

Bygythiad i goetiroedd, gweunydd a gerddi hanesyddol
A threat to our woodlands, heathlands and historic gardens

Phytophthora kernoviae



Cancr ar foncyff ffawydden aeddfed, ger rhododendron heintiedig
Ffoto gyda diolch i Forest Research
Canker on the trunk of a mature beech tree, next to an infected rhododendron. Photo courtesy of Forest Research

Beth yw e a ble mae i'w weld?

Mae *Phytophthora kernoviae* yn bathogen difrifol ar blanhigion sy'n heintio coed a llwyni yng nghoetiroedd, gweunydd a gerddi Prydain. Cafodd y pathogen ei weld y tro cyntaf ym mis Hydref 2003 mewn gerddi coediog hanesyddol yng nghanol Cernyw, lle roedd llwyni rhododendron mawr a choed ffawydd i'w gweld yn marw heb reswm amlwg. Yn sgil ymchwil gan Fera a Forest Research, cafwyd hyd i organeb tebyg i ffwng nad oedd erioed wedi'i ddisgrifio o'r blaen. Rhoddwyd yr enw *Phytophthora kernoviae* arno (o Kernow, yr enw Cernyweg am Gernyw).

Ers hynny, mae wedi'i weld mewn coedlannau, gweunydd, gerddi ac ambell feithrinfa, yn bennaf yn Ne Orllewin Lloegr; ond hefyd yn yr Alban, Iwerddon a Seland Newydd. Mae cofnodion hanesyddol yn awgrymu ei fod wedi bod yn Seland Newydd ers o leiaf y 1950au.

What is it and where is it found?

Phytophthora kernoviae is a serious plant pathogen causing diseases of trees and shrubs in UK woodlands, heathlands and managed gardens. The pathogen was first discovered in October 2003 in historic woodland gardens in the heart of Cornwall, where both large rhododendron bushes and beech trees appeared to be dying from an unknown cause. Further investigations by Fera and Forest Research revealed a previously undescribed fungus-like organism. It has now been named *Phytophthora kernoviae* (derived from Kernow, an old Cornish name for Cornwall).

Since it was first detected, there have been findings in woodlands, heathlands, gardens and a small number of nurseries principally in South West UK; however there have also been findings in Scotland, Ireland and New Zealand. Historic records suggest it has been in New Zealand since at least the 1950s.

Pam poeni ac ar ba blanhigion y mae'n byw?

Cafwyd hyd i *P. kernoviae* am y tro cyntaf wrth chwilio am bathogen arall, *Phytophthora ramorum*. Roedd *P. kernoviae* yn achosi malltod a gwywiad helaeth ar ddail rhododendron, a chancrau mawr necrotig, rhai ohonynt yn llifo, ar goed ffawydd. Mae symptomau niweidiol y pathogen i'w gweld hefyd ar lus (*Vaccinium myrtillus*) ar weundir a choetir. Mae planhigion a choed addurnol mewn gerddi hanesyddol hefyd yn cael eu heintio. Mae maint y niwed i goed, llwyni a phlanhigion y gweunydd a chyflymder ei ledaeniad ar y safleoedd sy'n cael eu heintio, yn golygu bod y pathogen hwn yn fgygythiad difrifol i goetiroedd, gweunydd a gerddi.

Ers Ebrill 2010, mae *P. kernoviae* wedi'i weld yn heintio ac weithiau'n lladd y dail ar *Rhododendron ponticum* (a hybridau *Rhododendron*), *Drimys winteri*, *Gevuina avellana* (collen Chile), *Hedera helix*, *Ilex aquifolium*, *Liriodendron tulipifera* (coeden diwlip), *Lomatia myricoides*, *Magnolia* spp. *Michelia doltsopa*, *Pieris formosa*, *P. japonica*, *Podocarpus salignus*, *Prunus laurocerasus*, *Quercus ilex* (derwen fythwyrdd), *Sequoidendron giganteum* a *Vaccinium myrtillus*. Mae hefyd yn heintio rhisgl aeddfed ar goed *Fagus sylvatica* (ffawydd) a *Quercus robur* (Derw mes coesynnog), er hyd yn hyn dim ond tua 70 o goed sydd wedi'u gweld wedi'u heintio. Yn Seland Newydd, mae coeden yr afal cwstard (*Annona cherimola*) hefyd yn lletya'r pathogen.

Why the concern and what are the hosts?

P. kernoviae was first detected during official surveys for another plant pathogen, *Phytophthora ramorum*. *P. kernoviae* was causing extensive leaf blight and dieback of rhododendron and large necrotic, occasionally bleeding cankers on several beech trees. The pathogen is also causing damaging symptoms to bilberry (*Vaccinium myrtillus*) in heathland and woodland. Ornamental plants and trees in historic managed gardens have also become infected. The extent of the damage to trees, shrubs and heathland plants and the apparent speed of infection at the affected sites show that this pathogen is a serious threat to woodland, heathland and garden environments.

As of April 2010, *P. kernoviae* has been found infecting and in some cases killing the foliage of *Rhododendron ponticum* (and *Rhododendron* hybrids), *Drimys winteri*, *Gevuina avellana* (Chilean hazelnut), *Hedera helix*, *Ilex aquifolium*, *Liriodendron tulipifera* (tulip tree), *Lomatia myricoides*, *Magnolia* spp. *Michelia doltsopa*, *Pieris formosa*, *P. japonica*, *Podocarpus salignus*, *Prunus laurocerasus*, *Quercus ilex* (holm oak), *Sequoidendron giganteum* and *Vaccinium myrtillus*. It has also been found to infect mature bark on trees of *Fagus sylvatica* (European beech) and *Quercus robur* (English oak), although currently only about 70 trees have been found with this form of infection. In New Zealand, the custard apple tree (*Annona cherimola*) is also a host.

Beth yw'r symptomau?

Ar lwyni:

***Rhododendron* (*R. ponticum*, *R. catawbiense*, *R. yakushimanum* a hybridau)**

Mae'r pathogen i'w weld amlaf ar *R. ponticum* a hybridau. Mae'r symptomau cynnar ar y dail yn cynnwys duwch ar goesyn y dail sy'n aml yn ymestyn at fon y ddeilen. Gall y briw necrotig hwn ymestyn eto ymhellach i'r ddeilen, ac ambell waith, gall dduo'r ddeilen gyfan. Weithiau serch hynny, dim ond blaen y ddeilen sy'n duo. Yr un yw'r effaith ar ddail hen a dail ifanc, ac yn wahanol i fwyafrif yr heintiau *Phytophthora* ar rododendron, mae'r dail yn aml yn disgyn o fewn rhai wythnosau. Yn aml, mae'r egin yn gwywo ac mae chancrau yn ymddangos. Os ceir cancr yn amgylchynu cangen, bydd y dail uwchlaw'r cancr yn gwywo. O dan amgylchiadau difrifol iawn, bydd y llwyn cyfan yn marw. Mae heintiadau ar y dail a'r coesau'n gallu ymddangos unrhywle, yn isel neu'n uchel, ar lwyn rhododendron.

Pieris* spp. *Michelia doltsopa*, *Hedera helix*, *Ilex aquifolium* a *Prunus laurocerasus

Gwelir yr un math o falltod ag a welir ar ddail rhododendron. Nodwedd o'r haint ar *M. doltsopa* yw briwiau ar flaen y ddeilen sy'n tyfu ar hyd ymyl y ddeilen ac i gnawd y ddeilen ei hun. Mae briwiau necrotig ar ddeilen fel arfer o liw brownddu tywyll. Mae'r briwiau ar ddail rhywogaethau *Pieris* yn frown golau i liw rhwd. Mae'r necrosis yn symud tuag at ac ar hyd wythien ganol y ddeilen gan achosi malltod trawiadol ei olwg. Hyd yma, yr unig ran o'r *H. helix* sydd i'w weld yn cael ei heintio yw'r goes; ar *I. aquifolium*, briwiau necrotig ar y dail; ac ar *P. laurocerasus*, gwelir haint ar y dail a'r coesynnau.

What are its symptoms?

Shrub hosts:

***Rhododendron* (*R. ponticum*, *R. catawbiense*, *R. yakushimanum* and hybrids)**

The majority of findings have been on *R. ponticum* and rhododendron hybrids. Early leaf symptoms include a blackening of the leaf petiole that often extends into the base of the leaf. This necrotic lesion may progress further into the leaf tissue and in extreme cases affect the whole leaf. Occasionally, however, only blackening of the leaf tip is observed. Both old and young leaves appear to be affected equally and, unusually for a *Phytophthora* infection of rhododendron, leaves often fall within a few weeks. Shoot dieback and cankers frequently occur and where these girdle the stem tissue, the leaves above the lesion wilt. In severe infections, the whole bush may be killed. Leaf and stem infections can be found at any height or position on a rhododendron bush.

Pieris* spp. *Michelia doltsopa*, *Hedera helix*, *Ilex aquifolium* and *Prunus laurocerasus

Similar leaf blight symptoms to *Rhododendron* are seen. Infection on *M. doltsopa* is characterised by drip tip lesions on the leaves that progress along the leaf margins and into the tissue of the leaf blade. Necrotic leaf tissue is characteristically a dark black-brown colour. Typically lesions on leaves of *Pieris* species are a light tan to rusty brown colour. Necrosis progresses directly towards and along the midrib vein causing a visually striking leaf blight. To date, only stem infection has been observed on *H. helix*; dark necrotic lesions on leaves of *I. aquifolium* and both leaf infection and stem dieback on *P. laurocerasus*.



Egin yn gwywo a necrosis ar ddail rhododendron
Rhododendron shoot dieback and leaf necrosis



Gwywiad ac egin tyfu rhododendron yn gwywo
(sylwch fel mae'r brif wythïen a blaen y ddeilen wedi troi'n ddu)
Rhododendron terminal shoot wilt (note blackening of midrib and leaf tip)



Necrosis ar ddail *Pieris* spp
Pieris spp leaf necrosis



Necrosis ar ddail *Michelia doltsopa*
Michelia doltsopa leaf necrosis

Vaccinium myrtillus

Ym mis Tachwedd 2007, gwelwyd y *P. kernoviae* am y tro cyntaf ar *Vaccinium myrtillus* (llus) yng Nghernyw. Ers hynny, gwelwyd llus wedi'u heintio gan *P. kernoviae* ar bedwar safle arall yng Nghernyw ac mae'n lledaenu ledled ardal yr haint. Mae'r pathogen wedi'i weld hefyd wedi heintio llus ar Ynys Arran. Mae'r symptomau cyntaf yn cynnwys briwiau brownddu ar y dail ac ar goesynnau gwyrdd y planhigyn. Pan geir achos difrifol, mae'r lleiniau o *Vaccinium* necrotig brown i'w gweld yn amlwg yng nghanol y planhigion iach. Mae'r haint yn gallu cael ei ledaenu i bob rhan o'r ardal yr effeithir arni ond fe all ddilyn llwybrau. Gallai heintiad difrifol ladd planhigyn.

Vaccinium myrtillus

In November 2007, *P. kernoviae* was found for the first time on *Vaccinium myrtillus* (Bilberry) in Cornwall. Since then *P. kernoviae* affecting this host has been detected at a further four separate sites in Cornwall and is spreading across the affected areas. The pathogen has also been found affecting bilberry on the Isle of Arran. Early symptoms include necrotic black-brown lesions on the leaves as well as on the green stems of plants. When infection is severe on a site, then patches of brown necrotic *Vaccinium* are visible amongst healthy plants. Infection can be distributed throughout an affected area or may follow paths. Severe infection will kill the plants.



Briwiau necrotig ar goesynnau *Vaccinium*
Necrotic stem lesions on *Vaccinium*

Ar goed:

Ffawyddden (*F. sylvatica*)

Y ffawyddden yw'r goeden yr effeithir arni fwyaf gan *P. kernoviae*. Y symptomau cyntaf yw briwiau diferol ar y boncyff, unrhyw le o'r llawr i fyny hyd at 12m. Mae'r nodd sy'n diferu fel arfer yn frown tywyll neu'n ddu-las, ac yn debyg i rai *P. ramorum*. Oddi tano, yn y rhisgl mewnol, mae briwiau byw oren-binc i binc-frown i'w gweld weithiau. Weithiau mae'r cancrau'n amgylchynu boncyff y goeden, ac mae hynny'n ei lladd. Mae briwiau hŷn yn pantio.

Tree hosts:

European beech (*F. sylvatica*)

Beech is the main species of tree affected by *P. kernoviae*. Initial symptoms are bleeding lesions on the trunk, and these may be found anywhere from ground level to up to 12m. The bleeding is usually dark brown to blue-black and similar to symptoms caused by *P. ramorum*. Underneath, orange-pink to pinky-brown active lesions in the inner bark are visible. Sometimes girdling of the entire trunk can occur and the tree is killed. Older lesions may appear sunken.



Cancr diferol ar ffawyddden (*F. sylvatica*)
Bleeding canker on European beech (*F. sylvatica*)



Briw diferol ar dderwen mes coesynnog (*Q. robur*).
Ffoto gyda diolch i Forest Research
Bleeding lesion on English oak (*Q. robur*).
Photo courtesy of Forest Research

Coeden diwlip (*Liriodendron tulipifera*)

Dim ond un goeden wedi'i heintio sydd wedi'i gweld hyd yma ond gall symptomau'r clefyd ymddangos ar y dail, yr egin a'r boncyff. Mae llawer o friwiau diferol yn ymfurfio ar y boncyff, o'r llawr i fyny hyd at 9m. Mae briwiau mewnol yn amrywio o liw siocled gwelw i liw siocled tywyll a du-las. Nid yw'r briwiau'n tueddu i dyfu'n fwy na rhyw 15x20cm ac mae'r rhisgl yn troi'n gwrymog iawn oherwydd nifer y briwiau. Gall briwiau dyfu hefyd ar y dail, gan amlaf ar flaen y ddeilen yn unig (tua 10-15mm o hyd) ac ar yr ymylon. Mae'r cnawd necrotig yn sychu'n lliw du tywyll. Mae'r egin hefyd yn gwywo ac mae egin heintiedig yn colli'u dail.

Tulip tree (*Liriodendron tulipifera*)

Only one diseased tree has been found to date but disease symptoms can occur on foliage, shoots and trunk. Multiple bleeding lesions are formed on the trunk from ground level up to 9m. Internal lesions range in colour from pale chocolate to dark chocolate to blue-black. Lesions tend to be limited in size (approximately 15x20cm) and the bark becomes highly corrugated as a result of the multiple lesions. Lesions can also develop on leaves; there are fairly restricted to leaf-tips (approximately 10-15mm in length) and on the leaf margins. The necrotic tissue dries out to a dark black colour. Shoot dieback also occurs and infected shoots are defoliated.



Cancr diferol ar foncyff coeden diwlip (*Liriodendron tulipifera*).

Ffoto gyda diolch i Forest Research

Bleeding canker on the trunk of a Tulip tree (*Liriodendron tulipifera*)

Photo courtesy of Forest Research

Derwen fytholwyrdd (*Q. ilex*)

Briwiau a gwywiad difrifol ar ddail necrotig, yn gyfangwbl ar egin epicormig. Nid oes tystiolaeth bod cancrau pantog na diferol wedi'u gweld.

Holm oak (*Q. ilex*)

Severe necrotic leaf lesions and dieback associated entirely with epicormic shoots. No evidence of sunken or bleeding cankers has been observed.



**Symptomau ar ddeilen derwen fythwyrdd
Symptoms on holm oak leaf**

Magnolia spp.

Mae symptomau nodedig yn ymddangos ar ddail heintiedig. Gall heintiadau ymddangos unrhyw le ar wyneb y ddeilen, hynny ar ffurf blotiau necrotig brown tywyll niferus gan greu brychni ar wyneb y ddeilen. Mae tuedd i'r blotiau uno a datblygu tuag at y wythien ganol. Mae'r brychni'n dod yn fwy amlwg wrth i'r briwiau ddatblygu. Gallai fod ymylon onglog ar y brychni ac mae'r cnawd di-haint rhwng y darnau necrotig yn troi'n gloritig. Mae'r heintiadau ar ymyl y ddeilen yn sychu ac yn ffurfio ymyl sych caled. Mae coesau'r dail yn gallu dioddef ac mae'r clefyd yn aml yn ymestyn at fon y ddeilen ar ôl i goesyn y ddeilen gael ei heintio. Mae blagur hefyd yn gallu cael eu heintio gan droi'n lliw llwyd khaki golau.

Magnolia spp.

Distinctive symptoms are found on infected foliage. Infection occurs anywhere on the leaf surface and multiple infections are evident as numerous dark brown necrotic patches, giving leaves a spotty appearance. There is a tendency for the necrotic spots to merge and develop towards the midrib. Leaves become conspicuously mottled when lesions are well developed. The mottling may have angular edges and uninfected tissue between necrotic areas becomes chlorotic. Infections that take place at the leaf margin cause the margin to collapse and form a hard dry rim. The petioles can be infected and disease often progresses along the leaf base following petiole infection. Buds can also become diseased and turn light khaki grey.



Heintiadau niferus ar fagnolia.
Ffoto gyda diolch i Forest Research
Multiple infections on magnolia.
Photo courtesy of Forest Research

Mae'r rhestr ddiweddaraf o'r planhigion lletya i'w gweld ar wefan Fera yn
<http://www.defra.gov.uk/fera/plants/plantHealth/documents/kernhost.pdf>

The most recently-updated list of known hosts is available on the Fera website at
<http://www.defra.gov.uk/fera/plants/plantHealth/documents/kernhost.pdf>

Sut mae'n datblygu ac yn lledaenu?

Mae *P. kernoviae* yn cynhyrchu strwythurau atgenhedlu tebyg i rai'r *P. ramorum*. Mae sborau heintus (söosborau) yn cael eu cadw mewn sborangia ac yn cael eu gwasgaru o ddeilen i ddeilen ac o blanhigyn i blanhigyn yn niferion glaw yn tasgu, glaw yn cael ei chwythu gan wynt, tarth, wrth ddwrhau ac o bosibl mewn dŵr daear. O dan amodau addas, bydd pob sborangium yn rhyddhau söosborau fydd yn nofio ac yn mynd i feinwe planhigion. Mae'r heintiad yn fwy tebygol o ddigwydd trwy glwyfau neu agoriadau naturiol fel y stomata a'r lentiselau. Mae'r organeb wedyn yn tyfu trwy'r cnawd heintiedig gan ladd celloedd y planhigyn ar ei ffordd, gan gynhyrchu yn y pendraw symptomau necrotig gweladwy'r clefyd. O dan amodau addas, mae atgenhedlu anrhywiol yna'n digwydd ac mae sborangia newydd yn cael eu cynhyrchu, gan felly gwblhau cylch bywyd *P. kernoviae*.

Mae rhai *Phytophthora* yn goroesi cyfnodau anffafriol fel hafau twym a gaeafau oer ar ffurf sborau hir eu hoes o'r enw chlamydosborau. Nid yw'r rhain wedi'u gweld gyda *P. kernoviae*, yn y maes nac yn y labordy. Math arall ar sbôr yw'r sbôr rhywiol neu'r öosbôr. Mae hwn hefyd yn gyfrwng goroesi i nifer o *Phytophthora*. Mae *P. kernoviae* yn eu cynhyrchu ar blanhigion sydd wedi'u heintio'n naturiol.

Mae'n cael ei wasgaru'n bellach trwy gael ei gario ar blanhigion heintiedig, o bosibl yn y cyfrwng tyfu ac mewn pridd sy'n cael ei gario ar gerbydau, peiriannau, ar esgidiau ac ar anifeiliaid.

How does it develop and spread?

P. kernoviae produces similar reproductive structures to *P. ramorum*. Infective spores (zoospores) are contained within sporangia and can be transported from leaf to leaf and plant to plant via rain-splash, wind-driven rain, mist, irrigation or possibly in ground water. Under suitably moist conditions, each sporangium will release swimming zoospores, which penetrate susceptible host material. Infection is more likely via wounds or natural openings such as stomata and lenticels. The organism then grows through the infected tissue, killing plant cells in its path, eventually resulting in the observed necrotic disease symptoms. Under suitable conditions, asexual reproduction then takes place and new sporangia are produced thus completing *P. kernoviae*'s life cycle.

Some *Phytophthora* species, including *P. ramorum*, survive unfavourable periods such as hot summers or cold winters as long-lived spores known as chlamydospores. These have not been observed with *P. kernoviae*, either in the field or laboratory. Another spore form - the sexual spore, or oospore – can also serve as a survival structure for a number of *Phytophthora* species. These are produced by *P. kernoviae* in naturally infected plants.

Long distance spread occurs by movement of infected plant material, also, possibly in growing media, and in soil carried on vehicles, machinery, footwear or on animals.

Beth sy'n cael ei wneud?

Mae Arolygiaeth Iechyd Planhigion a Hadau Fera a'r Comisiwn Coedwigaeth yn cynnal gwaith ymchwil helaeth i bresenoldeb *P. kernoviae* fel rhan o'r arolwg cenedlaethol o *P. ramorum*. Mae camau statudol yn cael eu cymryd pa bryd bynnag y gwelir arwyddion y pathogen. Mae'r camau hynny'n cynnwys dinistrio planhigion heintiedig, olrhain stoc cysylltiedig mewn meithrinffeydd a chadw golwg fanwl ar blanhigion a choed sy'n cael eu mewnfario.

Mae gwaith ymchwil yn cael ei gynnal hefyd i epidemioleg y pathogen (gan gynnwys ei effaith ar *Vaccinium*) a rheoli'r organebau mewn parciau a gerddi.

Mae astudiaethau o wneuthuriad genynnol pob achos o *P. kernoviae* ym Mhrydain wedi dangos eu bod i gyd union yr un fath ond maen nhw'n wahanol i *P. ramorum* a *Phytophthora* cyffredin eraill.

What is being done?

Fera's Plant Health and Seeds Inspectorate and the Forestry Commission are carrying out extensive inspections for the presence of *P. kernoviae* as part of the current national survey for *P. ramorum*. Statutory action is taken whenever the pathogen is found. Measures primarily include the destruction of affected plants, with tracing and inspection of any related stocks moving in trade, and increased monitoring of imported host plants and wood.

Further research into the pathogen's epidemiology (including its effects on *Vaccinium*) and management of the organisms in parks and gardens is currently underway.

Studies of the genetic make up of *P. kernoviae* isolates from each UK outbreak have shown that they are all identical, but distinct from *P. ramorum* and a range of other common *Phytophthora* species.

Beth gallwch chi ei wneud

Aferion garddwra da yw'r allwedd i reoli *P. kernoviae*. Dilynwch y camau ymarferol syml hyn wrth ddelio â phlanhigion sy'n gallu dal y clefyd er mwyn lleihau'r risg:

- Cadw golwg fanwl – dysgwch symptomau'r clefyd a pha blanhigion all ei ddal er mwyn ichi allu eu hadnabod yn gyflym.
- Gofal – golchwch a diheintiwch wellau ac offer yn rheolaidd gyda chynnyrch addas. Byddwch yn ofalus wrth drin planhigion gan fod deilen glwyfedig yn fwy tebygol o ddal yr haint, yn enwedig os

yw'r tywydd yn ffafriol i ledaenu'r haint. Tociwch y planhigion mewn tywydd sych.

- Dwrhau – os medrwch, dwrhewch eich planhigion yn y bore yn hytrach na'r nos. Gofalwch nad yw planhigion mewn potiau'n sefyll yn eu dŵr yn rhy hir.
- Bylchau rhwng planhigion – mae symudiad rhydd o aer yn helpu i rwystro'r clefyd rhag lledaenu.

What you can do

Good cultural practice is key to effective control and management of *P. kernoviae*. Follow these simple practical steps when dealing with susceptible plants to reduce disease risk:

- Monitor - familiarise yourself with the disease and its host range so that you are able to recognise symptoms promptly.
- Husbandry - clean and disinfect secateurs and tools regularly with an appropriate product. Take care when handling plants as a wounded leaf can be more susceptible to infection, especially if weather conditions are favourable to disease infection. Prune susceptible host plants in dry weather.
- Watering – if possible water plants in the morning rather than at night. Ensure that potted plants are not standing in water for any length of time.
- Plant spacing – good air movement helps to combat disease spread.

Cadwch lygad barcud

Mae *Phytophthora kernoviae* yn bathogen hysbysadwy ac mae'r ddeddf yn gofyn eich bod yn cymryd camau i'w rwystro rhag cyrraedd a lledaenu.

Os ydych yn credu bod y clefyd yn bresennol ar eich safle, yng Nghymru neu Loegr, cysylltwch â'ch Arolygydd Iechyd Planhigion a Hadau Fera lleol:

Ffôn: 01904 465625

Ebost: planthealth.info@fera.gsi.gov.uk

Gwefan: <http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/pRamorum.cfm>

Yn yr Alban, cysylltwch ag Uned Garddwriaeth a Marchnata SEERAD, Caeredin:

Ffôn: 0131 244 6303

Ebost: hort.marketing@scotland.gsi.gov.uk

Gwefan: www.scotland.gov.uk

Yng Ngogledd Iwerddon, cysylltwch â llinell gymorth DARDNI:

Ffôn: 028 9052 4999

Gwefan: www.dardni.gov.uk

Yng Nghymru, Lloegr neu'r Alban, os ydych chi'n amau bod y clefyd ar goed, cysylltwch â

Gwasanaeth Iechyd Planhigion y Comisiwn Coedwigaeth, Caeredin:

Ffôn: 0131 3146414

Gwefan: www.forestry.gov.uk

Keep a good look out

Phytophthora kernoviae is a notifiable pathogen and statutory action is being taken to prevent its introduction and spread.

If you suspect the presence of this disease on your premises, in England and Wales, you should immediately contact your local Fera Plant Health and Seeds Inspector or

Tel: 01904 465625

Email: planthealth.info@fera.gsi.gov.uk

Web: <http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/pKernoviae.cfm>

Or, in Scotland contact the SEERAD Horticulture and Marketing Unit, Edinburgh:

Tel: 0131 244 6303

Email: hort.marketing@scotland.gsi.gov.uk

Web: www.scotland.gov.uk

Or, in Northern Ireland contact the DARDNI helpline:

Tel: 028 9052 4999

Web: www.dardni.gov.uk

In England, Wales and Scotland, if you suspect the presence of the disease on trees you should contact the Forestry Commission Plant Health Service, Edinburgh:

Tel: 0131 3146414

Web: www.forestry.gov.uk