Partial Regulatory Impact Assessment

1. Title of proposal

1.1 Food Standards Agency pesticide residue minimisation guides for five crops: apples, pears, tomatoes, potatoes and cereals.

2. Purpose and intended effect

(i) Objective

2.1 To develop crop specific pesticide residue minimisation guidance for use by all those in the industry from production through to sale.

2.2 The aims of the guides are threefold:

- to offer a consolidated source of information and guidance on pesticide residue minimisation for the five crops, drawn from examples of best practice and pesticide manufacturers' recommendations;
- to raise awareness of the issue of pesticide residues for those involved in the production, supply and marketing of the fresh produce; and
- to support and assist the food industry in successfully delivering its existing pesticide minimisation initiatives.

(ii) Timing

2.3 Following the 12 week public consultation (April-June) the crop guides will be reviewed in the light of responses. We intend to publish the residue minimisation guides in their final format by end October 2006. There are as yet no plans to update the guides in future pending the outcome of the consultation. However, the future uptake of the guides will be monitored and evaluated over the next two years.

(iii) Background

2.4 These crop guides have been produced as part of an action plan[1] to minimise pesticide residues in food. Although the FSA accepts the current risk-based approval system for pesticides and that food containing residues up to the legal Maximum Residue Level (MRL)[2] does not present a consumer health risk, the FSA also recognises that consumer preference is for reducing residues further than the current safe levels.

2.5 A key strand of the action plan is the development of specific guidance for five crops: cereals, apples, pears, potatoes and tomatoes. The idea of producing the crop guides arose from two studies commissioned as part of the Agency's action plan. These were an independent academic literature review of the options for pesticide residue

[1] FSA Board paper FSA 04/05/02, 13 May 2004, FSA Board papers FSA 03/06/04, 12 June 2003; FSA 02/06/04, 13 June 2002; and FSA 00/07/04, 14 December 2000
http://www.food.gov.uk/aboutus/ourboard/boardmeetings/

[2] The Maximum Residue Level (MRL) is a trading (not health) standard that prescribes the maximum amount of pesticide residue legally permitted. MRLs are based on the level of pesticide expected if good agricultural practice is followed and are generally well below safety limits.

reduction [3] and a study that involved a wide range of stakeholders to determine where the Agency could provide the most effective lead to reduce residues[4].

2.6 The FSA decided to focus on reducing residues in the five specific UK grown crops as each of these crops is a staple diet food that presents its own challenges to tackle specific pesticide residue issues. In addition, it was considered that UK tomatoes would provide an example of a crop where British growers have already made good progress towards minimising and almost eliminating pesticide residues in their crops.

2.7 The Agency commissioned ADAS (a company specialising in agricultural consultancy and advice) to draft the individual guides for the five crops, in consultation with the key industry stakeholders. The guides draw together examples of existing best agricultural practice, and pesticide manufacturers' recommendations, that could help reduce pesticide residues in the specific crops.

2.8 The crop guides offer consolidated information on residue minimisation, the majority of which is already in existing guidance. They provide detailed information in the following areas: the crop and its use; the production and the market; pesticides used on the crop; reasons for pesticide use; pesticide residues found on the crop; approaches to reduce pesticide residues; relevant research; knowledge and technology transfer initiatives.

2.9 Although the crop guides will be made available to all, it is acknowledged that they will have greatest impact if taken forward with UK assurance schemes such as Assured Produce Scheme and Assured Combinable Crops Standards (both part of Assured Food Standards). This is because most of the major UK retailers require their UK suppliers to be members of assurance schemes.

(iii) Rationale for government intervention

2.10 The rationale for government intervention in this area reflects the results of consumer research that show most people want to see reduced levels of pesticides in food. The FSA is the government department best placed to achieve this because it has a key role in protecting consumer's interests in relation to food.

2.11 By taking a lead on the issue of pesticide residue minimisation, the FSA has raised awareness of the issue. It is recognised that much has already been done in recent years that has been led by retailers, assurance schemes and the pesticide production industry; although this may have been inspired, at least in part, by the FSA's policy. The crop guides aim to be a source of consolidated advice, which reflects current best practice measures that producers can utilise as they choose. Government is in better position to do this as it can take a broad view of the issue. Without Government input individual retailers may produce their own initiatives but these are unlikely to be shared between retailers because pesticide reduction is a competitive issue. Additionally, consumers have a high level of trust in the Agency, which means that an FSA led initiative such as this is more likely to increase consumer confidence on this issue.

2.12 Government-backed guidance is also likely to be best placed to encourage further moves within the industry to seek technological advances and the development of new crop management systems that focus on further reduction in pesticide residues.

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[3] Scottish Agricultural College (April 2003): The Minimisation of Pesticide Residues in Food: A Review of the Published Literature
http://www.food.gov.uk/multimedia/pdfs/pesticideslitreview.pdf]

[4] ADAS (August 2003) [http://www.food.gov.uk/multimedia/pdfs/peststakeholdreport.pdf]

2.13 If the FSA had not started this initiative, then there may have been less incentive for assurance schemes such as Assured Produce Scheme, to take steps to deal with pesticide residue minimisation.

3 Consultation

(i) Within government

3.1 The Pesticide Safety Directorate (PSD), the Department of Environment and Rural Affairs (Defra) and the Environment Agency (EA) have been kept informed of the development of the FSA's pesticide residue minimisation policy, of which the guides are a key part. The EA has been supportive of this policy, as it is in line with its own policy on reducing pesticide levels in the environment. PSD was concerned that the FSA's initiative on residues may risk reducing consumer confidence in the approval process. DEFRA has been of the view that the minimisation policy was based on consumer concern and not science; that it went beyond a legal requirement; and that there could be conflict with other policies, such as DEFRA's Plant Health Division's advice to increase use of pesticides on certain seeds.

(ii) Public consultation

3.2 The Agency is carrying out a public consultation to seek views on these draft guides, in addition to holding meetings with key stakeholders who assisted in drafting the guides. The views expressed will help inform the FSA on this issue. It is hoped that the consultation will provide views on content and format that will maximise the effectiveness of the crop guides in achieving their aims.

3.3 At the start of the project the Agency held meetings with key stakeholders from the different commodity groups. These were an opportunity for the industry to raise various issues they felt were relevant to the initiative. The FSA met with the following:

- apple and pear stakeholders on 4 November 2003 (including, ADAS, English Apples and Pears, British Independent Fruit Growers Association, Worldwide Fruit Ltd, SGT Ltd, Horticulture Research International);
- potato stakeholders on 4 December 2003 (including: ADAS, DEFRA, British Potato Council, Potato Processors Association, Branston Ltd, Greenvale AP, Higgins Group, MBM Produce Ltd, Assured Produce Scheme, National Farmers Union);
- cereals stakeholders on 31 October 2003 (including: ADAS, Home Grown Cereals Authority, Association of cereal Food Manufacturers, Campden and Chorleywood Food Research Association, Brewing Research International, Maltsters Association of Great Britain, National Association of British and Irish Millers, British Oat and Barley Millers Association, Weetabix Ltd);
- tomato stakeholders on 21 October 2003 (including: ADAS, Tomato Growers Association, Wight Salads, Humber VHB)

3.4 A summary of the range of views is presented below, identifying the stakeholder meeting where these views were given.

3.5 **Summary of Stakeholder views from initial meetings:** Stakeholders felt that consumer concerns about pesticide residues were only raised when prompted by the FSA consumer research (potato stakeholder meeting). Do consumers really want food without residues especially if this were to affect quality of the product (apple and pear stakeholder meeting)? Many felt that there was a need to pull all available research, technology

transfer initiatives and best practice in the form of guidance (potato, cereals and apple and pear stakeholder meetings). The FSA was seen as a key organisation in telling the truth about production and why pesticides were used (apple and pear stakeholder meeting). The number of existing standards and the public perception of what is being achieved by retailers were felt to be confusing for consumers (potato stakeholder meeting). It was felt that residues should not be a competitive issue (potato stakeholder meeting). It was considered important for the industry to be involved in the initiative (potato stakeholder meeting), although growers would prefer to minimise publicity about the work (apple and pear stakeholder meeting).

3.6 If the guides result in reduced commercial advantage of UK produce over imported produce then a negative economic impact could follow (apple and pear and cereals stakeholder meetings). Tighter financial margins for production has resulted in reduced pesticide use over recent years (cereals stakeholder meeting). Target setting as a measure of success was rejected as it would be difficult to monitor and unpopular with industry (potato and cereals stakeholder meetings)

4. Options

4.1 This is an FSA initiative produced in response to consumer demand for reduced pesticide levels in food. The initiative is in the form of voluntary guidance and there is no scope for government legislation beyond existing rigorous legal controls to ensure safety of food with regard to pesticides.

4.2 We have identified two options relevant to this pesticide residue minimisation guidance:

> **Option 1** – Do nothing, publish no guidance and leave the issue to the industry. The consolidated information in the guidance would not be available. Industry initiatives to reduce pesticide residues would be seen as a competitive issue and therefore unlikely to be publicised nor consistent. Consumer concerns about residues may not be met.
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> **Option 2** – To publish the FSA guidance as co-ordinated advice for stakeholders to utilise as they see fit. This would provide government encouragement for work on reducing pesticide residues. It is unlikely that there will be any unintended risks associated with this option, although the take-up of the guidance by the industry cannot be guaranteed. The guidance would help address the consumer concerns raised.

5. Costs and benefits

5.1 The FSA does not envisage the crop guides having a negative cost impact on producers as they were developed with the express intention that they should be 'cost neutral'. The guides are intended for adoption on a voluntary basis as part of a wider integrated crop and pest management strategy. **Comments on financial implications of adopting any of the recommendations are welcomed.**

5.2 The cost and benefits in this section have been determined from discussions with FSA economists and informal stakeholder consultations. This section will be modified in light of information received during the consultation.

(i) Sectors and groups affected

5.3 This initiative will apply mainly to the domestic production and sale of apples, pears, cereals, potatoes, and tomatoes. The latest (May 2005) Mintel report on fruits and

vegetables quantifies the size of the UK market for potatoes, apples, pears and tomatoes at £855m, £644m, £169m, and £500m[5] respectively. Using FAO food balance sheet (latest year available) for the proportions of the UK market for the products supplied by UK producers, we infer the UK market for UK supplied produce is as follows: £650m for potatoes; £72m for apples; £19m for pears; and £40m for tomatoes. The market for UK grown cereals and cereal products has been difficult to define because cereal products often contain ingredients from different sources; comments are welcomed on this.

5.4 The initiative may potentially be of concern to the UK agrochemical industry. Although its impact is not anticipated to be significant, comments would be welcomed. UK sales for agricultural and horticultural pesticides in 2004 were £399m, according to the Crop Protection Association statistical review to December 2004.

(ii) **Racial Equality and Fairness**

5.5 Although we predict no consequences of the initiative with regard to racial equality, we welcome comments on this issue.

(iii) **Costs of the options**

Option 1- Do nothing

5.6 Under this option there would be no encouragement from government to industry to adopt pesticide residue minimisation policies. Although the major retailers will continue to have their policies on pesticides these will vary.

5.7 Assurance schemes will continue to have their policies and guidance for growers on residue minimisation, but the nature of these may be decided largely by the pressure applied from retailers on their suppliers.

Option 2 – FSA publication of the crop residue guides

5.8 The measures presented in the guides are examples of what has been identified as best practices and will only be adopted by farmers on a voluntary basis. Hence, in theory, adoption by producers will only occur if it does not generate any net costs.

5.9 In practice, however, the situation is complicated by the characteristics of the supply chains within which farmers and growers operate. The assurance schemes promoted by major retailers are increasingly important in UK agriculture, which limits the ability of farmers and growers to choose their production practices freely and simply on the basis of costs[6]. This means that if, as intended, the recommendations in the guidance are included fully or partially in the codes of practice of assurance schemes, their adoption may become a requirement for a majority of farmers and growers. It is therefore important to consider the potential costs of implementation of the recommended practices. Discussions with farmers, growers and representatives of assurance schemes, unions and commodity trade bodies highlighted three areas that are important with respect to potential cost of the initiative. **We welcome comments and suggestions on our proposals for determining the cost of the initiative**. The three areas highlighted as important for determining the cost of the initiative are as follows:

A. **Cost of increased monitoring.** Encouraging pesticide application only when a pest control problem is encountered requires farmers and growers to allocate resources to the monitoring of pest populations and diseases on a regular basis.

[5] Mintel only reports figures on all 'salad vegetables', which includes lettuce, tomatoes and peppers. For the latest year available (2004), the size of that market in the UK is £1,355m – hence we regard the figure of £500m for tomatoes as conservative.

[6] It is estimated that 80% of fresh produce bought by consumers in the UK is marketed through major retailers, whose UK suppliers are all members of the Assured Produce Scheme.

This is done by farmers and growers themselves, in conjunction with trained specialists paid to carry out this work. As this is already part of integrated crop management for apples, pears and cereals, the FSA considers it to represent a nil cost (i.e. it goes on anyway). If increased costs were generated as a result of this, these economic costs could potentially be offset by the decrease in the quantity of pesticides applied to the crops.

B. **Cost of switching to alternative or non-chemical crop protection methods.** This could involve a capital outlay for these methods. There may also be an environmental cost to using them. Any recommendation to use these methods would most likely reflect integrated crop management practices already available for the crop. Any cost could potentially be offset, at least in part, by decrease in the quantity of pesticides applied to the crops.

C. **Cost of new capital equipment** (e.g., specialised storage facilities that would reduce the need for the application of pesticides post-harvest). It is believed that, as long as the pace of change imposed on farmers and growers is not too high, the modification of the capital stock may occur as part of its normal renewal thus reducing additional costs. Cereal, apple and pear producers may benefit from making this financial investment, and the increased use of sophisticated storage facilities for these crops is already widespread. With the help of such systems the apple industry aims to achieve 'post-harvest residue free' apples in the future, if it proves to be cost effective. For cereals, insecticide use in grain storage is usually only as a last resort. It is believed that farmers could improve their on-farm grain storage facilities at relatively low cost. For the potatoes industry the potential for this type of investment is low at the present time. However, this situation might change dependent on the success of initiatives such as plant breeding for varieties that can be stored at low temperatures. **We welcome comments on these assumptions, in particular that the modification of capital stock may occur as part of normal renewal of kit.**

5.10 **Cost to the UK agrochemical industry:** There may be cost implications for the agrochemical industry associated with the publication of the crop guides if it leads to reduced pesticide use. It is also possible that the agrochemical industry may benefit from residue minimisation as a policy if alternative pesticide products are used or new products developed that leave lower residues. **Comments are welcome on the cost implications of the crop guides on the UK agrochemical industry.**

(iv) **Benefits**

Option 1- Do nothing

5.10 There would be no major additional benefits from employing option 1, other than reduced pressure to change current practice. There may be benefits to the agrochemical industry if production methods are unaltered as the *status quo* is maintained in terms of sales of agrochemicals. This could lead to less investment in development of alternative products that present fewer residue problems.

Option 2 – FSA publication of the crop residue guides

5.11 **Benefit to consumers:** The main benefit from the policy will be to help satisfy a desire from consumers for a reduction in pesticide residues. The Agency's own research

estimates that 68% (30%) of UK consumers consider it important (very important) to reduce pesticide levels[7].

5.12 **Benefit to the UK market:** There is only limited information available in order to estimate the magnitude of additional benefit from this policy in terms of how much people may be willing to pay to effect that change. Numerous academic studies, have examined consumer willingness-to-pay (WTP) in other countries for fresh produce or agricultural commodities produced using reduced or no pesticides. In general, results have shown that consumer WTP is modest, with most premiums falling in the five to ten percent range[8]. Using this information to estimate a benefit to the UK market for these products from the pesticide minimisation policy is difficult because the policy will only effect a partial reduction in pesticide residue and extrapolating from other countries is not ideal as consumer preferences are likely to differ. For these reasons the UK consumer WTP is likely to be much lower although there may still be the potential to add value to retail products. Even a one per cent premium would indicate a market benefit from the policy amounting to £8m[9] annually.

5.13 **Benefit to the environment:** It is also clear that beyond its primary objective of reducing pesticide residue, the policy may generate additional benefits for the environment. First it is anticipated that the policy may result in a decrease in the use of pesticides and associated external costs. Estimating an environmental benefit, in financial terms, is difficult but a recent review of the evidence commissioned by DEFRA concludes that (RPA, 2004):

- The impacts on ecosystems and human health of pesticide use in the UK is costed at £300m, with the bulk of that figure accounted for by the environmental cost.
- The financial cost arising from policies to deal with the externalities (e.g., drinking water treatment) amounts to approximately £130m per annum.
- Hence, the total external cost of pesticide use in the UK is in the range of £430m per annum.

Although it is not possible to estimate the decrease in pesticide use that might result from the policy, the previous figure suggests that even a slight decrease in that use could generate substantial environment benefits.

5.14 **Benefit from simplification:** The guides were intended to link together as much as possible of the available information, initiatives and best practices relating to pesticide residue minimisation so that all relevant initiatives could be found in one place. As such it could be categorised as a simplification measure and financial benefits from time saved as a result of the initiative could be determined.

5.15 **As part of the consultation we would welcome any comments and suggestions on our proposals for determining the benefit of the initiative. We would also welcome any estimates that stakeholders could provide on the number of hours reduced or saved by this initiative.**

5.16 A summary of predicted costs and benefits will be produced following consultation.

6. Small Firms Impact Test

[7] http://www.food.gov.uk/multimedia/pdfs/fsa040502.pdf
[8] Cranfield and Magnusson, 2003
[9] This is determined by applying a 1% premium to figures for UK supplied proportions of the UK market, defined in paragraph 5.2

An initial assessment of the impact on small businesses of the crop guides has been carried out. Initial soundings with representatives of small farm businesses did not identify significant impact of this initiative on small businesses in the crop areas covered by the guides. We have consulted the Small Business Service, which was happy with this approach. **We would welcome comments from small businesses on any further views they have on the possible impact of the guides.**

7. Competition assessment

A preliminary competition filter was carried out and consequently the Agency considers that there should be no substantive competition issues for the markets described in paragraph 5.2 and 5.3.

8. Enforcement, sanctions and monitoring

The main measurement of success of this initiative will be the uptake of the guidance by assurance schemes, which have their own auditing procedures, and other bodies influential to food producers. Other methods will be explored by the FSA. Enforcement and sanctions are not relevant to this initiative.

Sections 9-12

This section will be added following the consultation.

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