



Northern Ireland  
Assembly

Committee for Agriculture and Rural  
Development

# OFFICIAL REPORT (Hansard)

Review of Tree Disease and Biosecurity  
Issues: AFBI/DARD Briefing

19 February 2013

# NORTHERN IRELAND ASSEMBLY

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Review of Tree Disease and Biosecurity Issues: AFBI/DARD Briefing

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**Members present for all or part of the proceedings:**

Mr Paul Frew (Chairperson)  
Mr Joe Byrne (Deputy Chairperson)  
Mr Thomas Buchanan  
Mr Trevor Clarke  
Mrs Jo-Anne Dobson  
Mr Chris Hazzard  
Mr William Irwin  
Mr Kieran McCarthy  
Mr Oliver McMullan

**Witnesses:**

Dr Colin Fleming	Agri-Food and Biosciences Institute
Dr Alistair McCracken	Agri-Food and Biosciences Institute
Dr Sinclair Mayne	Department of Agriculture and Rural Development

**The Chairperson:** I welcome Dr Sinclair Mayne, grade 5 departmental scientific adviser; Dr Alistair McCracken, grade 7 principal scientific officer at the Agri-Food and Biosciences Institute (AFBI); and Dr Colin Fleming, grade 7 principal scientific officer at the Agri-Food and Biosciences Institute. You are very welcome to the Committee, gentlemen. Thank you very much for your attendance. I am sure that you have a presentation for us. Sinclair, I think that you are going to lead off.

**Dr Sinclair Mayne (Department of Agriculture and Rural Development):** Good afternoon, Chairman and members of the Committee. Thank you for the opportunity to make a short presentation to the Committee on the issue of emerging tree diseases and to review the underlying science. I will briefly outline the Department of Agriculture and Rural Development (DARD) process for commissioning research and development in order to highlight that this is an issue that we have been aware of for some time and on which we have commissioned a series of programmes, which are being undertaken by AFBI. Alistair and Colin will provide more detail on those programmes.

Our evidence and innovation strategy sets out the overall framework for our research and development programmes. Even in 2009, we recognised the emerging threat of plant and tree diseases. In fact, that is included in our evidence and innovation strategy. There are three main elements to the strategy in respect of how we commission research. First, we have the DARD-directed research programme at AFBI, which is the main thrust of our research programme. We have a very active and important research programme on plant health, which will be outlined shortly. Secondly, we have the postgraduate studentship scheme, whereby we bring new graduate students in on a three-year programme to develop expertise and skills in particular areas. Finally, as you know,

we have the industry-led research challenge fund, for which we fund up to 50% of the costs of research.

The commissioning programme at AFBI has four programme management boards (PMBs), whose job it is to liaise with stakeholders and identify the key risks to the Department. Those PMBs are on performance in the marketplace; the social and economic infrastructure of rural areas; animal and plant health and animal welfare, which is the particular PMB with responsibility for plant health; and sustainable environment. Each PMB has an annual cycle of engagement with stakeholders and the wider NGOs to identify risks and gaps on which we want to fund research. The fact that PMB 3 is aware of the tree health issue is witnessed by the fact that we have commissioned five projects at AFBI specifically on tree health over the past five years. Those projects are outlined in the document, and Alistair will describe them briefly. Our research was initially focused on *Phytophthora ramorum*, and, more recently, on *Phytophthora lateralis*. We are funding a programme to develop new diagnostic tests; new ways of identifying and treating diseases at an early stage. That is very important. More recently, we have a programme on ash dieback, to look at the effectiveness of biocides and disinfectants.

I wish to highlight that the Department is aware of and alert to the emerging disease threats. The research information that we are getting from AFBI is critical in providing new evidence and information to help to develop policy in the Department.

I will now hand over to Alistair, who will outline the programme.

**Dr Alistair McCracken (Agri-Food and Biosciences Institute):** There are three things in the submission that we made to the Committee that I would like to highlight. First is the general comment that, although we are concentrating on tree diseases, it is really important to put that into the context of plant health. Plants are incredibly important to the country. There are lots of pests and diseases out there that could potentially cause damage to arable crops, apples and ornamental crops. One role that we in AFBI have is the identification and diagnosis of new pests and diseases. We are using two approaches to do that: the traditional plant pathology approach, and the work that Colin does on molecular techniques. Similarly, as Sinclair outlined, in the area of plant health and pathology, we carry out a number of R&D projects. Again, those are on a wide range of pests and diseases and a wide range of important agricultural and horticultural crops.

The second point I want to make is that the threat to Northern Ireland agriculture is genuine and potentially severe. In the past three years, we have identified eight new pathogens never before identified on the island of Ireland. I will highlight three: one is *Phytophthora ramorum*, a disease of Japanese larch, which is a very significant commercial tree species for us. One of the important points that I would like to make about that is that we first identified it on rhododendron, which is really not important. The first identification of a pest or disease may be on a commercially insignificant crop, but it has the potential to spread to a commercially significant crop. The second disease that you are fully aware of is *Chalara fraxinea* — ash dieback. Again, that has been found on a number of sites. Ash is a very important tree for us as a plantation tree, a landscape tree and a hedgerow tree. We often quote the example of Denmark, where that disease was found and has killed 90% of the ash trees in Denmark. Therefore, it has the potential to be very serious. The third disease is *Phytophthora lateralis*, which is a disease of Lawson cypress trees, and we have found that at a number of different sites in Northern Ireland.

AFBI is running a number of projects, particularly addressing those areas and pathogens. The primary overall objective of these projects is to understand the epidemiology of the pathogens: how they are spread, how they survive, what their infection mechanisms are, and their host specificity. That, in turn, will inform the best approaches in policy and in practice for, initially, hopefully, the eradication of the diseases and, if necessary, their control.

A very significant amount of work has been done by Dr Fleming's laboratory, which looked at improving methods of detecting and identifying new potentially damaging pests and diseases.

As well as DARD-funded projects, we have collaboration on funding with other research institutes. For example, we have a Department for Environment, Food and Rural Affairs (DEFRA) funded project, which includes the Forestry Commission and the Food and Environment Research Agency (FERA), which is looking at the virulence of a particular strain of *Phytophthora ramorum* that we have found in Northern Ireland, which does not seem to be as common in other parts of Great Britain or the rest of the world. We also have a postgraduate student, who is part of a Council for Forest Research and

Development project, which has partners at Teagasc and the universities of Limerick and Dublin. Therefore, we have very close links with national and international organisations in our research.

The third point that I want to make is this: why is all this happening? There are two primary reasons. The first is the increase in global trade and the very rapid movement of plants right around the world that can, potentially, introduce lots of new pests and diseases. The second reason is climate change. Even a very small change in temperature or weather patterns means that a pathogen that has been introduced from a completely different environment can survive and thrive in an Irish climate.

We have submitted a long list of pathogens that are on the doorstep, as it were, and a list from the European and Mediterranean Plant Protection Organization, which has a large list of organisms that could potentially be introduced and cause very severe damage. We have examples of pests and pathogens that have been found particularly in the south-east of Great Britain and, over the past three, four or five years, we have watched their inexorable move north and west. They have not reached us yet, but we have, at least, got forewarning of that. Therefore, it is essential that we take a very robust approach to plant health and that the science that we do is well focused and well conducted.

**The Chairperson:** Thank you very much for your presentation. We will go straight into questions. My first question will be the obvious topic, which is ash dieback, although I am keen to keep the review wide with regard to plant health. In the opinion of AFBI, who are the scientific experts in this matter, how likely is it that Northern Ireland can keep this disease out of the environment?

**Dr McCracken:** At the moment, I am quite positive about that. Almost all our cases have involved recently imported material and, in very many of those cases, it has been possible to trace it back to a source. At the moment, we have seen no evidence of spread within the environment. The fungus goes through both an asexual and a sexual stage. The sexual stage forms between July and September. That is the important element in the spread of the disease and, at the moment, we have seen no evidence of that occurring.

The symptoms that we are seeing seem to be associated with plants that were infected, so I think that we are ahead of the game with the robust eradication process that DARD is putting into place. You will need to ask me that question in six months, after we have gone through the next cycle of the pathogen. It could change but, at the moment, I think we have a good chance of keeping the disease from the wider environment.

**The Chairperson:** The witnesses last week indicated that a major issue is the provenance of the seed. We send seeds to the continent that we then bring back as saplings. Those plants could have travelled through various states and nurseries before returning. What are AFBI's views on that?

**Dr McCracken:** The movement of plants provides the potential for spreading this disease. I think there is scientific discussion about the importance of seed infection and some evidence of seed infection, although that is probably the less important means of infection. If the seedlings are being produced in an area where ash dieback is common, there is a real potential that those plants could become infected and the disease reintroduced.

**The Chairperson:** Maybe this is a question for DARD, but what more can be done to grow more seed and keep it here?

**Dr Mayne:** The current disease outbreak has highlighted the importance of local production, rather than sourcing material from elsewhere. I suppose the question is whether it is commercially viable to establish nurseries to generate our own oak saplings. That is the problem. The issue will more likely be about identifying resistant strains of oak, and there is already a programme going on in Europe on that.

We do not know whether we have resistant strains because we have not had a challenge in the wider environment. It is really a commercial operation and whether there is enough demand locally to establish nurseries to develop oak saplings. Historically, it has been cheaper to import and that is why the material has come in from elsewhere.

**The Chairperson:** Has DARD encouraged foresters, tree planters and farmers to plant native seed?

**Dr Mayne:** That is certainly under review. I think that my policy colleagues are making a policy presentation later in the month when they will be able to talk about that. However, the ability to establish local material is certainly under debate. The problem is that if we see ongoing disease in the wider environment, and the potential for windborne infection, we will in the longer term need to look at establishing resistant varieties, and identifying and planting those, rather than replanting material that is going to be susceptible. The longer term is about trying to have a biological resistance bred into the varieties that are able to withstand the current disease cycle.

**The Chairperson:** I take your point, but has the work on genetic disease resistance already commenced or are we waiting until we know whether it is windborne?

**Dr Colin Fleming (Agri-Food and Biosciences Institute):** The work on the continent has shown that there is genetic resistance in European ash. It is at quite a low level; the Danish scientists told me that about 5% of ash trees in Denmark are resistant. However, it is a very strong resistance. The problem lies in identifying that, because the method of practical management in Europe has been to destroy infected trees and trees in infected areas, which means that you cannot identify that resistant material.

A decision will have to be made here if and when the disease appears in the environment. Do we wait until we identify those trees and then bring them into a breeding programme, or do we destroy all the trees in an infected area? That is quite a difficult call to make.

**Dr Mayne:** Ultimately, it will have to be a European breeding programme. It is unlikely that one country will do it on its own.

**Dr Fleming:** There are distinct strains of ash tree in Europe. The strains in Ireland and, I think, in Britain, are somewhat different to those in mainland Europe, and there may well be genetic differences. Until we can see the challenge of the disease to our ash trees, we will not know how resistant they are.

**The Chairperson:** In your written briefing, you helpfully note that there are three major risks and issues: the loss of specialist scientific expertise, limited resources, and industry and public awareness. Other witnesses have also raised those issues with us. What critical or immediate actions can be taken to address those key risks?

I have a concern about limited resources, which is shared by Forest Service and even AFBI, in dealing with tree disease. Can you elaborate on what you mean by limited resources? How is that a major risk at this time?

**Dr Mayne:** I will start off at a general level. More widely, plant health is a very significant issue and will become even more important. As you are well aware, animal health research has been a major priority for the Department in the past number of years, but plant health is moving up the agenda.

Last autumn, DEFRA's chief scientist commissioned a major review to look at plant health and to determine whether we have enough expertise. There is a recognition that we have to use limited resources and we have to look at the issue of plant health. There is a shortage of specialists right across Europe that needs to be addressed because of the threats that are emerging.

Alistair mentioned some of the other crops. Grass is also a crop that is subject to disease, and, obviously, that is critical for us in our environment. We need to be aware of that. We are including resistance to disease in our plant breeding programme, for example, at Loughgall, which is world-leading. Again, we need to start to think ahead about disease resistance in our breeding programmes, as well as putting more emphasis on early diagnosis and some of the new techniques. AFBI has been leading in Europe on molecular diagnostics. Alistair may want to comment on the broader issues around resources.

**Dr McCracken:** One of the issues — it is a global issue — is that there has been a loss of traditional botanists and plant pathologists. At the moment, AFBI is reasonably OK for that, but, a few years down the road, we are certainly going to lose some of that expertise. I believe that AFBI's senior management team is very aware of these sorts of issues and is trying to address them by way of succession planning and bringing in young scientists. That is why the studentship programme is particularly important. We are training young scientists in these skills to lift the baton.

**The Chairperson:** Are you comfortable with the resources that AFBI has at the moment to investigate, interrogate and fight against plant diseases?

**Dr McCracken:** Like all scientists, I would like a much bigger budget and a lot more staff, but we have a good group, and there is really good liaison between the molecular team — Colin's team — and my team, which uses more traditional standard plant pathology techniques.

**The Chairperson:** So you can assure us that there are no blind spots in the work that you do?

**Dr McCracken:** I think that we have it well covered. As scientists, we are always asking questions, and there are always questions to be answered. However, we have things reasonably well covered.

**Dr Fleming:** One of the important things is that we maintain links with laboratories all around Europe and the world. If we have a slight gap in knowledge or expertise, we know where to seek that information. In most cases, that information is forthcoming. A lot of collaboration is going on, which helps to cover over some of the weak areas that may be present in Europe.

**The Chairperson:** You talk about the sharing of information. Are there any states, bodies or departments that do not share information?

**Dr McCracken:** Scientists tend to be very open. Both of us are parts of networks. I am part of a network known as EUPHRESKO, which is a European-wide scientific network that meets from time to time. We are very open when it comes to sharing information. Obviously, there are issues of intellectual property, publication and that type of thing, but we try to publish very quickly so that it is in the public domain. My experience of working with scientists in Teagasc, FERA, the Forestry Commission, and right across Europe and America, is that they have been very helpful and open in sharing information.

**Dr Mayne:** One of the advantages of our being at the very west of Europe is that we have England and Wales as our early-warning system. The trick is to have those good contacts that Alistair talked about, pick up the disease early and have prevention methods in place so that we can prevent it from coming further west. Hopefully, we can use that to our advantage. We really need to be able to use the information so that we are able to bring in measures that, hopefully, will allow us, within the European regulations, to prevent some of the diseases from coming in.

**Mr Byrne:** I welcome the three gentlemen and their presentation. I think that Alistair said earlier that global trade and travel has added to the difficulties. In that context, how can we defend the health of our plant population here? What immediate tools do we need to marshal in defence of current plant health?

**Dr McCracken:** It happens at a number of different levels. At a very basic level, it is about making the general public aware of the importance of plants, plant diseases, and the risks of bringing or smuggling in plants. I sometimes visit New Zealand. When you arrive there, it is right in your face: people are very aware of the dangers. In Northern Ireland, people are aware of animal diseases, but there needs to be education to make the general public aware of the importance of plants and what can be done to prevent the spread of disease; for example, signage and education when there are *Phytophthora ramorum* outbreaks. That is one level.

A second level is the work of DARD and the inspection branch through the systems in place to inspect plants that are coming in and reducing the risk that way. The third level is where we, as scientists, come in. Colin is doing very sophisticated work on sensitive ways to detect pests and diseases before they become established so that we can react to them. It is also about horizon-gazing. As Sinclair said, we often get a warning because England and Wales are to the east of us, so we can see things that are happening and be warned about them.

**Mr Byrne:** We are an island; does that mean that we should have a better defence system or is it possible to have a better defence system?

**Dr McCracken:** We have an enormous advantage being an island. Most of our prevailing winds are from the west, so the nearest land mass is 2,000 miles away. We have an enormous advantage that Belgium or another European country would not have.

**Dr Fleming:** You have covered the key points, although I would emphasise the importance of raising the intelligence or education on plant health in Northern Ireland. If you asked a member of the public before probably the Chalara outbreak, plant health would not really have come into their way of thinking. Somehow we need to promote that information and awareness to the public because the public are an extremely good way of identifying new diseases if and when they appear. Although, as Alistair said, a lot of these diseases are working their way westwards, from time to time something just appears. In many cases, those are the most dangerous of the outbreaks. There is no warning and the effects can be difficult to predict.

**Mrs Dobson:** I also thank you for your briefing. What lessons will AFBI be taking away from the ash dieback affair, especially in relation to our preparedness, to limit the damage from future diseases? What more could have been done to be prepared for the outbreak?

**Dr Fleming:** You have seen the long list of organisms that we are watching for, and we try to prioritise those from intelligence from Britain and the rest of Europe. We identify the pathogens or pests that are likely to appear, and we will have testing protocols in place. Hopefully, we will not have to use them, but if something does appear, we have an off-the-shelf detection method.

We also try to liaise with our policy colleagues in DARD to highlight a disease that we feel may be arriving in the near future. If it is deemed serious enough, we can put part of our emergency response plan into operation. Quite often, it is difficult to identify what is coming, but we try to have a system in place to deal with what is expected. As I said, however, the problem is identifying those pathogens or pests and sometimes what does appear is the least expected.

**Mrs Dobson:** What more could have been done to be prepared?

**Dr Fleming:** From my point of view, there is very little else that we can do except to maintain and maybe elevate awareness of plant disease. There are 300 to 500 organisms out there, and you cannot educate the public to be on the lookout for them all. That is a problem all over Europe.

**Mrs Dobson:** Your written briefing states:

*"Genetic disease resistance is an important approach to disease control but the selection and breeding of resistant tree species is a very lengthy and expensive process."*

Are there savings to be made here by dovetailing with research being carried out in other regions of the UK? Does AFBI have a procedure in place whereby research undertaken elsewhere can be used to reduce the cost of your research? I am concerned about expensive duplication.

**Dr McCracken:** That is an important point, and I think that the scientific community recognises that there is a limited resource. We would be in close contact with the Forestry Commission and FERA, which are the two main institutes. We are also in contact with the Scottish Agricultural College and the James Hutton Institute in Scotland. One of the things that we do in the EUPHRESKO network that I spoke about is to say, "If we concentrate on this area, you concentrate on that". There is a real synergy. Those networks have been built up over a number of years, and there are really good relationships. My experience is that it never becomes a competitive thing.

There are certain types of science. We are unlikely to get into tree breeding because that is not what we have traditionally done, but there are institutes that do that. That having been said, there is work that needs to be done locally. The Irish climate, being a maritime climate, is different from Denmark. So, although we pick up the scientific information in publications and in networks from Denmark, we cannot just plonk that into Ireland because we have often found that a pathogen or insect behaves differently in our climate than in another. That is also the case because of our agricultural structure, the plants that we grow and all those sorts of things. Therefore, it is two things: sharing information through really good networks; and the importance of doing science locally.

**Mrs Dobson:** Making it fit.

**Dr McCracken:** That is where it is really important that we interact with Dr Mayne's group and with DARD policy, which is obviously to be seen in a local context.

**Dr Mayne:** I will just add that the critical aspect in getting into these networks is the investment in research. To access those networks, you must be able to bring something to the table. For Alistair and Colin to be invited, if you like, into a European-wide network, you need to have the research funding and the credibility that is gained from carrying out your own research. Part of the dividend of investing in AFBI is that it builds the expertise that, hopefully, gets you into the broader European networks to access that information. We cannot rely on research elsewhere to get all the information; we need to fund, and then the trick is to add value by getting into those wider networks.

**Mrs Dobson:** Finally, earlier you touched on the three risks, which are referred to on page 6 of your briefing, and the Chair mentioned them. You described them as "immediate areas of concern". Would you have raised those issues were it not for the recent ash dieback outbreak?

**Dr McCracken:** Yes; I think so. They are general issues that affect science in general and plant science perhaps in particular. We have identified, over a number of years, the loss of specialist expertise in botanical and plant pathological issues. I have always been frustrated that people have not been aware of the importance of plant pathology, and I have been a plant pathologist for 35 years.

**Mr Irwin:** Thank you for your briefing. You say that eight new diseases have been identified in Northern Ireland recently. Do you believe that those diseases, in the main, have been imported with trees?

**Dr McCracken:** In all cases, they have been introduced. As for the mechanism of introduction, diseases can move in all sorts of ways. The most likely explanation, among those that I listed, is that they were brought in on infected plants. However, there are potentially other explanations. Colin gave me a brilliant example this morning.

**Dr Fleming:** For example, we are doing some work looking at an outbreak of disease in golf turf in the Republic. Our recent DNA sequencing has shown that it is caused by a pathogen from around the Monterey area of San Francisco. As yet, we do not know how it gained entry to Ireland. It may well have been on golf shoes.

**Mr Byrne:** Rory may have brought it back. *[Laughter.]*

**Dr Fleming:** I would not like to say that. However, that highlights the many ways in which pests and diseases can gain entry. Recently, there have been some good examples of that around Europe, linked, for instance, to military equipment — diseases and pests appeared during the Balkans war.

**Mr Irwin:** Ash dieback is the big topic and probably the most serious disease. You said that up to 90% of ash trees have been lost to it in Denmark. Given that fact, and I know that this is not in your remit, does it not seem strange that there was not a ban on imports sooner?

**Dr McCracken:** There is a scientific aspect to this. I will try not to be too technical, but the organism that causes ash dieback is called *Chalara fraxinea*, which is the asexual stage of the organism. It has a sexual stage, which is known as *Hymenoscyphus albidus*, which is a very common organism. When the disease was first identified, it was simply assumed that it was being caused by *Hymenoscyphus albidus*, which is a very weak pathogen. Only in 2011 — 18 months ago — was it actually discovered that the sexual stage of the organism causing the disease was an organism known as *Hymenoscyphus pseudoalbidus*, which seems to be a much more virulent pathogen and is absolutely identical, morphologically, to the *albidus*. So, while I take the point that you are making, in fact, the scientific understanding of what we were working with was such that it did not make sense to ban the imported plants if the organism we were talking about was actually a very common one that I could find in any ash plantation in Europe, if you understand what I am trying to say.

**Mr Irwin:** When the ordinary person in the street hears that, in Denmark, for instance, 90% of trees have been lost, it is only natural that we ask that question. We are not up on the science of it.

**Dr McCracken:** No; I was just trying to explain that there was a scientific reason. I am sure that a strong case could have been made to ban the import, but it was not just as straightforward as that.

**The Chairperson:** I cannot wait to read that section of the Hansard report. *[Laughter.]* Surely, if there is even a doubt or a risk, is it not better to close things down and create the fortress Ireland that we now talk about, while that risk is investigated?



**Dr Mayne:** The issue there is that you need the scientific evidence. If, as Alistair said, that organism — or what was thought to be that organism — was in the general environment here anyway, it is very difficult to say that you are going to stop importation when that organism has been detected in our environment. It is only when you can demonstrate that it was not present in our environment that you then have a justification in Europe to prevent plants coming in. That is where the science was catching up on the disease problem in being able to show that it was a different form of disease that we did not have here. Then you can start to make a case. Again, it really highlights the importance of having the scientific diagnosis to allow you to get in earlier than we did in this case.

**Mr Buchanan:** Thank you for your presentation. You spoke about the dangers of the disease and its potential severity on that type of farming industry. When you have something so severe, that calls for rigorous and urgent action. Do you feel that what has been put in place is rigorous enough to tackle, stem and control the disease, or is there something else that could or should be done to try to tackle that particular disease and its potential severity on the industry? If you detect some area of woodland where there is no disease, is there anything, like a spray, that could be put on that to protect it from the disease?

**Dr McCracken:** I will deal with the first bit. It is about the interaction between AFBI, as the scientists, and DARD's agrifood inspection branch. I think that we have been really rigorous, given the amount of time and resources that have been put into it, both in surveillance — you have had the reports of the number of sites that have been looked at — and the action that has then been taken based on the diagnosis. All the samples are sampled through our laboratory. Between Colin and I, we have had well over 1,000 samples in the past three months since November. A huge resource has been put to it in our laboratories, in the surveillance and in the very rapid response to an outbreak. So, I think that a lot has been done.

**Dr Fleming:** On the matter of dealing with the disease and the environment, DARD has just commissioned us to do some desktop research to identify potential agents that have been used to disinfect, for example, leaf litter, and so on, in an affected area. There is also a project soon to be under way in Great Britain that, again, will test various chemicals and products. We will be involved in aspects of that as well. As regards dealing with the disease and the environment, that information will be coming on stream very soon. As I said, the critical stage will be the summer, and we are all aiming to reach the situation where we can treat if something is effective. At the moment, we are not sure on that. Disease in infected trees is much more difficult to cope with. I am not sure whether there is any good example of a fungal disease being controlled once it is in a mature or a very large tree. It is a very difficult organism to control.

**Dr Mayne:** This is one of the problems in the longer term. The range of chemicals that we can now use for a whole range of plant diseases is being restricted every year by European legislation, so the way we have to get back is into biological control through breeding resistant strains or having different practices to ensure that we do not get the disease. The tools that we have to deal with diseases are being reduced year on year, whether that is for arable crops or any other horticultural crop. There is a challenge to be continually ahead of the disease and to develop alternative ways of controlling it.

**The Chairperson:** There are a couple more questions that we have not picked up on. Excuse me for my ignorance if this is not intensive. Do we have the capacity in our labs to counter and deal with this disease and all tree diseases? Is that an issue?

**Dr McCracken:** We have, and we have found that we have a degree of flexibility. This disease more or less came out of left field in November. We were able to divert resources to make sure that we were able to deal with the 1,000 samples that were coming through. That has knock-on consequences, because, while staff are doing that as an emergency response, they are not involved in research projects or whatever it happens to be. So, it does have an impact, but we have dealt with it. Through our relationship with DARD as our funder and through our management structure, we have that flexibility. We have been looking at training up staff, particularly junior staff, to do parts of the process, so that, if folks are off on leave or are sick, there is always someone to take their place.

**Dr Fleming:** Another example of our flexibility has been that we have also been dealing with samples from the Republic. We have been helping them to diagnose the presence of the organism in the Republic.

**Dr Mayne:** I will make a point about the procedures and the relationship between AFBI and DARD, because this is critical to the emergency response capability. Our investment in research is building the capacity to deal with diseases such as this, and that is why having AFBI as an NDPB allows DARD the flexibility to say that it will suspend its research programme to ensure that AFBI can divert its staff to deal with the emergency situation. That applies to animal health, plant health and elsewhere. If we were to fund that research elsewhere, we would not have the same flexibility to ask that organisation to use the expertise that we have developed to deal with the emergency, and that is a very important part of the relationship between DARD and AFBI. Although AFBI has its own freedoms, budget arrangements, and so on, ultimately, DARD has that degree of control over emergency response. That is critical in relation to all the diseases.

We have regular reviews of emergency response capability to make sure that DARD is covered in the event of something happening, so that AFBI is sufficiently well resourced. That includes capital, because a lot of this is about equipment. Some of the molecular diagnostics require very expensive equipment and very expensive staff because of their expertise. You do not buy that sort of resource overnight; you need to have it in place to deal with the critical issues that are likely to emerge. That is very much part of the long-term planning of R&D, where we are not only saying that it is worth doing this research but asking whether it builds our capability to deal with situations. Foot-and-mouth disease was the prime example of where we needed to have local capability to move quickly, and the same applies to plants. If we were allowing all these samples to be shipped off to England or Scotland for a diagnosis, we would be generally further down the queue. The local samples get tested first, and ours would be tested second, so there is a delay. That is the sort of delay that allows the disease to become more widespread. So, I think that it is important. That said, there is not a bottomless budget. We have to be able to prioritise, and that is where the mechanisms that we have in place allow us to say, "What are the likely risks? Where do we get best value for our money in the longer term?"

**The Chairperson:** Last week, I raised the all-Ireland Chalara control plan with witnesses. What input, if any, has AFBI had into that? How concerned are you that we have not got the plan in place yet?

**Dr McCracken:** AFBI is a part of the incident management team, so there is always an AFBI representative at those meetings. We all get sight of that plan and have an input to it, because it is important that the science is right. I probably share your concerns that it has not yet reached fruition. I think that the actual plan is quite good, but we need to get it.

**The Chairperson:** Have you seen a plan?

**Dr McCracken:** Yes.

**The Chairperson:** Why has it not been published? Is it not in the public's interest to see a plan? Is it something that is being acted on, but we do not know about it?

**Dr McCracken:** I am not sure that I can comment on that, because, as I said, AFBI's input to it has been in ensuring that what has been written is based on robust science. The actual publication and dissemination of it is something that AFBI would not be —

**The Chairperson:** Sinclair, can you answer that?

**Dr Mayne:** Do you mean in relation to Chalara or ash dieback?

**The Chairperson:** Yes.

**Dr Mayne:** That is a work in progress. It is more of a policy issue, but we are involved in preparing a pest risk analysis, which is what has been requested by the European Commission. It allows us to have a separate control strategy to other member states. I am feeding into that, as are colleagues from the South. It is being co-ordinated at a UK and Ireland level. Within that, there will be a GB component and an island of Ireland, North and South, component, highlighting the difference in disease status between GB and Northern Ireland and the Republic. That is being worked on, but it has not been fully developed yet. The plan is to have that developed by the middle of March. If it is the pest risk assessment that you are asking about, that has not been fully documented; it is still being co-ordinated by colleagues in England.

**The Chairperson:** Forgive me for not having it in front of me, but Ministers have talked about an all-Ireland Chalara control plan. As yet, we have not seen it.

**Dr Mayne:** I would need to refer to policy colleagues for the detail of that.

**The Chairperson:** OK; thank you. There are no further questions or comments. Gentlemen, thank you very much for your time here, your presentation and your answers to our questions.