

An Update on *Phytophthora ramorum* in European Nurseries¹

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Abstract

Emergency phytosanitary measures to prevent the introduction into and spread within the European Union (EU) of *Phytophthora ramorum* Werres, De Cock & Man in 't Veld. have been in place since 2002. Surveillance across the EU, has confirmed the presence of *P. ramorum* on nurseries and retailers in 15 member states. *Phytophthora ramorum* has been confirmed on 14 plant genera at nurseries and retailers, with 96 percent findings being made on *Rhododendron*, *Viburnum* and *Camellia*, which are the three genera currently regulated for internal movement within the EU. More detailed analysis of data from England and Wales shows that rigorous enforcement of the emergency measures can result in very encouraging reductions in compliance infringement both in terms of documentary errors and findings of *P. ramorum* on certificated material. Furthermore, the percentage of inspections positive for *P. ramorum* and the number of outbreaks at nurseries and retailers has shown similar and encouraging reductions between 2002 and 2006. *P. ramorum* has, however, continued to be found in the EU on commercially-traded plants, which indicates that the emergency phytosanitary measures have not been completely effective. Any future revisions to the measures need to take account not only of emerging results from on-going research and surveillance but also of compliance costs to official services and to the commercial nursery stock industry in relation to benefits.

Keywords: *Phytophthora ramorum*, sudden oak death, European Union, emergency phytosanitary measures.

Introduction

Emergency phytosanitary measures to counter the threat posed to the European Union (EU) from *Phytophthora ramorum* were introduced in September 2002 (Anonymous 2002). These measures were amended in April 2004 (Anonymous 2004 a, b) and again in March 2007 (Anonymous 2007). In summary, the current measures require member states of the EU to conduct official surveys, to apply import controls and internal movement controls on *Rhododendron* spp. L., *Viburnum* spp. L. and *Camellia* spp. L. and to require that eradication measures are taken against findings of *P. ramorum* at places of production. Nurseries are subject to at least two official inspection visits to confirm place of production freedom, and any findings of *P. ramorum* require further eradication measures. The latest revised eradication measures consist of the destruction of infected plants, susceptible plants in a 2 m radius of infected plants and destruction of associated growing media. Appropriate hygiene measures must also be applied to the standing surface. Movement controls are also required on all susceptible plants in a 10 m radius of infected plants and on any remaining plants in the affected lot. These plants must be held for at least 3 months, during which they must not be treated with any anti-*Phytophthora*

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fungicides, and they must be visually inspected at least twice to confirm freedom from *P. ramorum*. All other susceptible plants on the premises must also be subject to official inspection. Consignments of *Rhododendron*, *Viburnum* and *Camellia* moving within the EU must be accompanied by a “plant passport”, which is in effect an official document confirming that the plants comply with required official measures.

This paper provides an initial analysis of the effect of these measures on the prevalence of *P. ramorum* during the period 2004 to 2006.

Results

European Union

Survey results of nurseries and retail premises for the years 2004, 2005 and 2006 show that *P. ramorum* has been found on plant species in the following genera: *Rhododendron*, *Viburnum*, *Camellia*, *Pieris*, *Kalmia*, *Leucothoe*, *Magnolia*, *Osmanthus*, *Laurus*, *Salix*, *Taxus*, *Arbutus*, *Hamamelis*, and *Syringa*. The incidence of findings on individual genera is not available for the EU but data from England and Wales for the same period show that 96 percent of findings of *P. ramorum* at nurseries and retail premises have been on *Rhododendron* (47 percent), *Viburnum* (41 percent) and *Camellia* (8 percent). Results also show that *P. ramorum* is present in the following EU countries: Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland, Slovenia, Spain, Sweden, and the United Kingdom. The results show that a fairly consistent survey regime, in terms of visual inspections and laboratory testing of samples, has been maintained across the EU (fig. 1), and encouragingly there has been a steady reduction in the number of new outbreaks on nurseries and retailers from 255 in 2004, to 203 in 2005 and to 108 in 2006.

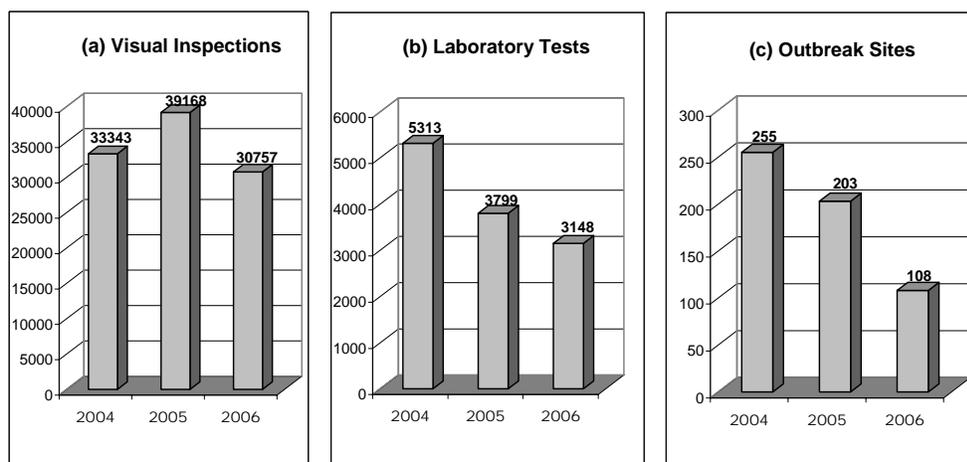


Figure 1—EU Nursery and retailer survey results 2004-2006. Number of (a) Visual Inspections, (b) Laboratory Tests and (c) Outbreak Sites.

England and Wales

More detailed data are available for England and Wales. Over the period 2003 to 2006, the incidence of documentary infringements (where an infringement represents either the absence of a “plant passport” or an incorrect “plant passport”) fell from 109 in 2003 to 5 in 2006, a reduction of 95 percent (fig. 2); findings of *P. ramorum* on

“plant passported” consignments fell from 128 in 2003 to 20 in 2006, a reduction of 84 percent (fig. 3), and the percentage of inspections that were positive for *P. ramorum* fell from 2.7 percent in 2003 to 0.8 percent in 2006 (fig. 4). The number of outbreaks of *P. ramorum* at nurseries and retailers in England and Wales has also reduced over the period, from a peak of 161 in 2003 to 34 in 2006 (fig. 5).

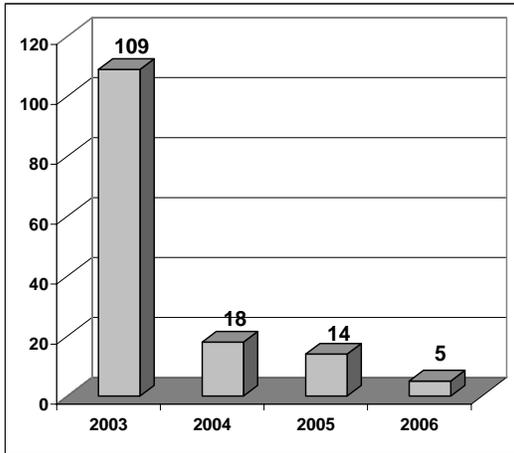


Figure 2—Number of Documentary Infringements in England and Wales (2003-2006).

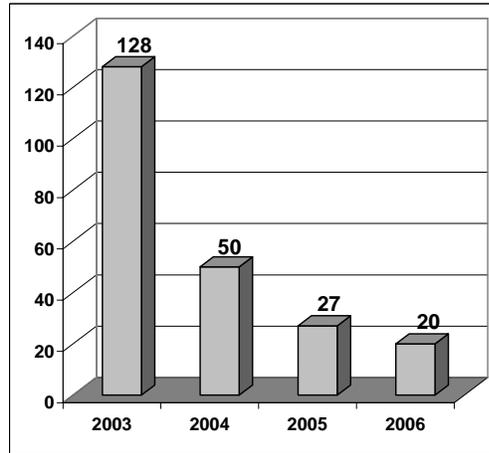


Figure 3—Number of findings of *Phytophthora ramorum* on "Plant Passported" consignments in England and Wales (2003-2006).

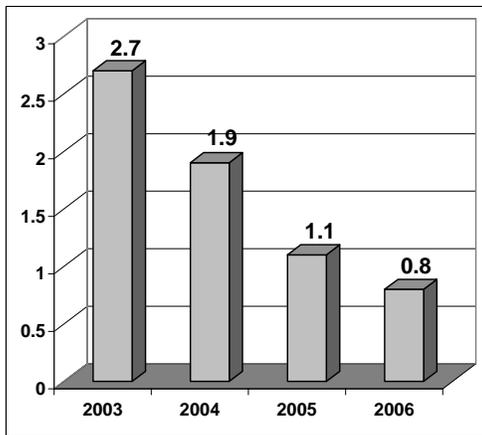


Figure 4—Percentage of inspections positive for *Phytophthora ramorum* in England and Wales (2003-2006).

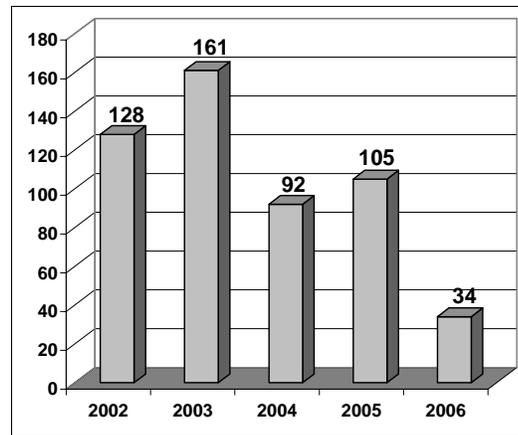


Figure 5—Number of outbreaks at nurseries and retailers in England and Wales (2002-2006).

Discussion

The tentative conclusion of this trend analysis is that the required official measures can, if rigorously applied as they have been in the England and Wales, reduce very significantly the incidence of *P. ramorum* moving on commercially traded plants. The measures, however, have not been completely effective, and *P. ramorum* has continued to be found at nurseries and retailers in many countries of the EU. It is hoped that results of on-going research and surveillance will enable the measures to

be refined in order to increase their effectiveness. Some support to the importance of continued action on places of production is provided by results emerging from epidemiological modelling studies on *P. ramorum*. These results indicate a “scale-free” network, for which it is postulated that action at the critical “nodes” (in other words, the places of production) will be highly effective at limiting future spread (Jeger and others 2007). Any future revision must also take account of the high costs of compliance to official services and to the commercial nursery stock industry in relation to benefits to the trade and to the environment.

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