

Protecting England and Wales from plant pests and diseases



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
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Summary

- 1 This report focuses on the work of the Department for Environment, Food and Rural Affairs (DEFRA) in protecting England and Wales from the risks of plant pests and diseases¹ causing harm to the economy. Plant pests and diseases pose less risk to human health than animal pests and diseases, although people can be poisoned by some plant diseases. Generally, however, plant pests and diseases are not transferable to people and plants affected by them do not harm consumers. Their main impacts are economic. They affect the appearance, growth, yield and ultimately the value of farmers' and growers' produce. A 2000 economic evaluation² of the country's plant health programme estimated that £279 million of potato crops in southern England might be at risk from Colorado Beetle and £133 million of crops such as tomatoes, cucumbers and ornamental plants were at risk from Tobacco Whitefly.³



- 2 Although farmers and growers bear the primary responsibility for protecting their crops, the Department is also active in preventing, detecting and dealing with pests and diseases. It aims to maintain and promote high levels of health in arable and horticultural plants and produce, protecting the country's agricultural and horticultural industries from imported pests and diseases, and supporting domestic trade and exports. Each year, it spends £8 million on import controls and £14 million researching the diagnosis and control of pests and diseases. Its work is subject to two key international agreements⁴ banning the introduction and movement of specified harmful organisms, plants and produce from specified origins, and requiring the inspection of imports, assessment of the risks posed by pests and diseases, and designation and maintenance of pest-free or low-pest areas. The government has translated these agreements into UK legislation. To comply with the requirements of the World Trade Organisation, the Department's import controls must have a scientific basis and must not be used as a barrier to trade.

1 *The Plant Health (Great Britain) order 1993 (SI 1993 No. 1320) defines a **plant pest** as a harmful organism liable to infect a plant or plant product. Plant pests include insects, fungi, bacteria and viruses that feed on, infect or cause disease on plants or plant products. A **disease** is a condition where the normal functions of the plant are disturbed and harmed. A **pathogen** is an organism that causes disease.*

2 *An Economic Evaluation of MAFF's Plant Health Programme, ADAS Consulting Ltd and the Imperial College London, commissioned by the former Ministry of Agriculture Fisheries and Food.*

3 *Tobacco Whitefly is a serious pest which can transmit over 60 viruses that damage a wide range of plants and directly feeds on crops such as tomatoes and cucumbers.*

4 *European Union Directive 2000/29/EC and the United Nations Food and Agriculture Organisation's International Plant Protection Convention (IPPC), 1952.*

The country has a good record in preventing major outbreaks of pests and diseases, in which the Department plays a key part

- 3 The number of recorded outbreaks of pests and diseases has fluctuated, averaging 150 a year over the 8 year period 1993 to 2000 but increasing to more than 200 in 2001 and some 370 in 2002. The country has a good record, however, in containing and eradicating most outbreaks: only three economically significant pests and diseases have become established in this country in recent years. It is difficult, however, to demonstrate the extent to which this record is attributable to the Department's activities, as other factors such as the tough conditions placed by the country's major supermarket chains on the produce they will accept from producers, pesticides and the weather have a part to play. Stakeholders we consulted and respondents to the Department's customer satisfaction surveys are confident, however, in the effectiveness of the Department's measures to control and eradicate pests, facilitate exports and maintain quality standards. Farmers, growers, international organisations and trading partners have a high regard for the Department's work and its inspectors.

The Department nonetheless needs to focus more on key risks and outcomes

- 4 Although the Department has extensive knowledge about the nature and extent of risks from pests and diseases, it does not rank them in a systematic way. It does not routinely subject the control of key pests and diseases to full cost benefit analysis to assess whether the damage that they would cause if left unchecked would outweigh the costs of keeping them out. Neither the Department's outcome measures used by the Department to report on its annual performance, nor its 'lessons learnt' reviews carried out after all major outbreaks, record systematically the impact that outbreaks have had on yields and farmers' finances or the costs incurred in containing and eradicating them. Nor do they record the level of farmers' and growers' losses prevented in dealing with outbreaks, thereby understating the impact of the Department's work.
- 5 Farmers and growers have to pay for any crops affected by a pest or disease to be treated or destroyed and do not receive any compensation from the government for the losses incurred. In the United States there is a government-subsidised insurance programme, under which the government subsidises up to two-thirds of farmers' and growers' insurance premiums. Insurance cover against pests and diseases - with or without government subsidy - remains unavailable in England and Wales.
- 6 The Department has to carry out inspections to meet the requirements of international agreements. It sets five annual targets, depending on the items to be inspected. International agreement or the demands of the market dictate the level of two of these targets. The Department can therefore set three targets at levels it considers to be appropriate, in each case being permitted by international agreements to inspect all, or a representative sample of, the items covered by the targets. The Department chooses to inspect all (some 4,000) consignments of plants, plant cuttings and tissue cultures imported from

non-European Union countries each year, considering that they pose the greatest risk of bringing pests or diseases into this country. It aims to inspect some 1,100 (around 6 per cent of) consignments of plant produce imported from outside the European Union and to carry out 40,000 inspections of plants, planting material and plant produce being moved within the European Union.

- 7 Data were not readily available on the total number of consignments being moved, which we could then have used to help us assess the reasonableness of the Department's target of inspecting 40,000 such consignments each year. It was not clear to us how statistical advice influenced the setting of three-quarters of this target, while the other quarter was based on the level of inspector resources that were expected to be available rather than on any risk or statistical analysis. Some inspectors considered that this target was too high, while some stakeholders considered that inspectors had too much work to do. The Department relies on its inspection regime to maintain this country's status as a "protected zone", recognised by the European Union as being free from specified key pests and diseases. The European Union has not specified, however, how many inspections it requires to maintain such status. Nor does the Department know how its inspection coverage compares with that of other countries. It is therefore difficult to know whether the Department is carrying out the right number of inspections.
- 8 In 2001-02 and 2002-03, few inspections detected pests or diseases. In both years, the aggregate detection rate was only a little over 2 per cent. Of the some 64,000 inspections carried out in 2002-03, for example, only 1,400 detected a pest or disease. Within these aggregate figures, however, detection rates varied depending on the items being inspected. The paucity of detections could be due to the absence of pests and diseases within the general population of items being inspected, or to poorly targeted and/or poor quality inspections. The Department does not analyse detection rates and was therefore unable to explain whether low detection rates indicate good standards of plant health or the limits of its ability to detect pests and diseases.
- 9 Inspectors do not have access to complete and timely information about imports to allow them to select those that are highest risk and inspect them on a timely basis so that they may detect any pests or diseases before they can spread. In the last two years, the Department has failed to meet its key target of inspecting all plants, plant cuttings and tissue cultures imported from non-European Union countries within two weeks of their entry into this country - by which time, most of these high risk items have been planted out and therefore risk spreading any pests and diseases that might be affecting them. Not all relevant inspectors have direct access to the dedicated link to HM Customs and Excise's CHIEF computer system, which records all imports arriving in this country, and have to rely instead on informal arrangements to find out about imports. None of the inspectors at Heathrow Airport and Felixstowe Dock retained the necessary information to demonstrate that the riskiest consignments had been inspected.
- 10 Without information about the number of consignments being moved within this country or being imported from, or exported to, other European Union countries, or documentation to show that the riskiest have been inspected, it is difficult to see how the Department can focus its inspection strategy effectively. This gives rise to concern that the low rate at which inspections detect pests and diseases could be attributable to poorly targeted inspections.

The Department's work needs to be better co-ordinated, particularly with industry and with counterparts in other countries

- 11 The Department recognises that it needs to put in place an over-arching strategy to co-ordinate the variety of plant-health work that takes place within the Department and in its executive agencies and other bodies. The main public bodies funding plant health research lack a coherent national strategy to co-ordinate their work. The Department's research also needs to be better co-ordinated with that of its counterparts in Europe. The means for transferring knowledge and technologies to the industry are inadequate, resulting in a poor return on much of the public monies invested in research and development.

- 12 Plant health authorities in the United States and New Zealand place more emphasis on reducing risks at the point of origin, by working with producers in exporting countries to ensure that their exports are pest and disease-free. The Department's inspectors have visited exporting countries where there have been specific problems with the country's exports to England and Wales, while the European Commission also visits non-European Union countries that it considers are priorities for tackling the risk of pests and diseases being imported into member states and has also undertaken collaborative exercises, involving inspectors from member states' plant health authorities, in countries where there have been persistent problems. Some exports, however, such as bonsai plants from Japan and China, remain key sources of imported pests or diseases into England and Wales and have not been covered by either the Department's or the Commission's programme of visits.

- 13 Stakeholders we consulted considered that risks were increasing due to a variety of developments, such as new restrictions on the use of pesticide. The main pesticides used to combat *Thrips palmi*, for example, are no longer available because they are prohibited from use in the European Union. Any outbreak might therefore be more difficult to contain and eradicate in future. The Department's plant health teams and its Pesticides Safety Directorate need to work more closely together to co-ordinate the phasing out of key pesticides alongside the development and use of other means of control, such as pest-resistant crops.



- 14 The Department also needs to give more attention to where its own responsibilities end and where those of the industry start. For example, the Department recognised at an early stage of the outbreak of *Rhizomania* in 1992 that its priority was to contain the disease and stop it spreading until the industry had developed a range of sugar beet varieties tolerant to the disease. The Department did not, however, make it sufficiently clear that it was looking to the industry to develop such varieties within a reasonable timescale. The industry was therefore unready when the Department lifted its controls in 2002.

The Department does not have sufficient means to assure the quality of inspectors' work

- 15 Inspectors carry out most inspections on their own. The Department does not have a peer review system to provide assurance on the quality of inspectors' work. The international air freight industry operates night and day, seven days a week. Imports can arrive late at night and at weekends and, because of their perishable nature, consignments may leave the airport within a few hours of arrival. However, inspectors' normal working patterns follow typical working hours from Monday to Friday. Consignments may therefore arrive at ports of entry late at night or at weekends and leave again before inspectors have had a chance to inspect them.

The Department needs to give more attention to ensuring that it has the necessary scientific capacity in the coming years

- 16 A Science Audit of the Central Science Laboratory in February 2002 found that the Laboratory was dependent on the knowledge and expertise of key individuals, which would be lost when the scientists retired unless steps were taken to pass on expertise and know-how. Stakeholders also expressed concern that the availability of appropriate scientific advice more generally might decline in the coming years as plant health specialists retired and fewer young scientists entered the field.

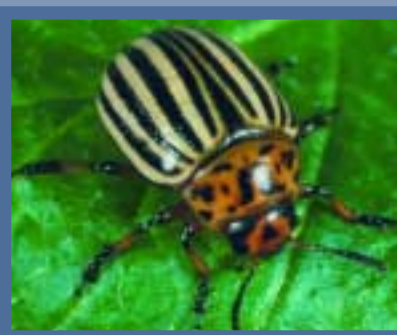


Recommendations

17 On the basis of our findings, we make the following recommendations:

Focusing on key risks and outcomes

- (i) The Department should rank key pests and diseases according to how much of a risk they pose to the agricultural or horticultural sectors of the economy, as a means of targeting its resources where the risks are greatest.
- (ii) The Department should routinely subject control of key pests and diseases to full cost benefit analysis to confirm whether the damage they would cause if left unchecked would outweigh the costs of keeping them out of this country or of containing or eradicating them.
- (iii) The Department should include in its 'lessons learnt' reviews of key outbreaks the impact that outbreaks have had on farmers' yields and finances, and the costs of containing and eradicating them. It should also record the level of losses that the Department has prevented in dealing with outbreaks, to demonstrate the full effectiveness of its work.
- (iv) The Department should examine, with the industry and insurers, the scope for insurance programmes to be introduced to help protect farmers and growers against losses caused by plant pests and diseases.
- (v) The Department should review the reasons why some inspections detect few plants and diseases, focusing in particular on whether inspections are being poorly targeted or whether the level of inspection activity is disproportionate to the attendant risks.
- (vi) The Department should consider whether it is carrying out the right number of inspections, in light of statistical advice, risk analysis, low detection rates and the coverage required to maintain the country's protected zone status.
- (vii) The Department should, as a matter of priority, give relevant inspectors access to the dedicated link to HM Customs and Excise's CHIEF computer system and complete its work with HM Customs and Excise to provide inspectors with wider access to reliable and timely information about imports.



Co-ordination with industry and counterparts in other countries

- (viii) In developing its over-arching strategy for co-ordinating plant health work within and outside the Department, the Department should incorporate measures for co-ordinating plant health research and for transferring knowledge and technologies to the industry so that the returns on public monies invested in research and development are maximised.
- (ix) The Department should consider whether more emphasis on reducing risks at their source, by working with producers in non-European Union countries to ensure that their exports to this country are pest and disease-free, would provide more effective risk management than the current level of inspections of imports.
- (x) The Department's plant health teams should work more closely with their departmental colleagues in the Pesticides Safety Directorate to co-ordinate the phasing out of key pesticides with the development and use of other means of control, such as pest-resistant crops.
- (xi) The Department should clarify where its responsibilities end and where those of the industry start, when responding to the threats posed by an outbreak.

Assuring the quality of inspectors' work

- (xii) The Department should introduce a peer review system to provide assurance on the quality and efficiency of inspectors' work.
- (xiii) The Department should assess the extent to which import consignments may avoid inspection by arriving at ports of entry late at night or at weekends and determine the need to carry out inspections whenever imports arrive in this country.

Ensuring the necessary scientific capacity

- (xiv) The Department should take the lead in ensuring that there will be an adequate supply of young scientists to replace plant health specialists as they retire over the coming years.

