

Testimony of Luther Val Giddings, Ph.D. ¹

Before

Boulder County Commission

December 8, 2011

Thank you for the opportunity to speak with you this evening.

I am here at the invitation of a friend who works for the Biotechnology Industry Organization. He asked me to speak with you this evening because of my experience with the science, policy, and regulation of crops and foods improved through biotechnology. I have worked as a regulator, prepared environmental assessments of transgenic crops, and supervised and reviewed hundreds of such risk assessments. As an expert and consultant I have advised government and United Nations' agencies, companies, and NGOs around the world over more than three decades.

In reviewing the many things that have been said by folks seeking your vote to ban the growing of crops improved through biotechnology from Boulder County owned lands, I see that a number of them know a lot about ag biotechnology, most of which happens to be untrue. The facts show quite clearly that these crops and foods are at least as safe as those produced with any other processes. Whenever we've found any difference in the safety levels, it has favored biotech crops and foods.² They are also superior from an environmental impact point of view, reducing the environmental footprint of production agriculture by approximately 17%, according to peer-reviewed scientific studies, while increasing yields and farmer incomes³. From zero commercial plantings in 1994, biotech crops were grown last year on 366 million acres in 29 countries by 15.4 million farmers, 14.4 million of whom were smallholders in developing countries.⁴ No other sector of the ag economy has shown such rapid growth, and no other agricultural innovation has ever been adopted more widely and rapidly. This has happened for a very simple reason – as shown by a vast body of scientific literature, and an enormous amount of practical experience, biotech crops deliver higher quality harvests, at lower costs, with lower environmental impacts, than any competitor. In the face of this vast body of experience, why anyone should seek to suppress a farmer's freedom to plant what he or she would choose is something I do not understand. So I'd like to enter into the record some facts.

Crops improved through biotechnology have undergone more scrutiny, in advance, in depth and detail, than any other crops or foods in the history of agriculture. Don't take my word for it – there are a huge number of authoritative and independent sources who have reached this conclusion. You might want to start with the United States Regulatory Agencies Unified Biotechnology Website, which can be found at <http://usbiotechreg.nbii.gov/>.

Links on this website will lead you to hundreds of pages of regulations applied to crops and foods improved through biotechnology, wrongly but commonly referred to as “genetically modified organisms” or GMOs. These regulations structure the way the US Department of Agriculture, the Environmental Protection Agency, and the Food & Drug Administration conduct prior reviews for all plantings, in greenhouse, field trials, and at commercial scale. The website will also take you to a database where you will find thousands upon thousands of pages of site-specific environmental risk and food safety assessments performed in advance by USG agencies. There is one conspicuous gap in all this record keeping, however: You will not find compiled by any of these agencies any list of negative consequences to human or animal health, the environment, or the economy resulting from the use of these crops and foods. This is because, in all the billions of acres grown and harvested, hundreds of billions of meals eaten by humans and livestock, there is not a single, solitary example of a negative outcome for human, animal, or environmental health, because there have been none. There is a rich literature claiming

otherwise, promulgated by the opponents of these agricultural innovations.⁵ But, rigorous examination of their specific claims reveals that none of them stand up under scrutiny.⁶

Perhaps this is why virtually every competent, authoritative body that has examined these issues has reached positive conclusions as to their safety and desirability.⁷ Even the European Commission has concluded that

Indeed, the use of more precise technology and the greater regulatory scrutiny probably make them even safer than conventional plants and foods; and if there are unforeseen environmental effects—none have appeared as yet—these should be rapidly detected by our monitoring requirements. On the other hand, the benefits of these plants and products for human health and the environment become increasingly clear.⁸

Or, as our own U.S. National Academy has concluded:

In contrast to adverse health effects that have been associated with some traditional food production methods, similar serious health effects have not been identified as a result of genetic engineering techniques used in food production. This may be because developers of bioengineered organisms perform extensive compositional analyses to determine that each phenotype is desirable and to ensure that unintended changes have not occurred in key components of food.⁹

Perhaps this is why some of the founding icons of the environmental movement have endorsed agricultural biotechnology, such as Stewart Brand, founder of the Whole Earth Catalogue, who wrote recently

"I daresay the environmental movement has done more harm with its opposition to genetic engineering than with any other thing we've been wrong about," he writes. "We've starved people, hindered science, hurt the natural environment and denied our own practitioners a crucial tool."¹⁰

I know some will argue, despite the overwhelming evidence, that this is wrong and the facts are otherwise. As a colleague of mine in Australia noted last week: "It is hypocritical... to demand that governments act on the science of climate change and at the same time demand that government completely ignore and act against the science of biotechnology."¹¹ Furthermore, experience shows that agricultural innovations in biotechnology are perfectly compatible with other systems of production, including organic.¹²

Perhaps some further illumination can be found in a few news reports from the past week.

Excerpts inserted here from highlighted news items attached below.

Thank you for your time and attention.

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Highest courts in France and EU confirm France's ban on GM crops is illegal

Brussels, Belgium 28 November 2011

Today, France's highest court, the Conseil d'Etat, has confirmed that the European Court of Justice's judgment that the 2008 French ban on the cultivation of genetically modified crops (GM) is illegal. Both courts overturned the national ban declaring that the French Government presented no scientific evidence of any risk to health or the environment from these crops.

Carel du Marchie Sarvaas, EuropaBio's Director of Green Biotechnology Europe, commented, "These judgments from the highest European court and the highest French court send one message loud and clear: bans of GM crops cannot be based on political dogma. As both judgments state, no ban on planting GM crops can be declared without valid scientific evidence, something that France and other European countries have not produced."

A ban on agricultural innovation is not without cost, such as yield loss due to pests and a block on investment in public and private sector agricultural Research & Development. "Farmers in France were growing over 20,000 hectares of GM maize in 2007, the third year of commercial cultivation of this crop before this illegal ban. Four years later, the real loss caused by this ban is French farmers' ability to control pests that affect both the yield and quality of their maize. France's leaders must now decide whether they want to regain their position as a leader of agricultural innovation, tackle future global challenges and create jobs and investment in agriculture, or support an anti-science agenda that weakens Europe's competitiveness", continued Carel du Marchie Sarvaas.

A study by the EU's Joint Research Centre (1) showed that this maize increased farm income by up to €22 per hectare, led to higher average yields of 11.8% in an area of heavy insect pressure, and resulted in a reduction in insecticide costs by as much as €20.04 per hectare. Over the four year duration of the illegal French ban, farmers therefore potentially missed out on over €40 million of income and did not produce over 370,000 tons of maize that could have helped meet the needs of a hungry world.

(1) Joint Research Centre of the European Commission (2008). "Adoption and performance of the first GM crop introduced in EU agriculture: Bt maize in Spain." Also published in Nature Biotechnology, April 2008.

BACKGROUND

According to European Union law, emergency measures regarding GM crops can be invoked only in case of the existence of a situation which is likely to constitute a clear and serious risk to human health, animal health or environment. Over the last 15 years, GM crops have been cultivated on a total of over one billion hectares (three billion acres) worldwide and have proven agronomic, economic and environmental benefits. Their safety has been consistently confirmed.

In 2008, pending the authorization renewal for MON810 maize under Regulation EC 1829/2003, the French government banned its cultivation, citing risk to health and the environment. The top legal advisor to the European Court of Justice, Advocate General Paolo Mengozzi, gave his opinion that only the EU itself could institute such bans and that the French government did not have the authority to adopt the ban. Advocate General Mengozzi also underlined that risk invoked to justify a ban cannot be hypothetical.

Additional resources

- The Impact of the EU regulatory constraint of transgenic crops on farm income (Park et al, 2011)
- The existing and potential impact of using GM insect resistant (GM IR) maize in the European Union (Brookes 2009)

BUSINESS TIMES

Monday, December 05, 2011, 09:17 PM

http://www.btimes.com.my/Current_News/BTIMES/articles/NAZLEE/Article/index_html

Malaysia to see RM500m biotech investments

By Zaidi Isham Ismail

Published: 2011/11/29

Malaysia, which aspires to become one of the world's biotechnology hubs, is set to see RM500 million in investments by the second half of next year. Malaysian Biotechnology Corp Sdn Bhd chief executive officer Datuk Dr Mohd Nazlee Kamal said investors would focus largely on agriculture-based biotechnology.

Biotechnology has two other disciplines - industrial and pharmaceutical.

"These investors may also establish joint-venture companies with Malaysian entities," Nazlee told Business Times here recently.

He declined to name the investors as talks are on-going.

Nazlee said the investments would boost Malaysia's bid to attract another RM9 billion into the biotechnology sector by 2015.

Since its establishment in 2005, the agency, which is tasked to develop biotechnology activities in the country, has won over RM4 billion worth of investments.

Malaysia aspires to become a biotechnology hub like South Korea, Singapore and Thailand, and ultimately, become a global player.

It also hopes to grab a slice of the world's biotechnology sector, which is estimated to be worth trillions of dollars by 2020.

Nazlee said Malaysia as well as the Asia Pacific region had a lot of potential and were well positioned to develop the sector further, boosted by uncertainties in the global economic conditions, especially in the United States and Europe.

Meanwhile, Nazlee said Malaysia at present had a total of 204 Bionexus-status companies with total investments of RM2.1 billion.

It planned to rope in another 50 next year with total investments of RM1 billion, he said.

Bionexus companies are accorded special privileges, such as easy access to loans and grants and exemption of or lower taxes.

Nazlee said the agency, which is under the Science, Technology and Innovation Ministry, was going all out to woo more US and Europe-based biotechnology giants to Malaysia to complement the Asian biotechnology companies here.

"We are in the process of bringing more big US and European biotechnology companies to Malaysia. Talks should conclude in the next couple of months," said Nazlee.

He added that the agency was seeking more funds from the government to help kickstart start-up companies and fund research and development activities.

It also plans to launch grants and loans worth RM100 million together with venture capital funds.

Nazlee said the world's biotechnology sector was evolving quickly and Malaysia should not lag behind.

Europe, for example, is moving away from petroleum-feed stock and intensifying research and development activities in biofuels to meet its aviation policy of using five per cent biofuels by 2015 and 20 per cent by 2020.

"Malaysia should not be left behind as we have huge tracts of land and the biomass that we can use to make biofuel.

"There are also new innovations in the agriculture sector to turn micro algae into jet fuel," he said.

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Economic impact after 15 years of GM crops in Argentina - Agricultural biotechnology afforded the country over 70 billion dollars

Impacto económico de 15 años de cultivos transgénicos en Argentina: la biotecnología agrícola le dejó al país más de 70 mil millones de dólares

Argentina

November 2011

Since its introduction in 1996, agricultural biotechnology generated 72.36 billion dollars and created 1.82 million jobs in Argentina.

Since 1996, when glyphosate-tolerant soybean was introduced, Argentina has been one of the leading countries in the utilization of genetically modified (GM) crops, reaching 22.9 million hectares planted in the last growing season. The adoption process of these technologies has been fast and steady, with an unprecedented dynamics which allowed that GM varieties currently represent practically all the planted area with soybean, 86% in the case of maize and 99% for cotton.

According to a recent study carried out by Dr. Eduardo Trigo for ArgenBio - the Argentine Council for Information and Development of Biotechnology – the gross benefit generated by this adoption process for the period 1996-2010 reaches 72,363 million US dollars. These benefits were estimated using SIGMA, a mathematical model developed by INTA (National Institute for Agricultural Technology) that uses data from the Technological Profile of Argentina's Agricultural Sector (INTA), with additional information provided by the Ministry of Agriculture, Livestock and Fisheries, ArgenBio, INDEC (National Institute of Statistics and Census) and FAO.

Economic benefits, by crop

- In the case of glyphosate-tolerant soybean, the benefits mounted to 65,153 million US dollars, 3,231 million attributable to a reduction in production costs (mainly due to less tillage and reduced applications of selective herbicides required by conventional varieties) and 61,917 million due to the expansion of the planted area. Regarding the distribution of the total benefits, 72.3% went to farmers, 21.3% to the National Government– collected through export tax and other taxes – and 6.5% to technology providers (seeds and herbicides).
- In the case of maize, insect resistance and herbicide tolerance technologies gave benefits for a total amount of 5,375 million US dollars, distributed as follows: 68.2% to growers, 11.4% to the National Government and 20.4% to technology providers (mainly seeds).
- Finally, in the case of insect-resistant and herbicide-tolerant cotton, total benefits reached 1,834 million US dollars that went mainly to farmers (96%), with 4 % going to technology providers (seeds and herbicides).

More benefits

In addition, and given the importance of Argentine soybean production worldwide, this study estimated the global impact in terms of savings that the adoption of such technology by Argentine farmers has had on consumer expenditure (by reducing the global price). The total cumulative figure for 1996-2011 was estimated at about US\$ 89 billion. In terms of prices, figures show that if this adoption process had not occurred, the international price of soybean in 2011 would have been 14% higher than it actually was.

On the socio-economic side, the impact that GM technologies have had on job creation was assessed. Based on these estimates, the generation of 1.82 million jobs by the Argentine economy along these 15 years could be attributed to the use of GM technologies.

Dr. Eduardo Trigo's work also analyzed some environmental impacts related to GM crops, with special emphasis on the particular synergy between the expansion of these crops and no-till farming practices, and its positive impact on

soil structure and the efficient use of energy.

Future benefits.

Looking ahead and using the same methodology applied for the retrospective analysis, the study estimates the potential benefits that could be generated by two different types of GM crops: an herbicide tolerant and insect resistant soybean, and a drought-resistant wheat, under three different price and adoption scenarios. Results show that, if these technologies were available as from the next growing season, accumulated benefits in the 10 following years could be 9,131 to 26,073 million US dollars for soybean and 526 to 1,923 million for wheat, according to the different scenarios.

“Argentina must remain a leader so as not to miss opportunities”

“One of the characteristics of the adoption process of GM crops in Argentina is the fact that our country has been an early adopter worldwide”, stated Eduardo Trigo, who explained that “the introduction of herbicide-tolerant soybean in our agriculture was made available to farmers practically at the same time as in the American market for which it was originally designed. In these 15 years this has given us an important amount of economic and other benefits, as the study shows.”

“The advantages of being at the front of innovative processes are very clear and, as a consequence, so are the risks or opportunity costs that the country would face if it followed a less dynamic technology adoption process than in the past. Keeping the “early adopter” profile is a strategic issue that should include key topics like regulatory processes, the promotion of investments for the sector and the redistribution of benefits into areas like innovation, economic growth and social welfare”, said the author.

The key to success.

“The biotechnology adoption process in Argentine agriculture has been undoubtedly very successful”, said Gabriela Levitus, Executive Director of ArgenBio. “Not only because our products have been competitive and the international prices have been good, but also because when this technology was made available, the country was ready to adopt it. There were world class breeders, trained and innovative farmers and there was the political will that resulted in the creation of a pioneer regulatory system, which guaranteed the safe adoption of GM crops in our country from the start.

This political will, very clear 15 years ago but quite changeable along the last years, is today strong again; this fact is clearly shown through the new approvals and the recent revision of the regulatory processes boosted by the Ministry of Agriculture, Livestock and Fisheries. Contrary to other times, agricultural biotechnology is now a state policy”, concluded Levitus.

About the author:

Dr. Eduardo Trigo is a senior independent Researcher with the Forges Foundation and CEO Group, both institutions dedicated to research and counseling for the agricultural sector.

15 Years of Genetically Modified Crops in Argentine Agriculture

Eduardo J. Trigo - 2011

EXECUTIVE SUMMARY

Argentina is one of the leading countries in the use of genetically modified crops in agriculture, with more than 22 million hectares dedicated to soybean, maize and cotton crops using this type of technologies. The process of adoption of GM technologies began in 1996 with the introduction of glyphosate herbicide-tolerant soybean, and it has continued uninterruptedly, with an almost unprecedented dynamic adoption rate at world scale that has made such type of technologies to be now used in nearly all soybean crops, in 86% of maize crops, and 99% of cotton crops. This process has implied cumulative gross earnings for Argentina amounting to US\$ 72,645.52 million. Out of such total figure, US\$ 65,435.81 million accounted for herbicide-tolerant soybean, US\$ 5,375 million to (Bt) insect-resistant and herbicide-tolerant maize (single and combined events) and US\$ 1,834 million to insect-resistant and herbicide-tolerant cotton (single and combined events).

Additionally to the above-mentioned earnings, it has also been estimated the impact that GM technologies have had in terms of job creation, between the time of their introduction and the last crop season (2010/2011). According to estimates made within the 15-year period after their adoption, total jobs created by the Argentine economy that could be attributed to such technologies would be over 1.8 million.

The above-mentioned earnings have been estimated on the basis of a mathematical model developed by INTA (SIGMA), which uses information obtained from the Technological Profile Study of the Argentine Agricultural Sector, supplemented by information from MAGyP, ArgenBio, INDEC and FAO. The model facilitates the calculation of gross earnings, as well as the manner in which these profits have been distributed among the various productive players and the Government. In this respect, in the case of herbicide-tolerant soybean, the gross value of earnings obtained from cost reduction was US\$ 3,518.66 million, and from arable land expansion it was US\$ 61,917.15 million. As regards distribution of such earnings, 72.4% went to farmers, 21.2% to the National Government –through withholding taxes and other duties–, and the remaining 6.4% to technology providers (seeds and herbicides, distributed approximately in equal shares.) In the case of maize, cumulative earnings were distributed as follows: 68.2% to farmers, 11.4% to the National Government, and 20.4% to technology providers (with a bulk of 19% to the seed sector). Finally, in the case of cotton, earnings largely went to farmers (96%), with 4% being distributed to technology providers (3% to seed suppliers and the rest to agrochemical suppliers.)

Given the importance of Argentine soybean production worldwide, using the same information as the one generated for the economic impact analysis concerning Argentina, it has been estimated the global impact in terms of savings that the adoption of such technology by Argentine farmers has had on consumer expenditure (by reducing the global price.) The total cumulative figure for the period 1996-2011 was estimated at about US\$ 89 billion which, added to the cumulative gross earnings in Argentina (US\$ 65 billion), would result in a total herbicide-tolerant soybean earnings of about US\$ 154 billion. In terms of prices, the estimated figures show that if this adoption process had not occurred, the international price of soybean in 2011 would have been 14% higher than it actually was.

This paper is divided into five chapters. Chapter 1, designed to be an introduction, summarizes the highlights on the process of introduction of genetically-modified crops in Argentine agriculture, through the history of approvals for field trials and commercial plantings, the composition (by crop and trait), and their origin, as well as the adoption dynamics compared to other technologies of significance at national and international level.

Chapter 2 represents the core part of this study, containing the economic impact analysis mentioned above. On the other hand, using the same methodology as the one used for the retrospective analysis, Chapter 3 shows an estimate of the potential future earnings that could be generated from the commercial cultivation of an herbicide-tolerant and insect-resistant soybean (combined traits) and a drought-tolerant wheat, for three possible scenarios relating to prices and GM technology adoption. Results shows that, if such technologies were released as from the next crop season, cumulative earnings in the following ten years would amount to US\$ 9,131-26,073 million in the case of soybean, and US\$ 526-1,923 million in the case of wheat, depending on the different scenarios.

Chapter 4 analyzes some environmental impacts related to the new technologies, laying emphasis on the particular existing synergy between the expansion of GM varieties and the practice of no-till farming, as well as the positive impact of the latter on the soil structure and energy efficiency of agricultural tasks. These practices have led to a 38% reduction in fuel consumption for such crops, as well as a substantial reduction in the use of residual herbicides, which meant a significant positive impact on environmental concerns. However, these practices have also raised many questions such as, for example, those associated with the expansion of soybean monoculture and the implication of such circumstance in terms of “export” of soil nutrients, and the advance of agriculture towards new areas with more “fragile” resources out of the Pampas region. All these aspects are very important and they should be monitored, but there is no doubt that the herbicide-tolerant + no-till farming package is a compelling alternative regarding the previous situation, even though it cannot solve by itself all the sustainability problems that are implied in the process of agricultural enhancement.

Finally, Chapter 5, designed to be a conclusion, poses the challenge to hold one’s position as early adopter. Stemming from the information presented throughout this paper, there is a description of the advantages taken by Argentina for having made the most, almost in conjunction with the American market, of the benefits of using a novel technology. Therefore, one can clearly notice the advantages of being at the forefront of such type of innovative processes and, additionally, of the risks –or opportunity costs– that may affect Argentina if a process of

technology adoption in the future were less dynamic than it has been in the past. Drifting apart from the innovation frontier may have disturbing consequences for Argentina, perhaps of a much more serious nature in the future than the impact that the country may have suffered in the past. Therefore, preserving the early adopter status may seem to be a strategic matter of discussion, where it should be appropriate to include issues such as developing mechanisms for commercial releases, promoting investments in the agricultural sector, and redistributing earnings in the areas of innovation, economic growth and welfare assistance.

More news from: ArgenBio

Website: <http://www.argenbio.com>

Published: November 29, 2011

<http://theland.farmonline.com.au/news/nationalrural/grains-and-cropping/general/greenpeace-losing-its-war-on-gm/2368193.aspx?storypage=0>

Greenpeace losing its war on GM

The Land

November 29, 2011

GREENPEACE has struggled to turn public opinion against biotechnology in recent times, with several campaigns back-firing savagely in 2011.

In May this year, Greenpeace protestors were criticised and jeered after they tried to sabotage the WA No-Till Farming Association's (WANTFA) AGM in Perth, to express their views on GM crops.

The demonstrators staged a small guerrilla style protest but their untimely actions raised broad concerns about an escalating pattern of unethical and unprofessional conduct from members of the anti-GM brigade.

During a presentation on the economic and social reality of GM wheat by Agrifood Awareness Executive Director, Paula Fitzgerald, a female protestor stormed the stage without permission and attempted to present her with a mock certificate.

The move was jeered by the outraged WANTFA crowd, while police were later called to break up a small demonstration outside the event involving a handful of protestors on private property.

Concerns were also raised that Sydney-based Greenpeace activists tried to enter the WANTFA conference by claiming to represent the Greens and a photographer associated with the demonstration allegedly tried to enter the room fraudulently, posing as a Farm Weekly journalist.

Pastoralists and Graziers Association (PGA) Executive Committee member, Gary McGill, was at the WANTFA conference and was disturbed the protestors were not evicted immediately or refunded their money and asked to leave politely.

Mr McGill said he was disappointed they remained at the conference taking notes and could potentially "cherry pick" the information on GM's that they gathered off the various event presenters and use it selectively to continue a campaign based on "half-truths and misrepresentation of facts".

At the time, Ms Fitzgerald said WA farming was "built on the foundations of science and technology; these activists want us to go back to the past and undertake farming akin to the 1950's".

She said, "Unfortunately, GM opponents utilising false identities and stunts, are trying to bring down this innovative farming sector".

"Farmers need to be aware, that Sydney-based multinational activists are seeking to convince the community that farmers are growing unsafe crops, and in doing so, deny farmers access to plant science R&D," she said.

"We should be reminded that in approving GM canola back in 2003, the Gene Technology Regulator stated that GM canola is as safe as conventional canola varieties.

"GM canola has been grown, traded and consumed around the world for 15 years."

WANTFA Chair, Ty Kirby, said he was disappointed the protesters had falsely declared the organisation they were supposedly representing, to gain access to the conference, and then attempted to disrupt the program.

Mr Kirby said WANTFA had spent considerable time compiling its event program in order to inform members of the latest on GM technology.

WA Agriculture Minister, Terry Redman, did not attend the WANTFA event but said the protest failed to alter the State Government's position on GM's because that view was based on "rigorous scientific evidence".

He said the protestors' actions needed to be condemned because it was "threatening" and "unprofessional".

Mr Redman said there was a general lack of desire from Greenpeace and other anti-GM demonstrators, to have a scientific discussion about GM technology.

"It's scaremongering, non-scientific based and quite frankly unprofessional, when you have a multinational like Greenpeace engaging like this on a local issue," he said.

"There is a GM process in the production of insulin; are they saying we should ban that?

"Let's get their true colours.

"Their position on GM's holds back the productivity of farming in WA and in fact the whole community."

The WANTFA protest came on the back of a similar anti-GM demonstration in late February, where an estimated 200 protestors attempted to disrupt the Agriculture Department and Grains Research and Development Corporation's (GRDC) annual Crop Updates in Perth.

In mid-July, Greenpeace activists - one alleged to be an employee - were widely condemned after they raided and destroyed scientific, government approved GM wheat trials at CSIRO facilities in Canberra.

Shadow Agriculture Minister, John Cobb, said the activists should be prosecuted "to the full extent of the law" after they dressed in theatrical style Hazmat clothing - which helped conceal their identity - and inflicted about \$300,000 damage on the government approved trials using whipper-snippers.

The dawn raid was followed by a media release from Greenpeace justifying their actions, with accompanying images showing the trials being whipper-snipped.

The CSIRO destruction prompted calls from QLD Nationals Senator, Barnaby Joyce, to revoke Greenpeace's eligibility for tax exempt status on donations, through qualification as an environmental charity.

He questioned the use of taxpayer funds to help bank-roll actions that damaged taxpayer funded facilities.

"I find it a bit of a paradox that an organisation can get a tax deduction, in the same way that St Vincent de Paul or the Red Cross does, when it has been implicated in charges relating to the destruction of taxpayer property," he said.

"Taxpayers should not fund the destruction of taxpayer's property."

The CSIRO destruction was part of an attempt by Greenpeace to turn public awareness against GM wheat and draw attention to the group's GM wheat report, also released around that time.

But the report - described by CropLife Australia as a "pamphlet" - was also panned by industry critics for making a range of misleading claims and failing to consult leading grains industry groups during its production, including the GRDC, the National Farmers Federation, Grain Growers Limited and Grain Producers Australia.

The Gene Technology Act 2000 - under which the CSIRO trials were conducted - sets out a maximum penalty of two years imprisonment if found guilty of damaging or interfering with approved GM trials and associated facilities.

The CSIRO trial destruction was subsequently investigated by the Australian Federal Police and included a raid on Greenpeace's Sydney head-quarters on July 21, where evidence was seized relating to the case.

In August, the AFP said two Sydney women would be issued with a summons to appear in the ACT Magistrates Court charged with offences relating to the dawn raid, including trespass and damage of Commonwealth property.

Greenpeace confirmed the summons has now been issued but was unsure which court they would appear in.

The two women - Jessa Latona and Heather McCabe - will appear in an ACT court on December 12.

The pair will face charges of property damage, trespass, and interference with a genetically modified organism under the Gene Technology Act.

Reports say the women handed themselves into police but are yet to enter a plea.

At the time of the incident, Ms Fitzgerald said Greenpeace had demonstrated with the launch of their GM wheat "brochure" that they knew "very little, if anything, about farmers, agriculture and food production".

She said the CSIRO "stunt" was further proof of her point, "potentially destroying years and years of research, plant breeding, data collection and outstanding science".

In promoting the raid, Greenpeace anti-GM campaigner Laura Kelly said, "We had no choice but to take action to bring an end to this experiment".

Greenpeace also accused the Federal government of negligence in approving the GM wheat trials and cover-up.

But in responding to Rural Press, the Gene Technology Regulator scotched the claims saying Australia had a "robust and internationally respected regulatory system for gene technology".

"Growing any GM crop in Australia is illegal unless it is approved by the Gene Technology Regulator," a spokeswoman said.

"The Regulator has approved eleven small GM wheat research trials and only after conducting a rigorous science-based risk assessment and extensive consultation.

"These trials are strictly controlled and monitored by the Regulator and information about them, including trial locations, is available on the OGTR website.

"There has been no breach of containment for any of these GM wheat trials and wheat from these trials cannot enter the human or animal food supplies."

CropLife CEO, Matthew Cossey, also savaged vandalism of the GM trials saying it was "nothing but a short sighted attempt to garner publicity".

"This is a dark day for Australian science and there can be no justification for this act," he said.

"This type of activity from Greenpeace is unethical and morally questionable, especially when the world is facing the challenge of global food security.

"The exact purpose of these independent scientific trials was to assess and analyse the safety and potential of healthier wheat varieties critical to Australia's agricultural future.

"It is hypocritical of Greenpeace to demand that governments act on the science of climate change and at the same time demand that government completely ignore and act against the science of biotechnology.

"Through these actions Greenpeace have reduced themselves to a 21st Century equivalent of the flat earth society, with their luddite destruction of scientific trials.

"Regulatory decisions need to be based on proven science, not on Greenpeace's deception, falsehoods and half truths."

ENDNOTES

¹ L. Val Giddings, Senior Fellow, Information Technology & Innovation Foundation, Washington, DC, <http://www.itif.org/people/val-giddings>.

² For a very incomplete list, see, for example: Dowd, P. F., Pingel, R. L., Ruhl, D., Shasha, B. S., Behel, R. W., Penland, D. R., McGuire, M. R., Faron, E. J. 2000. Multiacreage evaluation of aerially applied adherent malathion granules for selective insect control and indirect reduction of mycotoxigenic fungi in specialty corn. *Journal of Economic Entomology* 93(5):1424-1428. Also Masoero, F., Moschini, M., Rossi, F., Prandini, A., and Pietri, A. 1999. Nutritive value, mycotoxin contamination and in vitro rumen fermentation of normal and genetically modified corn (Cry1A9b) grown in northern Italy. *Maydica* 44:205-209. Also Munkvold, G. P., Hellmich, R. L. 1999. Genetically modified insect resistant corn: Implications for disease management. *APSnet Feature*, October 15-November 30, 1999. Also Munkvold, G. P., Hellmich, R. L., Showers, W. B. 1997. Reduced fusarium ear rot and symptomless infection in kernels of maize genetically engineered for European corn borer resistance. *Phytopathology* 87:1071-1077. Also Munkvold, G. P., Hellmich, R. L., Rice, L. G. 1999. Comparison of fumonisin concentrations in kernels of transgenic Bt maize hybrids and non-transgenic hybrids. *Plant Disease* 83:130-138.

³ Graham Brookes and Peter Barfoot. "Global Impact of Biotech Crops: Income and Production Effects," 1996-2007 *AgBioForum* 12 no. 2 (2009): 184-208.

⁴ Clive James, "Global Status of Commercialized Biotech/GM Crops: 2010," (brief 42, International Service for the Acquisition of Agri-Biotech Applications, Ithaca, NY, 2010), <http://www.isaaa.org/resources/publications/briefs/42/default.asp>.

⁵ Jeffrey M. Smith. "Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods," (Fairfield, Iowa: Yes Books, 2007).

⁶ Academics Review, "Genetic Roulette," review of *Genetic Roulette: The Documented Health Risks of Genetically Engineered Food*, by Jeffery Smith, *Academics Review*, February 24, 2010.

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⁷ For a very incomplete list, see, for example, position statements by the American Council on Science and Health; American Dietetic Association; American Institute of Biological Science; American Medical Assoc. Council on Scientific Affairs; American Psychopathological Society; American Society of Agronomy; American Society for Cell Biology; American Society for Horticulture science; American Society for Microbiology; American Society of Plant Biologists; American Society of Plant Physiologists; Brazilian Academy of Sciences; Chinese Academy of Sciences; Committee on Science Subcommittee on Basic Research, U.S. House of Representatives; Council for Agricultural Science and Technology; Crop Science Society of America; Entomological Society of America; the European Food Safety Agency (EFSA); The Australia & New Zealand Food Safety Agency; Federation of Animal Scientific Societies; UN Food and Agriculture Organization; Genetics Society of America; Indian National Science Academy; Institute of Food Science and Technology; Institute of Food Technologists; International Society of African Scientists; Mexican Academy of Sciences; National Academy of Science and Technology of the Republic of the Philippines; National Academy of Sciences of the USA; New Zealand Royal Commission; Society of Nematologists; Pontifical Academy of Sciences; The Royal Society of London; Third World Academy of Sciences; Weed Society of America. European Commission, Press Release of 8 October 2001, announcing the release of 15 year study incl 81 projects/70M euros, 400 teams (<http://ec.europa.eu/research/fp5/eag-gmo.html> and <http://ec.europa.eu/research/fp5/pdf/eag-gmo.pdf>); see also the 2010 update and reaffirmation at http://ec.europa.eu/research/biosociety/pdf/a_decade_of_eu-funded_gmo_research.pdf

⁸ European Commission, Press Release of 8 October 2001, announcing the release of 15 year study incl 81 projects/70M euros, 400 teams (<http://ec.europa.eu/research/fp5/eag-gmo.html> and <http://ec.europa.eu/research/fp5/pdf/eag-gmo.pdf>)

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¹⁰ Stewart Brand, *Whole Earth Discipline: An Ecopragmatist Manifesto*. (New York, New York: Viking, 2009), 10-15.

¹¹ Quote from Matthew Cossey. Colin Bettles, "Greenpeace losing its war on GM," *The Land*, November 29, 2011, <http://theland.farmonline.com.au/news/nationalrural/grains-and-cropping/general/greenpeace-losing-its-war-on-gm/2368193.aspx?storypage=0>.

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