 70 LEAF Audit Ambassadors, many from ancillary trades, who deliver lectures, help run stands at agricultural shows and assist demonstration farmers as necessary. The Audit Ambassadors particularly promote the concept of integrated farming through the LEAF Audit.

4.19 The past year has seen a broadening of emphasis of the LEAF integrated farming initiative to include livestock as well as arable farmers. It was decided that the phrase Integrated Crop Management was too narrow and that the term Integrated Farm Management better reflected LEAF's range of activities. A new handbook entitled "LEAF Handbook for Integrated Farming – A Practical Guide to the Adoption of Integrated Farming" is due to be published in the new year.

4.20 The provision of training on Integrated farming techniques to all levels within the industry continues to be fundamental to LEAF's activities. Farm workers, courses at colleges, universities and other training establishments as well as LEAF members, demonstration farmers, supporters and ambassadors have all benefited from training by LEAF personnel.

4.21 There have been a number of leaflets published and promoted by the BAA aimed at agricultural pesticide users. These colourful leaflets provide simple advice on best practice. The titles include – Record Keeping, Pesticides and Conservation, Protective Equipment, Pesticide Storage, Pesticide Training and Emergency Procedures. The BAA has also helped publish a joint leaflet with National Farmers’ Union (NFU), the UK Agricultural Supply Trade Association (UKASTA), the National Office of Animal Health (NOAH) and the British Pest Control Association on "Organophosphate Insecticides and their Uses" which gives practical advice on health protection when using these compounds in agriculture. The BAA was also instrumental in publishing a range of stewardship leaflets and posters.
4.22 Membership of the GCT's Arable Farmer Conservation Group Forum grew to over 1500. There are now 10 regional groups meeting twice a year. In addition, the Research Department's Field Officer from the GCT visited over 100 farms and gave presentations at over 20 farmer lectures/farm walks. The message given at all these events was of minimising pesticide damage, promoting the judicious use of pesticides in crops and the best use of non-cropped habitats, especially field margins and set-aside. In support of these presentations, GCT have also produced and distributed to farmers factsheets on field margins and set-aside management and a booklet on best practice for hedge and hedgerow management.

Technology Transfer (Research and Development)

4.23 A 4th annual series of arable case studies was conducted by LEAF to assess the relative profitability of different farming systems. The most dramatic finding from this study was the severe reduction in farm profits since 1996 whichever system was employed. However, integrated farming was once again shown to be economically advantageous when compared to conventional farming systems.

4.24 Following the success of the Integrated Arable Crop Production Alliance (IACPA) conference in Autumn 1998, there was a series of roadshows in selected venues across the UK featuring speakers and highlighting updated research from the Less Intensive Farming and Environment (LIFE), LINK (LINK is the UK Government's principal mechanism for supporting collaborative research partnership between UK industry and the research base) and FoFP programmes.

4.25 The BAA has played an active role in the work of its member company, Rhone Poulenc, in the Cherwell valley to investigate the relative importance of point-source contamination of water supplies. Information coming from this study highlights the opportunities to improve best practice and identify practical ways of minimising water pollution. They have also continued to support, along with the Environment Agency, research into the use of Biobeds for the disposal of spray waste whilst the Environmental Research Forum have discussed "Biodiversity" and "Point Source Contamination of Water". They have also undertaken a study with a large arable farming company into the costs and complications of running a recovery scheme for all farm packaging waste.

4.26 The BAA is also participating in the promotion and development of the University of Hertfordshire's Environmental Management of Agriculture research project. With DTI support they are also running a research initiative which includes debates on "Precision Agriculture", "Risk/Benefit Analysis" and "Sustainable Agriculture". A special research initiative web site has also been established to provide information on this research.
4.27 A number of UKASTA members have organised open days and a principal feature of these events has been the technology transfer of improved Integrated Crop Management techniques for better targeting of arable inputs and optimal use of pesticides.

4.28 Apart from the Crop Protection Report, the SAC publish articles on good pesticide practice in the Potato Newsletter, Leading Edge (horticultural publication) and Advisory Newsletters issued from local offices. In open days across Scotland, the SAC have put on demonstrations of good pesticide practice in conjunction with both the Home Grown Cereals Association (HGCA) and the British Potato Council (BPC).

Monitoring

4.29 BASIS continues with the annual assessment of pesticide stores involved in the sale and supply of pesticides, and to audit the qualifications of staff in line with the requirements of the Code of Practice for suppliers of pesticides.

4.30 The Agricultural Engineers Association (AEA) Sprayer Test Scheme, launched in June 1997, increased the number of tests carried out on sprayers at work by 80% during 1999. To date the 41 test centres have carried out over 750 tests on sprayers. Items checked during the test include mechanical safety, machine integrity, ancillaries, delivery and application systems and accessories. These test centres are affiliates of the AEA and have personnel trained to carry out the test. Failure rates for sprayers have been shown to be running consistently at 25%, the most common faults being worn nozzles, boom defects and worn hoses. The AEA promote the scheme nationally, through press and promotional activities. Test centres carry out local promotion. The cost of the test is offset by the more accurate application of pesticides as well as the potential environmental benefits.


4.32 The Scottish Executive Rural Affairs Department (SERAD) fund a programme of advisory activities at SAC. Several of these impinge on pesticide use. 'Crop Health' (AA105) undertakes regular crop monitoring in order to alert farmers, advisors and the public to changes in pests, weeds and diseases in order that pesticides are not applied unnecessarily and, if applied, then at the correct timing. Information is made available through the SAC Crop Protection Report which is published 20 times a year. AA105 also includes specific campaigns. One such campaign just completed has been the efficient control of potato tubers surviving after the crop has been harvested (also known as groundkeepers or volunteers). Additionally, SAC Technical Notes have been
produced on pesticide use in spring barley for pest, weed and disease control – part of an ongoing series on good pesticide practice. 'Pollution Prevention' (AA408) involves the provision of information and advice to prevent pesticides impacting on the environment. AA402 provides free advice about organic farming and the Organic Aid Scheme.

Section 5:
The Future

5.1 As indicated earlier in the report, the remit and membership of the Forum is currently under review. However, subject to Ministers’ views, it seems likely that the Forum or a similar body will continue in order to provide a focal point for a wide range of expertise and initiatives to promote responsible use of pesticides. Key issues to be considered are likely to include; how to take forward the framework of objectives based on the Action Plan; how to measure the effectiveness of the Forum's activities; identification of the major issues that will confront the use of pesticides in the future; whether the current membership allows for the Forum's future activities to be successfully carried out; whether the original terms of reference are still appropriate four years on.

5.2 The future of the Forum was discussed at the October meeting. Members felt the Forum should be more active in taking actions forward from the Action Plan and Framework of Objectives. There was agreement that the members should focus on priority objectives and to take them forward in working sub-groups that would report back to the main meetings. Each sub-group would have terms of reference and objectives to follow. The initial two topics selected for consideration by sub-groups in 2000 are 'New Technologies to Reduce Environmental Impacts' and 'Outcomes and Indicators' and it is expected that start up meetings will be convened in January 2000.

5.3 Other objectives will be identified as subject themes that will be progressed by members and the secretariat with updates reported at each meeting. The idea is to ensure that important items have continuity in their consideration by the Forum in order to achieve 'end-points' for reduction of pesticide impacts on the environment and for improving responsible use. Three themes have initially been identified to take forward in 2000. These are: 'Pesticide Disposal', 'Compatibility and Role of Decision Aid Schemes' and 'Development of Crop Assurance Schemes'.

5.4 Members agreed that recommendations arising from an OECD workshop on Integrated Pest Management and Pesticide Risk Reduction (see paper PF/80i) should be adopted by the Forum. These very much complement the ongoing Framework of Objectives of the Forum and bring the aims into line with international objectives for pesticide risk reduction.
5.5 The membership of the Forum largely reflects all stakeholders in the pesticide debate. Whilst greater representation from some sectors e.g. education/training, may be desirable, this has to be balanced against a manageable size for the Forum. However, this may be a less important consideration if the work of the Forum is to be channelled through smaller sub-groups.

5.6 The Forum agreed that it should be vigilant in considering emerging issues for pesticides and adopt a more visionary approach leading to actions. An item on the agenda for each meeting will ensure awareness of and constant attention to new issues.

Annex A:
Membership of The Pesticides Forum

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<tr>
<th>Chairman</th>
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<td>Name</td>
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<td>Mr Jonathan Curtoys</td>
<td>Wildlife and Countryside Link</td>
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<td>Mr Alan Dalton*</td>
<td>TGWU</td>
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<td>Dr Keith Dawson</td>
<td>UKASTA</td>
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<td>Mr John Foley</td>
<td>FPC/BRC</td>
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<td>Mr John Handbury</td>
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<td>Consumers Association</td>
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<td>Mr Richard Knight</td>
<td>FWAG</td>
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<td>Dr Alastair Leake</td>
<td>CWS - (FoFP)</td>
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<td>NFU</td>
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<td>Mr Charles Russell</td>
<td>NFUS</td>
</tr>
<tr>
<td>Mr Peter Segger</td>
<td>UKROFS</td>
</tr>
<tr>
<td>Dr Nick</td>
<td>GCT</td>
</tr>
<tr>
<td>Name</td>
<td>Organization</td>
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<tr>
<td>Sotherton</td>
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<tr>
<td>Mr John Terry*</td>
<td>FWAG</td>
</tr>
<tr>
<td>Dr Stuart Wale</td>
<td>SAC</td>
</tr>
<tr>
<td>Mr Paul Willgoss*</td>
<td>FPC/BRC</td>
</tr>
</tbody>
</table>

*Members and Observers who have left the Forum during the year

**Observers / Advisors of The Pesticides Forum**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Address/Contact Information</th>
</tr>
</thead>
<tbody>
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<td>Room 305, Pentland House, 47 Robbs Loan, EH14 1TW (Tel: 0131 244 6331)</td>
</tr>
<tr>
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<td>DoH</td>
<td></td>
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<tr>
<td>Mr Glynne Jones*</td>
<td>HSE</td>
<td></td>
</tr>
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<td>Mr Ian McKee</td>
<td>DARDNI</td>
<td>Dundonald House, Upper Newtownards Road, BELFAST BT4 4SB (Tel: 01232 524773)</td>
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</tr>
<tr>
<td>Mr Roy McLachlan*</td>
<td>SERAD</td>
<td></td>
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</tbody>
</table>
Annex B:  
List of Papers Considered by The Pesticides Forum

**February 1999**
- PF 72 TIBRE Presentation
- PF 73 Objectives for Promoting Responsible Pesticides Use 1999-2000
- PF 74 CAP Reform: Potential for Effects on Environmental Impact of Farming (SA0111)

**June 1999**
- PF 73 Rev 1 Objectives for Promoting Responsible Pesticide Use
- PF 75 Development of the Pesticides Forum: Discussion Paper
- PF 76i Notes on IPM EUROPE (previously PF 75i)
- PF 77 Promotion of Ladybirds and Other Biological Controls
- PF 78i Scientific Review of the Impact of Herbicide Use on Genetically Modified Crops
- PF 79i The Commercial Use of Genetically Modified Crops in the United Kingdom: The Potential Wider Impact on Farmland Wildlife

**October 1999**
- PF 81 Reports from Organisations
- PF 82 Development of the Pesticides Forum
- PF 83 Pesticide Aquatic Risk Indicator Project – Final report from CSL
Annex C: Government Initiatives and Research and Development

1. This annex reports on a number of Government initiatives which have particular implications for the Pesticides Forum’s activities. It also summarises developments in MAFF and DETR’s research programme on pesticides. The topics involved are shown in bold.

Policy Developments

2. New regulations were introduced in the spring of 1999 aimed at increasing the protection of groundwater. The Regulations, which stem from an EC Directive, require the sites for disposal of hazardous substances to land including pesticides to be authorised. The Environment Agencies are responsible for enforcement under the regulations.

3. Organophosphate chemicals represent the second largest class of insecticides in the UK in terms of the area sprayed after the pyrethroids. However, concern has been expressed about possible health risks associated with long-term occupational exposure, particularly in relation to their use in sheep dips. This issue has been the subject of study by a number of the Government’s independent advisory committees. Against this background in 1998 Ministers instituted a review of the approvals for all organophosphate pesticides (agricultural and non-agricultural) in the UK. The review also covers all other anticholinesterase compounds. Manufacturers were given strict deadlines to indicate support for compounds and to submit data. As a result, approvals for 17 compounds, which were not supported, are being withdrawn and the compounds are now on a two-year wind down period after which it will be illegal to use them in the UK. Data for 21 of the remaining 23 compounds had to be submitted in
September 1999 and these are currently under evaluation. Data for the remaining 2 compounds are due to be submitted by September 2000.

4. More generally the European Community is currently reviewing under Directive 91/414 all compounds which are approved for use as agricultural pesticides in one or more of its member states. In 1992 the Community established a programme to review 90 pesticide active substances. To date there have been decisions to withdraw 7 active substances from the market, and to include 2 on the positive list of active substances (Annex I) that can be authorised by member states. In addition, 4 new substances have been included on the list. The second stage of the review programme involving approximately 150 active substances is due to start in mid-2000.

5. A new scheme under which pesticide buffer zones for certain arable pesticides could be modified through local risk assessments was introduced in March. The scheme known as Local Environmental Risk Assessment for Pesticides (LERAPS) allows the standard arable buffer zone (now 5 metres from the top of a watercourse bank) to be reduced to a minimum of one metre depending on a variety of factors which can reduce spray drift. A key component of the scheme is that the use of low-drift spray equipment allows buffer zone distances to be considerably reduced. Such equipment is subject to approval under arrangements operated by PSD. A number of applications for low drift equipment have been approved and others are being processed which should contribute to the effectiveness of the scheme. Ideas are currently under consideration to extend the approach to pesticide use in orchards and hop fields.

6. There has been much public interest in the question of genetically modified organisms. The Forum has a particular interest in the potential impact on pesticide usage of the cultivation of herbicide tolerant crops. The cultivation of such crops could result in changing patterns of herbicide use with potential consequences for biodiversity. These consequences have been carefully examined in two Government discussion papers. These were produced by the Pesticides Safety Directorate, (Scientific Review of the Impact of Herbicide Use on Genetically Modified Crops) and the Department of Environment, Transport and the Regions, (The Commercial Use of Genetically Modified Crops in the United Kingdom: The Potential Wider Impact on Farmland Wildlife).

7. Changes in the extent of organic farming will clearly impact on the use of pesticide although organic farmers also use a small number of pesticides such as sulphur which are natural in origin. A combination of improved grants for conversion to organic farming and strong market demand for organic produce has resulted in continuing growth in the organic sector. It is expected that the amount of organically farmed land and land in conversion in the UK will increase to approximately 300,000 hectares by the year 2000.
Research and Development

8. The PSD co-ordinated research programme on pests and pesticides supports both the statutory functions of PSD and the broader Government policy objective that pesticide use should be limited to the minimum necessary. The following paragraphs outline the programme, describe some important outputs and illustrate the aims of some key current projects.

9. The 1998/99 research programme on pests and pesticides is detailed in Appendix 1. It comprised 98 projects costing, in total, about £8m. Part of the programme (55%; £4.4m in 1998/99) is concerned with supporting PSD's statutory functions, principally ensuring the safe use of pesticides. In addition to safety, a small group of projects (3.6%; £285k in 1998/99) are focused on humaneness and efficacy. The remaining area of research (41%; £3.3m in 1998/99) within the pests and pesticides programme aims at ensuring that pesticide use is the minimum necessary for effective pest and disease control.

10. PSD co-ordinated work has made particular contributions to the development of EU legislation, work on operator exposure studies and work on analytical method development. For example, PSD has supported work on operator exposure studies for a number of years and these data along with other contributions are being developed into a database of exposure studies. This will improve the risk assessments on water protection which underpin pesticide approvals. The work is being funded by the European Commission under the EURO-POEM (Predictive Operator Exposure Model) initiative.

11. PSD aims to improve understanding of the fate and behaviour of pesticides in the environment. One outcome of this work is now available online. Physico-chemical Evaluation: The Environment (PETE) is a Windows-based Expert System for use on personal computers and can be used to give a broad theoretical prediction of the pesticides against which scientific data provided by applicants for registration can be interpreted. PETE is of direct value to those
working on the fate and behaviour of pesticide residues and will enable the rapid transfer to PSD of the results of research on the movement of pesticides in soils and plants. PETE provides a training aid for those requiring quantitative knowledge of factors influencing the fate of crop protection agents in the environment and is of particular use in the calculations of predicted environmental concentrations (PEC) required by European protocols.

12. Another example of a new long term project, costing over £500,000 (The work also attracts an additional £466,000 from ongoing studies funded by English Nature, NERC, BBSRC and the World Wide Fund for Nature) and involving the CSL, GCT, ITE and the RSPB, will investigate the potential indirect effects of pesticides on bird species. The work will focus on a wide range of farmland bird species including the Swallow, Skylark and Song Thrush. It aims to investigate indirect effects and, in the long term, to provide better protection for birds from such effects.

13. Research on method development for checking pesticide residues in food has already provided valuable information on the variability of residues of certain pesticides (OPs and carbamates) in key commodities. This work formed the basis of an international conference on variability held in York in 1998. Estimation of consumer exposure to pesticide residues in the diet and probabilistic risk assessment continue to be important areas of work and results will contribute to continuous improvements in food safety.

14. In 1998/99 DETR funded research into the run-off of herbicides from hard surfaces, the use of biobeds for pesticide disposal, and the development of risk indicators for the aquatic environment. The latter project has been considered elsewhere in this report (see p.8) and the other projects are ongoing. Further funding of pesticide minimisation projects is proposed for 2000.
### Appendix 1:
Government Expenditure on the Pests and Pesticides Research Programme for 1998/99 broken down by the Main Areas of Work

<table>
<thead>
<tr>
<th>Research Area</th>
<th>1998/99 (£k)</th>
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<tbody>
<tr>
<td>Alternatives to conventional pesticides: strategic research on crop protection using alternative means such as biological control, pest behaviour modification or pest lifecycle disruption.</td>
<td>1,869</td>
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<tr>
<td>Consumer risk assessment: Development of analytical methods in support of WPPR and WIIS monitoring, consumer intake assessment and risk assessment.</td>
<td>1,463</td>
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<tr>
<td>Reduced Pesticide Inputs: Ecological and practical effects of reducing pesticide input.</td>
<td>683</td>
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<tr>
<td>Pesticide Resistance: strategic work to improve understanding of resistance development and the use of models to evaluate resistance control strategies.</td>
<td>777</td>
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<td>Environmental effects of pesticides: fate and behaviour of pesticides in air, soil and water.</td>
<td>1,153</td>
</tr>
<tr>
<td>Environmental effects of pesticides: non-target effects on vertebrates and invertebrates.</td>
<td>1,006</td>
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<tr>
<td>Pesticide Application: Understanding and reducing spray drift and operator safety.</td>
<td>841</td>
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<td>Vertebrate Control: Humaneness of rodenticides.</td>
<td>285</td>
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<tr>
<td>SAPPIO and TSFS LINK funding.</td>
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<tr>
<td><strong>Total Cost (£k)</strong></td>
<td><strong>8,132</strong></td>
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Annex D:
Glossary of Terms

ACCS - Assured Combinable Crops Scheme
ACP - Advisory Committee on Pesticides
ACRE - Advisory Committee on Releases to the Environment
ADAS - Agricultural Development and Advisory Service
AEA - Agricultural Engineers Association
APS - Assured Produce Scheme
BAA - British Agrochemicals Association
BBRSC - Biotechnology & Biological Sciences Research Council
BPC - British Potato Council
BRC - British Retail Consortium
CAP - Common Agricultural Policy
CLA - Country Landowners Association
CPD - Continual Professional Development
CSL - Central Science Laboratory
CWS (-FoFP) - Co-operative Wholesale Society (- Focus on Farming Practice)
DARDNI - Department of Agriculture and Rural Development, Northern Ireland
DESSAC - Decision Support System for Arable Crops
DETR - Department of Environment, Transport and the Regions
DTI - Department of Trade and Industry
EN - English Nature
FACTS - Fertiliser Advisors Certification Training Scheme
FAO - Food and Agriculture Organisation
FEPA - Food and Environment Protection Act
FPC - Fresh Produce Consortium
FWAG - Farming and Wildlife Advisory Group
GCT - Game Conservancy Trust
HGCA - Home Grown Cereals Authority
HRI - Horticulture Research International
HSE - Health and Safety Executive
IACP - Integrated Arable Crop Production Alliance
ICM - Integrated Crop Management
IPM - Integrated Pest Management
ITE - Institute of Terrestrial Ecology
LEAF - Linking Environment and Farming
LERAP - Local Environmental Risk Assessment For Pesticides
LIFE - Less Intensive Farming and Environment (Long Ashton Research Station)
MAFF - Ministry of Agriculture, Fisheries and Food
NAWAD - National Assembly for Wales Agriculture Department
NERC - Natural Environment Research Council
NFU - National Farmers' Union
NFUS - National Farmers' Union of Scotland
OECD - Organisation for Economic Co-operation and Development
PETE  -  Physico-chemical Evaluation The Environment
PSD - Pesticides Safety Directorate
RSPB - Royal Society for the Protection of Birds
SAC - Scottish Agricultural College
SAPPIO - Sustainable Agricultural Production – Precision and Input Optimisation
SERAD - Scottish Executive Rural Affairs Department
SCIMAC - Supply Chain Initiative for Modified Agricultural Crops
SNH - Scottish Natural Heritage
SQC - Scottish Quality Cereals
TASCC - Trade Assurance Scheme for Combinable Crops
TSFS - Technologies for Sustainable Farming Systems
TGWU - Transport and General Workers Union
TIBRE - Targeted Inputs for a Better Rural Environment
UKASTA - United Kingdom Agricultural Supply Trades Association
UKROFS - United Kingdom Register of Organic Farming Systems
WIIS - Wildlife Incidents Investigation Scheme
WFU - Women's Farming Union