REPORT OF PROCEEDINGS BEFORE

STANDING COMMITTEE ON STATE DEVELOPMENT

INQUIRY INTO GENETICALLY MODIFIED FOOD

At Yamba on Wednesday, 22 March 2000

The Committee met at 2.30 p.m.

PRESENT

The Hon. A. B. Kelly (Chair)

The Hon. I. Cohen The Hon. J. H. Johnson

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ANGELA CHRISTINE DELVES, Pro-Vice-Chancellor, Southern Cross University; Chair, Institutional Biosafety Committee; Member, Genetic Manipulation Advisory Committee; and Plant Breeder, Southern Cross University, Post Office Box 157, Lismore, sworn and examined:

CHAIR: Did you receive a summons issued under my hand in accordance with the provisions of the Parliamentary Evidence Act 1901?

Professor DELVES: Yes, indeed.

CHAIR: Are you conversant with the terms of reference of this inquiry?

Professor DELVES: I am.

CHAIR: If you should consider at any stage during your evidence that in the public interest certain evidence or documents you may wish to present should be heard or seen only by the Committee, the Committee will usually accede to your request and resolve into confidential session. I should warn you, however, that the Parliament may override that decision and may make your evidence public. Have you a brief statement you would like to make first and then we will proceed to questions?

Professor DELVES: In relation to the terms of reference, particularly in relation to the public and private benefits costs to New South Wales in relation to genetically modified food, I think it is true to say that much of the talked about benefits and costs are at the moment largely supposition in that to date we have only had three general releases of genetically modified plants in Australia, two carnations that nobody raised a scrap of interest about, probably because they all go to Japan, and the third one, insect resistant cotton which is on limited general release in Australia.

I think one can speak with more certainty of the actual cotton. Although one cannot specifically take it as a food stuff, we can say that cotton products are used in animal feed and cotton oil is also used.

So far as the benefit is concerned in that, there is a definite benefit that has been demonstrated to the people living close to where cotton is grown. For example, they get something like three or four insecticide sprays during the season rather than anything up to 16.

I am sure if any of us lived close to there that would be a good benefit because that has been one of the problems of cotton growing. That is a properly scientifically demonstrated benefit.

One can also say that where one uses genetic modification to improve the composition of a food stuff, like increased protein or reduced alkaloids, better oil composition, that could be thought of as a benefit, as could some of the work being done at present on putting cold resistant genes into rice so that rice can be grown over a much wider geographic area. At the moment the places where rice is grown is very much limited by the fact of where it is too cold to grow, and obviously use of water.

One could also say probably more controversially that if you can grow proteins, like pigs, with less food and in a shorter time and even with less fat and, if you like, more meat, then that could be perceived as a benefit. Of course, in the use of any kind of

technology there are also going to be costs. Again, much of the discussion that has been about cost is the, what-if-type costs, and we do not know yet because we have not done it on a wide enough scale.

One of the things that is concerning people at the moment is herbicide resistant crops, and there are problems here with perhaps super weeds being developed, particularly where regulation is not sufficiently tight so that you would get the same kind of herbicide resistance in a range of different crops which might be grown in rotation.

You do not have to be a farmer or an agriculturalist to imagine that if that happened over a number of years you are likely to get, perhaps, the development of resistant-type weeds. So that would be a cost.

The private benefits of that particular kind of technology are more difficult to spell out even if you are trying to think of them in that a lot of people think it will only benefit the multinationals in their production of uncontrolled use of herbicides and seed crops.

I think one needs to also remember longer term that most of us who have had a garden will have used some of the herbicides and it is an effective way, particularly using some of the more benign ones, to control weeds. That is true on a larger agricultural scale, but much of the costs and benefits are at the moment conjectural rather than proven.

So far as impacts on food processing agricultural in New South Wales, there are problems, as we know, with people who produce their food organically. They are concerned about genetic pollution and, if you like to look at the other side of the scale, all crops that are produced even when seeds are produced, like pure seed, there is a level of contamination in that which is accepted.

The organic growers, I believe at the moment, are wishing to have absolutely no genetic pollution. I would argue that with or without genetically modified crops nearby there is likely to be some kind of genetic pollution but it might be a different kind of genetic pollution. So we need to look at that particular impact perhaps a little more rationally.

Again, there is a concern that chemicals might be used a lot more. I do not know whether or not that is going to be true. We have not seen the systems in place yet. It certainly will benefit the multinationals in that they control usually the patents for those chemicals and through that tend to control, if you like, the seed distribution.

I feel strongly myself that one of the impacts, perhaps not impact but consequence or what should be done is that mandatory labelling must happen for genetically modified food so that the public can make an informed choice. Whether or not there is any risk associated, people should know and be able to judge what kind of risk they are prepared to take.

I think the legislation of the A18 food standard is a good thing. I think the move to label stuff that is significantly different, that contains any GMOs or a labelling to say it does not or we do not know is a good move. I know a lot of scientists would not agree with that but I believe people should have the choice and make up their own mind about what you do. When I lecture on this I say to people, "Would you eat a potato if it is going to go brown or would you eat a tomato that is not going to fall apart before it actually tastes of anything?" and people say yes or no.

Interestingly enough, the production of human insulin is done using a GMO but nobody minds about that because it is better than the stuff produced from pigs. It is a question of looking at each case individually and deciding whether the benefits are better than the costs and/or the risks and making your mind up on a case-by-case basis.

Adverse consequences, I think that so far as trade is concerned, given the present climate in other parts of the world, particularly in Europe and increasingly so in America, there is a real risk that our trading partners may reject goods, food, et cetera, that come from Australia unless it can be guaranteed GMO free if that is what they want. We see examples of this in beef going to our trading partners and because it has certain residues in it they have rejected it. So I think that is a real risk.

I think there is also possibly a perception risk in spoiling the clean image of Australia and Australian food, which I think must be taken into consideration. I am not so hung up on the safety problems, but I am a scientist and geneticist, so I am probably biased in that way, and I do not see that a lot of the stuff that is put forward about Frankenstein food - it is probably wonderful for the media - as having little basis in scientific reality.

I think so far as the environment is concerned, then, yes, risk analysis is very important and I think it would be ridiculous and stupid and naive to suppose that we can do perfect risk analyses on what is going to happen to the environment with 100 per cent certainty.

Australia does not have a terribly good record on bringing things in or doing things in the environment. There are a lot of nasty examples of things that have gone wrong. So I think that you can never have a zero risk. You can do as good a risk assessment as you can but you still have to understand that there may be a combination or a set of circumstances that you have not thought of that may, if you like, change the balance. But that is probably all I need to say.

The Hon. I. COHEN: You may have heard there has been some debate over the canola trial, the plantings of canola, over the last few days. What concerned me in discussion with industry representatives before this inquiry was that there was mention, after I brought up the issue, of the 400-metre buffer.

As I understand it, you are on the GMAC, and that was established, yet other information I have is that pollen can travel up to five kilometres, perhaps not as much in Australia as in Europe. Nevertheless, we were not able to find out where those trial sites were. We later found out that Aventis is licensed to 1,200 hectares Australia-wide, Monsanto 1,000 hectares and a small amount with DuPont. I am wondering how you feel about that potential for contamination?

Professor DELVES: Genetic pollution?

The Hon. I. COHEN: Yes, and in particular the potential for that leading to a loss of overseas trade. You mentioned that. In the case of canola I was told that a \$26 million windfall market was found because the Australian canola was GE free and the competition was not. I am just wondering if you can comment on that?

Professor DELVES: I do not know about the last statement. I have not heard that before. Yes, it is certainly true that pollen can be transported over large distances. It all

depends on how the bees work. Bees normally come from their hive to a particular crop field and when there is a good honey flow or a pollen flow on they work that. They usually fly from where they are to the field and then back again to deposit their pollen or their nectar. Occasionally they will stop off in between, and sometimes bees, as you know, can fly a long distance.

The Hon. Dr B. P. V. PEZZUTTI: How long?

Professor DELVES: I think up to five kilometres. I mean, it is not an unrealistic statement that pollen can be transported over that distance.

The Hon. I. COHEN: For example, wind conditions?

Professor DELVES: No, not wind for that kind of heavy pollen. The pollen is too heavy except that it is actually stuck on the bees' legs to be transported over that distance. We chose a 400-metre exclusion distance, because beyond that it is almost impossible to detect any pollen movement at all. It is random events. If you put in, if you like, trap plants out beyond that, you cannot find any evidence of the pollen transmission. We know that it does very occasionally happen, but it is in such small amounts that it is almost experimentally impossible then to prove it.

The Hon. I. COHEN: Is that acceptable, though? The whole issue of genetic engineering of agricultural crops is very much an area of debate. I hear what you are saying from your experience as a scientist in the field but, nevertheless, it is unproven science, in terms of escape, in terms of impact on other species.

Professor DELVES: When we look at risk we look at two things. We look at how easy will it be for the gene to escape and what will happen, and I would say when rather than if it does. If the risks are very high for escape, then the experiments do not take place. There are situations in which you would not agree to that type of experimentation.

You have to look also at what happens, what the risk is when it escapes, and what you are saying to me is: is it acceptable that you get even an infinitesimal amount of genetically modified pollen back in the beehive or maybe on another crop?

I think you have to put this in an agricultural context in that if this is happening with genetically modified pollen, it is happening with pollen from non-genetically modified crops or, if you like, paddocks that may be different, not a different species but, say, a different variety so you are still getting, if you like, genetic pollution.

It is whether you think that that GMO pollen is unacceptably dangerous and I think again that is where you have to look at the technology on a case-by-case basis. It depends what that genetic modification is.

It might be interesting for you to know, and I only heard this a couple of days ago, that the resistance to Roundup in canola is something that has been put in by genetic modification.

The Hon. I. COHEN: Resistance to?

Professor DELVES: Roundup.

CHAIR: Glyphosate.

Professor DELVES: That is right. I have heard anecdotally that somebody has actually discovered a natural source of that resistance but I cannot confirm that because somebody just happened to say this to me in passing a couple of days ago when I had another visitor who was inquiring about this kind of thing. So in that case it would not be a GMO.

To my mind, as a plant breeder, the use of this technology is, if you like, an extension of all the things that we have been doing for the last five to ten thousand years.

The Hon. Dr B. P. V. PEZZUTTI: Since Mendel.

Professor DELVES: Long before Mendel. Since people stopped being hunter-gatherers and started being agriculturists and started fiddling about with their plants. Nothing that we eat now, or very little of it, is natural. All the foods you eat, the grains you eat, the apples you eat, the vegetables you eat are all at the end of a long process of crop improvement.

This is another kind of crop improvement, and I guess, as a geneticist, I tend to see DNA more as DNA. We all share so much DNA. The haemoglobin we have in our blood cells that carries our oxygen is almost the same haemoglobin as legumes have in their system, which says that that particular kind of genetic construct has been conserved for hundreds of hundreds of millions of years, but then, you see, as I said, I am a geneticist so I perhaps see DNA in a different way than many other people would.

The Hon. I. COHEN: Generously, as a geneticist - and I quote from your article, which I have here - you say:

This is an area which should not be left to scientists alone. There must be input from others who may bring a different approach and better reflect public concern.

Professor DELVES: I agree.

The Hon. I. COHEN: Public concern might be, rightly or wrongly from your geneticist perspective, that that is unacceptable or not wanted. Now, I appreciate what you are saying on the labelling and I think it is fantastic, but there are the issues of the clean green reputation of the Australian agricultural sector and there are areas in the world that are going GMO - for example, the States, Canada and Argentina - and there are other areas where there are burgeoning markets for non-GMOs.

With those canola experiments we do not know as yet where they are. It is not public. They are talking commercial in confidence. Are the neighbours, other growers, aware that those experiments are being undertaken?

Professor DELVES: As far as GMAC is concerned, we inform all the local councils where the crops are, that there are genetically modified crops within those council areas, every time.

The Hon. J. R. JOHNSON: Do you put any embargo on the information going out from the local councils?

Professor DELVES: No.

CHAIR: Do the councils have any influence on whether or not there are likely to be trials there?

Professor DELVES: That is an interesting question, actually.

CHAIR: There is a reason I asked that.

Professor DELVES: I am, not being on a local council, not sure about what the powers of local councils are.

The Hon. I. COHEN: The Department of Agriculture in New South Wales was before the inquiry and it did not know where the crops were, how many there were, and it had no power to have access to that.

Professor DELVES: I must say I am surprised by that because the information, as I say, is passed out to the councils. Now, the exact paddock is not but the general area within that region is, within that particular council.

CHAIR: A Central West councillor mentioned to me recently that the council thought that some place in its area was supposed to be used. The councillor concerned was particularly worried that he would have to make a decision on it, but then he said later he was much relieved because the original councillors then agreed to allow it back in the neighbouring area. So there must be some process where councils have some influence? Are you aware of that?

Actually, it is probably too difficult a question to answer now. Do you mind taking that on notice if you can find out anything further? Do not worry about writing it down. What we will do - I should have explained to you - is that within a couple of weeks you will get a copy of the transcript for you to make any corrections that you feel are necessary. You might look through that and find that you would like to expand on certain items. By all means do so. Or if there are any questions that you would like to say, "I will take it on notice," answer them then, or if we run out of time we will ask questions on notice.

Professor DELVES: I am happy to fill in the real details on that.

CHAIR: You will get all the questions in the transcript.

The Hon. I. COHEN: Would it be reasonable --

The Hon. Dr B. P. V. PEZZUTTI: I will ask the question you want to ask. Where are they?

The Hon. I. COHEN: Yes, where are they? Where are those sites, the trial sites for canola, particularly in New South Wales? Secondly, whether you give us that information or not, would it not be reasonable that there is a guarantee, talking five kilometres or whatever it might be, that there is proper isolation or quarantine of any such experiment given the fragile nature? Even if it is in degrees of perception, there is such controversy on those types of crops, should they not be properly quarantined? It would seem to me that 400 metres is not really adequate.

Professor DELVES: Can I respond by asking you a question?

The Hon. I. COHEN: Sure.

Professor DELVES: Do you think that that should be the case if there is no scientific basis for that? Should we, rather, not try to educate people why that distance is there like that rather than just giving into or not giving into but not trying to make people aware of the real facts?

CHAIR: Is it all right if he takes that on notice too?

Professor DELVES: I do not think you have to, do you?

The Hon. Dr B. P. V. PEZZUTTI: You do not want to confuse him.

The Hon. I. COHEN: Again, it is the image of the whole industry, and also, it seems to me that 400 metres is very inadequate.

Professor DELVES: I do not agree with you.

The Hon. I. COHEN: Okay, you can disagree with that. But can you tell us, then, where the plots are?

Professor DELVES: I cannot tell you that at the moment because I cannot remember. They are on farms, God knows where, all over the place. But that is not information that we disclose. Now, I will say that we have discussed the problems around this.

As far as I know, there has not been a decision made by GMAC and I am not sure, if you like, of the legislative status that we need to go through, but it is an interesting question and it is one that we have discussed the pros and cons of.

Try to think of it from the farmers' point of view. You know what has been happening even in Queensland recently with somebody nipping over the fence and yanking the pineapples out.

The Hon. I. COHEN: The black heart in the pineapples. We have discussed that in terms of a GE crop to resolve that. However, surely, this type of accusation that is made of Luddites attacking and destroying the crop --

The Hon. Dr B. P. V. PEZZUTTI: They did. They have done that.

Professor DELVES: They have done it in the UK.

The Hon. I. COHEN: Brian Pezzutti said on the record they have done that, and they have done it in the UK. But can I say simply this. They grow huge quantities of opium in Tasmania under guard. If it is so important to the industry --

CHAIR: It is not under guard.

The Hon. I. COHEN: Well, it is fenced in.

CHAIR: No, it is not.

The Hon. I. COHEN: Well, I have seen it fenced in.

CHAIR: It is 200,000 hectares down there, and it is not fenced in.

Professor DELVES: It is 70 per cent of the legal production of opium in the world, is it not?

The Hon. I. COHEN: If they can do that for something as topical as opium, surely they can guard or create a situation which is reasonable for something like a GE canola crop.

Professor DELVES: But what is the danger with GE canola?

The Hon. I. COHEN: The danger is that you are saying you cannot say where it is because it might be destroyed or sabotaged. I am saying there are ways of protecting it and I would say further, that one of most important things is to quarantine it.

Professor DELVES: We believe it is quarantined. We do not believe it is dangerous.

The Hon. I. COHEN: That is part of the entire debate. You are convinced of that but others are not. You also said earlier that there was that image problem that could be detrimental.

Professor DELVES: I think that is what we need to attack, the image problem. I do not think we need to take measures for which there are no scientific basis just because there is an image problem. I think it is the image problem we need to attack.

The Hon. I. COHEN: You did say you are not going to get 100 per cent loss of cross-pollinisation.

Professor DELVES: You are not going to get that in a normal environment with any other kind of crop, GMO or not.

The Hon. I. COHEN: If you have something that is perceived to be so damaging, surely that is a reasonable step to take? It is done in medicine.

Professor DELVES: I do not agree.

The Hon. Dr B. P. V. PEZZUTTI: As you quite rightly pointed out, we have E.coli that produce antibiotics by the tonne and we modified E.coli to get rid of our garbage. How come in medicine, my business, we can get away with all this GM stuff? I do not mean get away with, but the community is convinced that this is the way to go and have no concerns about it, none, and yet if it is something we eat, not something we ingest into our body IV, but something we eat and break down into things that we can absorb like amino acids, why is it not possible to convince people?

Professor DELVES: There could be a number of interesting answers to that. Firstly, it does not affect everybody. It only affects a few people.

CHAIR: What did you mean by that? The medical only effects a few people?

Professor DELVES: The medical treatment is not a general thing. I think people have great faith in their medical profession and if the doctor says that this is all right, it is all right, maybe not quite as much as it was --

The Hon. Dr B. P. V. PEZZUTTI: Yet 98,000 people die in America every year from medical mistakes. In other words, that is on the record, Clinton is doing something about that. It is publicly recognised, yet is that because people do a risk assessment in their own mind and say, "If I do not have this I am going to die. If I do have it I might live"?

Professor DELVES: I think in some cases there may be something of that. I think also that the use of things like antibiotics has been happening for a long time and I do not think people really thought about where they came from in the same way as you think about it when you are talking about food. People's basic eating habits are a very seminal part of their life.

I think if you read any of the marketing stuff, people changing what they eat, it is a big change and I think that has been shown up by some of the food aid programs overseas where people would prefer not to say new rice varieties rather than to try something different. It is something we are extremely traditional about. There is a flavour of that in the way that people are concerned about their food. We eat food all the time and everyone eats food a lot of the time.

The Hon. Dr B. P. V. PEZZUTTI: But the big issue with the food is that if you modify it to be anything other than a food, like a vaccine or to put foliate in it, the food is going berserk because you are making food as a medicine, yet the same companies that produce the antibiotics are the same companies that are doing the GM modification to food. DuPont, Monsanto make drugs for people. They go through the same regulatory process for a food as they do for a drug yet people trust the drug bit but they do not trust the food bit.

Professor DELVES: It is not very logical, is it?

The Hon. Dr B. P. V. PEZZUTTI: I think they have been able to sell the Food and Drug Administration. People believe what they do there and if a company does research, FDA checks it and whatever but it accepts it, but if they do it on food, "My God, you cannot believe what they do because they work for Monsanto". That is an issue for scientists to answer.

Professor DELVES: I think also that the efficacy of many of these medical treatments has been well proven over a long time. One of the things that people cannot see is the advantage or the difference that it will make or the life saving advantage or the public good that modified foods are likely to bring or may bring. I think they see it on a completely different plane.

The Hon. Dr B. P. V. PEZZUTTI: What is the cost if we do not go down this path? Say that Mr Cohen is right, that the Americans and Canadians are in one basket and Europe is another basket and we market to both and we are in competition with both? If you want to be Machiavellian, say they are stirring up this problem in Europe, then we try to produce both, it costs us more to produce both the GMO and the non-GMO because of

labelling, separation, and the Americans and Canadians instantly get a major commercial advantage in wheat.

There is no GMO in wheat at the moment, but there will be. It is the wheat story that will start to separate the pigs from the goats, if you like. If Mr Cohen is right and we go down the track of saying nyet, the Americans and Canadians will have a huge market advantage. Lots of countries will not care if it is GM.

Professor DELVES: I think that is subjective. I guess it depends on whether we want to be a niche marketer or a general marketer. In the past, Australia has been a general marketer of basic commodities, including things like wheat. We will not be able to compete on price. It is possible that we may not be able to compete, say, on food value.

The idea is to modify food crops so they have a better food profile. Certainly, say, in exporting perhaps to third world countries that cannot afford, say, animal proteins, if you improve the protein balance in basic grains which are much cheaper in resources to produce, then we would lose out in that area.

So far as us here in Australia are concerned, given our extensive agriculture and small population, it probably will not make a lot of difference. We may be able to sell specifically to Europe but I would doubt, say, in 10 or 15 years time perhaps even the places that are opposed to GMOs, given a fairly strong price differential may not be so fussy down the track if and when nothing terrible has happened, in which case we will be well behind.

The Hon. I. COHEN: I appreciate your comments on labelling. Would that would be a serious disincentive for any market to have labelling such as that in terms of the GMO foods?

Professor DELVES: No, I think it would be a serious disadvantage not to have the labelling because I think everybody wants to make a choice..

The Hon. I. COHEN: GMO foods as labelled would then suffer a disadvantage in the market place.

Professor DELVES: Maybe at the present in some places. I guess my argument is that in 10 years time I do not think that will be the case. But that depends on public perception and what happens in the next 10 years.

The Hon. I. COHEN: I hear the issues about medicine and such like, but that is also a specific situation because where you come from, Cellulose Valley, there is a whole body of opinion that is moving away from GMO to other methods and finding that niche market which I would argue is an extremely valuable market for a small population area like Australia, but there is that degree of faith in the decision made in terms of the safety, so there is nothing proven. Would you not agree?

Professor DELVES: Possibly for a small proportion of people. I think not so for everybody.

The Hon. J. R. JOHNSON: Professor, you have no doubt read in the last few days the decision of the World Trade Organisation in regard to salmon in Tasmania.

Professor DELVES: Yes. I could not have missed it.

The Hon. J. R. JOHNSON: Indeed, none of us could. Having in mind that the Canadian Government if it wishes to exercise its rights under the World Trade Organisation can now impose 100 per cent tariff on everything that comes from Australia into Canada, if the Canadian Government or the Canadians decide they want to send to us, and I heard recently on an ABC program that 41 products in Canada were being marketed and that the Canadian people did not know that these were genetically modified products, those products, where do we stand?

Professor DELVES: I would probably need to check up on this but my understanding is that it would have to pass our quarantine regulations to come in and certainly AQIS notify GMAC when stuff is coming in that is genetically modified. I think I am right in that the new food legislation requires that if anything is marketed in this country it has to obey the same labelling rules, et cetera, as anything that is produced here.

The Hon. Dr B. P. V. PEZZUTTI: If it is not biologically alive. Say it is canola oil coming from a GM crop.

Professor DELVES: That is an interesting one because the actual oil itself has no GM anything in it. The oil is absolutely identical to the most discriminating level of analysis as any other canola oil because the product of the genetic modification is a protein and you cannot sell the oil in Australia if it has any protein in it. I should say I think one of the things that disturbs me as a scientist is some of the media reporting on this in that much of it, as I guess you have to be if you are a journalist, is sensational and incomplete information. I think it is a shame because it has raised a lot of fears in people's minds.

The Hon. J. R. JOHNSON: Immeasurable fears.

The Hon. I. COHEN: Possibly reasonable fears.

Professor DELVES: Possibly also unreasonable fears. They talk about Frankenstein food. I mean, the very phraseology --

The Hon. I. COHEN: You did in your article.

Professor DELVES: I know.

The Hon. I COHEN: In terms of that, as a scientist surely there is a precautionary principle to be looked at there in the fact that we are dealing with food to be consumed for generations. There are many things in our society at this time, be they pesticides, that in retrospect there were mistakes made, there was carelessness, and that antibiotic usage, et cetera, was inappropriate, so perhaps we are using the wisdom of the past antibiotic few decades and saying we do not want to repeat that mistake.

Professor DELVES: That is why we must be careful about our risk analysis. I do not think it is an excuse for doing nothing.

CHAIR: I have a question for you to take on notice. How is genetically modified food technology being viewed by our Asia-Pacific trading partners?

(The witness withdrew)

The Committee adjourned at 3.15