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Uganda gives cautious approval to GM food

SciDev.Net, Charles Wendo, 2 Mar 04. Via AgBioView 3 Mar 04 (shortened)

The Ugandan government has announced that GM foods can be imported into the country, but that they should be used "strictly for consumption", and not for cultivation. In a statement released last month, the government's National Agricultural Research Organisation (NARO) says that the government "recognises the controversial nature of this subject and has therefore decided to proceed with caution, building consensus at all stages." The statement, signed by NARO director-general George Otim-Nape, adds that "policy decisions should not adversely affect the development of science", an acknowledgement that some scientific questions about the potential environmental risks of GM crops remain open.

This is the first time that the Ugandan government has declared an explicit policy on GM foods. However, the issue has been rising rapidly up the country's political agenda in recent months. Last year, President Yoweri Museveni launched a biotechnology laboratory, which is now carrying out tissue culture of bananas, coffee and other crops (see "Banana lab opens in Uganda"). Scientists are preparing to carry out experiments involving genetic modification at the laboratory, emphasising that at present this is being done purely for research purposes. At the same time, a draft law that would regulate both research into GM crops and the release of GM organisms has been submitted to the cabinet, prior to being voted on in parliament.

According to Otim-Nape, the position of the Ugandan government is that GM foods can be considered safe for human consumption until proved otherwise. At the same time, he says, given that long-term risks cannot be entirely ruled out, Uganda will continue to "build capacity to understand, assess, evaluate and manage potential risks and benefits of biotechnology". Many scientists in Uganda have welcomed the statement. Edward Kakonge, a professor of biochemistry at Makerere University, Kampala, for example, says that as long as GM foods are imported strictly for consumption and not for planting, then the risks will be minimal.

But he urges caution on the cultivation of GM crops, citing concerns that genes may be transferred to other species. "The long-term outcomes are unpredictable," he says. "These things can start off well, and then problems emerge later." In contrast, the government's stance has been criticised by several non-governmental organisations, which argue against the import or local production of GM crops. John Bigyemano, a consumer activist, says that the government's position is unwise. "We will oppose the government's stand," he says. "Our position is that GM foods should be considered as dangerous until proved otherwise." Bigyemano also complains that certain GM-based products, such as breakfast cereals and cooking oil processed from GM foodstuffs, are already being sold in Uganda without this being revealed on their label. This, he says, violates consumers' rights to choice, information and protection from harmful products.

Major biotic constraints to African food security and GM

Gressel, J., Hanafi, A., Head, G., Marasas, W., Obilana, A., Ochanda, J., Souissi, T., Tzotzos, G. 2004. Crop Protection. Online. Doi: 10.1016/j.cropro.2003.11.014. 29 Pages. Via AgBioView 13 Mar 04.

The input costs of pesticides to control biotic constraints are often prohibitive to the subsistence farmers of Africa and seed based solutions to biotic stresses are more appropriate. Plant breeding has been highly successful in dealing with many pest problems in Africa, especially diseases, but is limited to the genes available within the crop genome. Years of breeding and studying cultural practices have not always been successful in alleviating many problems that biotechnology may be able to solve.

We pinpoint the major intractable regional problems as: (1) weeds: parasitic weeds (*Striga* and *Orobancha* spp.) throughout Africa; grass weeds of wheat (*Bromus* and *Lolium* intractable to herbicides in North Africa; (2) insect and diseases: stem borers and post-harvest grain weevils in sub-Saharan Africa; *Bemisia tabaci* (white fly) as the vector of the tomato leaf curl virus complex on vegetable crops in North Africa; and (3) the mycotoxins: fumonisins and aflatoxins in stored grains. Abiotic stresses may exacerbate many of these problems, and biotechnological alleviations of abiotic stress could partially allay some predicaments. Some of these constraints are already under study using biotechnological procedures, but others may require longer-term research and development to alleviate the problems. Despite the huge impacts of post-harvest weevils and of mycotoxins in grains, these issues had not been given high priority in national biotechnological programs, possibly due to a lack of knowledge of their immensity. The need for public sector involvement is accentuated for cases where immediate profits are not perceived (e.g. lowering mycotoxin levels in farmer utilized grain, which does not increase yield but where the public weal will gain, and will be invaluable, especially where the private sector supplies genes already isolated.

Biosafety Protocol now operational

Kuala Lumpur, 27 Feb 04. Via AgBioView 3 Mar 04 (shortened) <http://www.biodiv.org/>

The 87 member states of the Cartagena Protocol on Biosafety, which entered into force in Sep 03, have adopted documentation requirements and other procedures for promoting the safety of international trade in living, or genetically, modified organisms (LMOs, or GMOs). Under the new system, all bulk shipments of genetically engineered crops intended for food, feed or processing (such as soybeans and maize) are to be identified as "may contain LMOs". The accompanying documentation should also indicate the contact details of the importer, exporter or other appropriate authority.

Over the next year an expert group will further elaborate the documentation and handling requirements for these bulk agricultural shipments. Key issues still to be resolved include the percentage of modified material that these shipments may contain and still be considered GMO-free and the inclusion of any additional detailed information. A decision on these matters will be considered at the next meeting, to be held in 2005.

Agreement has also been reached on more detailed documentation requirements for those GMOs (such as genetically engineered seeds and fish) that are meant to be introduced directly into the environment. These shipments should be clearly identified as "destined for contained use". In addition, the documentation should specify the common, scientific and commercial names of the modified organism, the transformation event code or unique identifier code, any handling and storage requirements, contact details in the case of emergency, and how the GMO is to be used.

"Now that a system for identifying and labelling GMO exports has become operational, countries can enjoy the benefits of biotechnology with greater confidence while avoiding the potential risks," said Hamdallah Zedan, the Protocol's Executive Secretary. "This rigorous system for handling, transporting, packaging and identifying GMOs is in the best interests of everyone, developed and developing countries, consumers and industry, and all those who care deeply about our natural environment," he said.

The meeting also adopted procedures and mechanisms for promoting compliance with the Protocol and assisting countries in cases of non-compliance. It established a 15-member compliance committee that will submit regular reports and recommendations to the governing body of the Protocol. A negotiating group of legal and technical experts on liability and redress for damages resulting from transboundary movements of GMOs was also launched and asked to develop a regime by 2008. The group must consider issues such as insurance and the definition and valuation of damage to biodiversity. Other decisions adopted focus on making the Biosafety Clearing House fully functional (the Clearing House will enable governments to share information on GMOs, national legislation, and other critical matters), implementing a comprehensive action plan to promote capacity building, providing guidance to the Protocol's financial mechanism on priorities and establishing a medium-term work programme for the Protocol.

The world's governments adopted the Biosafety Protocol in Jan 2000 to ensure the safe transfer, handling and use of GMOs that may adversely effect the conservation and sustainable use of biological diversity, taking also into account risks to human health. The Protocol forms a part of the Convention on Biological Diversity, which was negotiated under the auspices of the United Nations Environment Programme and signed by over 150 governments at the 1992 Rio Earth Summit. This week's meeting of the Conference of the Parties serving as the first meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP1) attracted some 1 000 delegates and observers. The next meeting will take place in the second quarter of 2005.

America: Wake up to the Cartagena Protocol

Alan McHughen, Knight Ridder News (author is at University of California, Riverside). AgBioView 6 Mar 04

The tiny Pacific island of Pulau, unaccustomed to making international newspaper headlines or influencing world trade policy, did just that in June 03, when the quiet republic officially endorsed the Cartagena Protocol on Biosafety. In becoming the 50th nation to ratify the document, Pulau set in motion the legal framework for the world to adopt the Protocol. Ninety days later, on 11 Sep 03, while most Americans were busy commemorating more important events, the protocol became legally binding under international law.

As the US did not sign on, most US media gave scant coverage to the event and so Americans remain oblivious to the dramatic implications of this agreement. However, as delegates meet this week in Malaysia to decide how to force America and other non-signatory nations to abide by the provisions, the impact will be felt soon enough. Essentially, the pact restricts international trade in "Living Modified Organisms" (LMOs), products of biotechnology of which the US farmers are the major producers. The ostensible intent is to ensure environmental safety, "biodiversity" in developing countries by imposing strict regulations on the dreaded LMOs. How effectively the protocol works will depend on the robustness of the scientific underpinnings and on the efficacy of practical implementation.

Unfortunately, the scientific foundation is almost non-existent, and the implementation impracticable and unenforceable. The science is faulty because it rests on a faulty assumption, that all products of biotechnology (LMOs) are inherently risky and that all other technologies are inherently safe. One might reasonably argue that biotechnology is relatively new and therefore one might be more cautious with its products. But by capturing all products of biotechnology and exempting everything else, the pact fails to recognize that ordinary commodities might be risky, and instead improperly places an enormous and unnecessary regulatory burden on some, safe, products of biotechnology.

Science cannot make a blanket claim that all products of one technology are safe while all products of another are risky. Some products of biotechnology are safe, others may be hazardous. Same applies to products of 'traditional' technology. As concluded in several studies by our National Academies of Science, hazard goes with the features of the product, not in how that product was made. There are examples of products made using either biotechnology or traditional means. The products pose the same risks. The Cartagena protocol fails in science.

The practical implementation of the Protocol is also suspect. By defining an LMO as "any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology", the drafters show an ignorance of ordinary plant breeding and grain handling practices. For example, the protocol is written as if a given crop or grain shipment is composed entirely of one type of item, say "LMO soybeans", or possibly a discrete combination of "soybeans" and "LMO soybeans". In reality, a shipload of soybeans leaving the US for an overseas port blends beans from hundreds of different farms, combining the beans of all dozens of different varieties (some biotech derived) grown on hundreds of different farms. With the implementation of the Protocol, each farmer may have to harvest each field separately, carefully segregating the seeds, with the grain handling system maintaining that segregation all the way through to delivery to the overseas customer, with appropriate documentation and minimal seed mixing along the way. This will, of course, add a big cost to the process, to be borne, ultimately, by farmers, taxpayers and consumers. Amazingly, this additional cost and regulatory burden comes with no measurable increase in protection of biodiversity or the environment, the stated intent of the protocol in the first place.

But the biggest failure of the Protocol is likely to come from an unexpected source. The protocol was drawn up primarily to "protect" biodiversity in developing nations from LMOs imported from technologically advanced countries, primarily the USA and Canada. Overlooked was the rapid adoption of biotechnology derived crops, the harvested versions of which are LMOs, in developing countries themselves. According to the International Service for the Acquisition of Agri-biotech Applications, developing countries now grow most of the world's biotech crops (<http://www.isaaa.org/>). With the spread to more and more countries, biotech crops will comprise more and more of the export from those developing countries, and they will be subject to the expensive and bureaucratically onerous provisions of the protocol.

If major exporting nations do not ratify the protocol, and there's no indication the US, at least, is prepared to do so, then the burden of regulatory compliance and its associated costs fall almost exclusively to developing countries. In the absence of any scientific evidence suggesting the protocol will succeed in protecting biodiversity, it seems a high price to fall on those nations least able to pay. People will suffer and, as all so common in these international agreements, poor people in poor countries will suffer the most.

British Medical Association revises GM statement

Global Biotech Science News, 11 Mar 04

<http://www.bma.org.uk/GMFoods> and [http://www.bma.org.uk/ap.nsf/Content/GMFoods/\\$file/GM.pdf](http://www.bma.org.uk/ap.nsf/Content/GMFoods/$file/GM.pdf)

The British Medical Association (BMA) has released their second interim statement on GM foods and health. In 1999, the BMA released an interim report on the health implications of GM food crops and held a round table meeting of experts on the topic in June 2003. According to the statement "The BMA shares the view of the Royal Society that there is no robust evidence to prove that GM foods are unsafe. However, we endorse the call for further research and surveillance to provide convincing evidence of safety and benefit." The BMA also noted the importance of sound scientific research to evaluate the impacts of GM crops.

Mini bio-chip enhances disease detection

Asia Biotech, 1 Mar 04. BioSciNews 3 Mar 04 (shortened)

In keeping with the global trend towards increased automation and miniaturization, scientists from the Institute of Bioengineering and Nanotechnology (IBN), Singapore, have developed a miniature lab-on-a-chip biosample preparation system that is set to transform the way we diagnose diseases such as cancer. Led by Xu Guolin and Dr. Mao Peilin, a team of IBN researchers filed a patent for this breakthrough device in November after almost a year of hard work. What makes the biochip different from other commercially available devices is its ability to isolate mRNA from extremely small tissue samples. mRNA extraction is an essential component of many biological studies such as molecular diagnostics and disease studies or detection.

Conventional mechanical tissue sample preparation methods are highly labor-intensive and time-consuming. The devices used are usually complex and bulky, and are difficult to automate, making them prone to operation error and cross-contamination. In addition, some of these methods generate a considerable amount of heat that would degrade the quality of the intracellular components desired. Due to the large working volume of conventional devices, a large tissue sample size is required. This also means that these devices required would be too large to be integrated within a biochip.

The IBN biochip, on the other hand, uses a combination of a chemical enzyme and mechanical shear force to digest tissue samples with high efficiency. The tissue dissociation, which takes place inside the microfluidic device channel, is fully automated, thereby reducing labor costs and contamination risks. Furthermore, the device, requires a much smaller amount of reagent, leading to further cost savings. Once the cells are lysed, we are able to extract mRNA from them using magnetic beads, "Xu explained. "The beads keep the mRNA in the device while we pump the unwanted components out of the chip. This ensures that only purified mRNA remains in the device." Tests have shown that the IBN chip prototype was able to obtain a high yield of 1.55mg of pure mRNA from only 10mg of tissue.

In disease detection applications, the lab-on-a-chip systems already in the market are typically DNA-based detection systems requiring patients to give blood samples," Dr. Mao said. "Our chip is the first system that extracts pure mRNA from tissue. This difference is very significant for disease detection and allows us to identify the responsible genes even at very early stages." For example, to detect the presence of cancerous cells in a patient, doctors have to perform a biopsy, taking a tissue or blood sample from the patient. Using conventional sample preparation methods, they would need to take a large tissue sample from the patient and it can take more than two days for the RNA to be extracted from the sample before the presence of specific genes responsible for cancer can be determined.

With IBN's biochip, this detection process will be easier and faster. Doctors need only take a very small amount of tissue sample from the patient without surgery so this step would be less invasive and hence less painful for the patient. IBN's mRNA extraction process is also more rapid and can be completed within two hours. As the tissue sample size required is much smaller, doctors will be able to detect the presence of cancer-causing genes even in early or benign stages. The challenge now is to integrate a reliable and highly sensitive detection device such as a biosensor into our biochip," Xu added. The team is currently working on the concept and hopes to achieve this sometime in 2004.

Australians willing to put themselves on the line for medical research

Research Australia & Investor Relations Strategies 1 Mar 04. BioSci News 3 Mar 04 (shortened0

Australians are prepared to pay more tax and put their own bodies on the line if it leads to improved health and medical research in this country. A national AC Nielsen survey commissioned by Research Australia has found 88% of Australians are prepared to pay higher taxes to ensure access to latest treatments and 88% are willing to pay an extra \$1 on each prescription if the funds are directed to health and medical research. Just under two thirds (60%) of Australians would be willing to personally participate in clinical trials of new medical treatments.

Research Australia Chief Executive Officer Dr Christine Bennett said the survey sent a clear message that Australians see health and medical research as a leading national priority and one of the top 3 most important areas of government spending and philanthropic support. The landmark findings were revealed in the second annual Research Australia Health & Medical Research Public Opinion Poll 2003 released today. The survey found that 64% of Australians would like to see at least a two-fold increase in total community spend on health and medical research, from under 2 cents of each health dollar spent to over 4 cents. In fact, a third (32%) of people would like to see current spending tripled to 6 or more cents of each health dollar spent by the community.

"Good health is incredibly important to Australians. So much so that they are prepared to pay more tax to have access to the best treatments. Four out of every five Australians believe that health and medical research has already made a difference to their lives," Dr Bennett said. "The survey shows health and medical research is a top of mind issue in Australia today. It holds promise and hope for a better and healthier future. These findings send an important message of encouragement for Australian governments, philanthropists and businesses looking to their triple bottom line, to support health and medical research," Dr Bennett said. Australians also believe funding health and medical research in Australia does and should make a very positive contribution to the health of the global community.

Other key findings of the survey of Australians conducted in November 2003, include:

- * 96% of Australians use the media as their main source of information on health and medical research and believe it is almost as useful as information provided by their local doctor.
- * 76% of Australians agree that stem cells derived from left-over IVF embryos should be used for research to find new treatments for disease.
- * 85% of Australians would like to see the Australian government support research to address global health problems, not just Australian health issues.
- * 78% of Australians believe Australia is a world leader in health and medical research.
- * Health and medical research was considered the most important area for corporate donations

New surveys on Nordic pharmaceutical biotech

Anna Johanssen, BSG BioNewsletter #7 2004 (shortened)

www.bioseeker.com/?report=bsgnpd2004

"Nordic Pharma Development 2004" is BioSeeker Group's latest survey on drug development in the Nordic countries (Denmark, Finland, Norway and Sweden) gives you a comprehensive overview as well as detailed information on pharmaceutical R&D in the region. Our survey covers 69 companies and over 700 pipeline projects, from early identification to marketed. This updated survey is available to you as a CD application, ready to be targeted with your specific questions. The product contains 2 major directories: the Drug Directory and the Company Directory. These 2 directories are neatly related to each other, making it easy for the user to go from company to pipeline drug or vice versa.

The "Nordic Biotech Industry Guide 2004" is a unique CD product that contains a searchable database of more than 860 biotech companies (474 Swedish, 181 Finnish, 160 Danish and 50 Norwegian). BioSeeker has divided the biotech industry into 16 different industry segments, such as Medical Device, Diagnostics, and Pharmaceuticals/Therapeutics etc. Depending on size and maturity each company is described with contact details, management and board, financial data and a short company profile. Through a direct link to the company website, you can do further independent research on each company.

This CD is an attractive information source of Nordic biotech companies not found anywhere else. Whether you are an international biotech or pharma company, venture capitalist, consultant or governmental agency you will find these products useful to locate M&A candidates, collaboration partners, competitors etc. Similar products are also available for the individual companies included in this product.

Biodiversity for development

Crop Biotech Update, 27 Feb 04 (shortened)

<http://www.scidev.net/Opinions/index.cfm?fuseaction=readOpinions&itemid=240&language=1>.

In a paper entitled "Conserving biodiversity for development," Mark Malloch Brown, administrator of the United Nations Development Programme (UNDP), underscored the importance of conserving diversity in achieving development. The author stated that biodiversity is a key development issue and frequently provides the 'welfare system of last resort' for poor people and communities. Citing the Millennium Development Goals (MDGs) as a means for the international community to improve the living conditions of the poorest of the poor, the author highlighted the role of biodiversity under the seventh MDG. The Millennium Development Goals are time-bound and measurable goals and targets for combating disease, illiteracy, environmental degradation, and discrimination against women with the ultimate aim of halving extreme poverty and hunger.

Brown also stated that an opportunity lies with the poor as most of the world's biodiversity exists in the economically poor countries. Hence, the author recognizes the prospect of enhancing poor people's income by permeating markets for sustainable produce, forest and agricultural products, as well as ecotourism. The author concluded that there is indeed a real opportunity to advance all the MDGs without undermining ecological capital. However, he stressed that this will only happen when we recognize that poor communities are at stake in safeguarding their own ecosystems as well as meeting their basic needs. Brown ended his paper by explaining that the real key to a sustainable future is to make mutually reinforcing efforts towards poverty reduction and conservation.

Consumers love frankenfood

David Bowe, The Wall Street Journal, Europe, 27Feb 04. Via AgBioView 2 Mar 04

(Mr. Bowe is MEP for Yorkshire and the Humber Region and member of the European Parliament's Committee on Environment, Public Health and Consumer Policy.)

If you really want to understand whether European shoppers will buy GM foods given the opportunity, ignore the agents provocateurs, the media and the panicked reactions of the big supermarket chains, and look instead at the behaviour of ordinary consumers. The media has had a field day with the irrationalism displayed by the major stakeholders. Supermarkets are more concerned with enhancing their own image and charging above-average prices than with telling the truth about the products. The GM industry itself, blindsided by an early wave of negative publicity, has retreated into public silence on the merits of its technology. So, despite the clear economic advantages, farmers across most of Europe have been forced to follow the irrational frenzy set in motion by others. Retailers have panicked and without market evidence, assumed there will be no market for GM and therefore chose to deselect such products. But for all the hysteria, there are signs that the fear of GM foods among farmers, politicians and retailers is unwarranted. We don't need to look far to see what happens when farmers and retailers are prepared to take a risk and let the public decide.

Take the example of Jeff Wilson, the Ontario farmer who grows conventional, biotech, and organic sweet corn side by side. Mr. Wilson's yield is separated out and labelled by type. The Bt corn outsells the conventional variety by about 5 to 1. And what about consumers? There are only two ways to understand their collective views. While consumer opinion polls can be helpful, the best way to understand what really matters to the consumer is to watch how they spend their money once they reach the supermarket till. When Safeway and Sainsbury's put GM tomato puree side by side with their non-GM counterpart in 1999 the proof was definitely in the puree. The GM product was seen to offer real added value, it was less expensive and in numerous blind tastings consumers seemed to prefer the flavour. It sold as well as the non-GM product. But despite the clear evidence that consumers did see the added value in the products, they were taken off the shelves in a wave of panic when green activists started to scare the pants off consumers with junk science. Consumers' purchasing behaviour will soon be put to the test again now that consumers will finally start to find the first labelled GM food products on shelves from Apr 04. The early signs are that the silent majority of consumers will happily choose to add GM products to their consumables mix, preferring to base their purchasing decisions on more tangible aspects such as quality, price, taste and safety. In this, they will act no differently from millions of consumers around the world who have been buying and eating GM products for years.

Consumer surveys have for a long time confirmed the old adage, the customer knows best. Yes, it's true that in recent years consumer surveys have shown distrust in GM technology. However, as borne out by a recent survey by KRC Research, this fear has been driven by inadequate information and an overdose of irrational disinformation from green groups that have chosen scare strategies over reasoned arguments. Eighty-two percent of respondents revealed that consumers "should have the choice to buy or not to buy GM foods." Consumer polls also show that the degree of comfort with this emerging technology is increasing with an increase in dispassionate information available about GM. As ordinary people get a sense that they are receiving more balanced information, they will choose to become participants and actors in the debate as opposed to confused onlookers. The conclusion is very simple: for all the posturing of some noisy opponents, it is the customer who will and should decide.

EU food agency clears Monsanto rapeseed

AP, Brussels. Via AgBioView, 2 Mar 04

The European Food Safety Authority said a GM rapeseed produced by Monsanto Co. was safe for human and animal consumption. The decision by EFSA, which advises the EU Commission on food safety issues, moved the Commission a small step closer to revoking the unofficial ban it placed on GM foods in 1998. EFSA said oilseed rape variant GT73, which is engineered to be resistant to herbicides is as safe as conventional oilseed. The EU Commission had asked the EFSA for a scientific evaluation after some countries questioned the validity of previous tests involving rats. EFSA said its tests have dismissed those fears. "The animal feeding trials reviewed by the panel showed that GT73 oilseed rape is as safe as the conventional one."

"We provided a simple scientific evaluation," said EFSA spokeswoman Anne-Laure Gassin. In Brussels, Monsanto spokesman Ken McDermott said: "we're happy that Europe is returning to a science-based regulatory system." But the St. Louis-based biotechnology company's battle is far from over. The EU's 15 member states are yet to vote on allowing import of the product. GT73 is grown in the US, Australia and Canada. It is allowed for sale in those countries, plus Japan, the Philippines and South Korea. Monsanto has applied for a license only to import, not to cultivate, GT73.

EU fails to reach decision on importation of Monsanto's NK603 biotech maize

Global Biotech Science News, 11 Mar 04

[http://europa.eu.int/rapid/start/cgi/guesten.ksh?paction.gettxt=qt&doc=IP/04/238|0|RAPID&lg=EN&display=.](http://europa.eu.int/rapid/start/cgi/guesten.ksh?paction.gettxt=qt&doc=IP/04/238|0|RAPID&lg=EN&display=)

On 18 Feb 04 the EU Regulatory Committee on the release of GMOs into the environment did not reach a qualified majority necessary to adopt the EU Commission's proposed measure allowing importation of Monsanto's biotech maize NK603 for use in feed and industrial processing. Belgium, Britain, Finland, France, Ireland, Netherlands, Portugal, Spain, and Sweden voted in favor of the application; Austria, Denmark, Greece, Italy and Luxembourg opposed and Germany abstained from voting. The proposed measure now goes to the EU Council of Ministers, which has 90 days to adopt or reject the proposal with a qualified majority. EU law provides that if the Council fails to accept or reject the proposed measure within 90 days, the European Commission shall adopt and implement the proposed measure.

UK ministers pave way for farmers to grow GM maize

George Jones and David Derbyshire, Daily Telegraph, (UK), 5 Mar 04. Via AgBioView 6 Mar 04

The Cabinet paved the way yesterday for GM crops to be grown commercially in Britain. Ministers rubber-stamped a decision by a Cabinet committee last month to give qualified approval for sowing GM maize. The move followed the publication of a study which found that GM maize was less harmful to the environment than the conventional crops and pesticides currently used in Britain. The announcement will be made next week, but GM crops are unlikely to be planted commercially in Britain for at least another year, possibly not until after the next general election. It follows the lengthy farm-scale trials of GM maize, beet and oilseed rape, a scientific review and a programme of public consultation.

Elliot Morley, the environment minister, said: "We have always made it clear that there will be no blanket approval. Every application will be decided on a case-by-case basis. If the science shows a particular crop should not be grown, we will not allow it to be grown. "The Government is not an advocate for GM, we're not here to sell GM to anyone. If people don't want to buy GM produce they don't have to. Clear and accurate labelling is the key to informed consumer choice, and all GM products will be clearly labelled." He said Britain had done more than any other country in considering the available evidence on GM crops with a science review, costs and benefits study, crop trials and a report on co-existence, as well as a public debate. However, anti-GM campaigners said the decision was based on flawed science and warned Tony Blair that he was "picking a fight with the British people".

A positive decision next week will not give an immediate green light to commercial cultivation, as all applications for planting GM seeds must be approved by the EU in Brussels. Peter Hain, the Leader of the Commons, later assured MPs that they would be able to debate the decision before GM crops were grown commercially. "No GM seeds will be planted this year because the planting season has passed," he said. The decision followed the publication of results from the 3-year, farm-scale trials last month, carried out by Acre, the Government's advisory committee on releases to the environment. They supported the growing of GM herbicide resistant maize but gave only qualified approval to GM herbicide-resistant oilseed rape and sugar beet. While GM maize was shown to increase biodiversity, GM rape and beet were shown to reduce farmland biodiversity and endanger insects, butterflies and birds.

The maize trials were criticised because GM crops were compared with conventional crops sprayed with atrazine, a chemical about to be banned. Critics called for a fairer comparison, with a less toxic pesticide. The new peer-reviewed study, published yesterday on the online version of the science journal Nature, looked again at the small amount of data from the trials covering alternatives to atrazine and other triazine pesticides. Prof Joe Perry, of the Rothamsted Research Institute, Harpenden, Hertfordshire, who led the study, said: "The comparative biodiversity benefits from GM herbicide-tolerant maize cropping would be reduced, but not eliminated by the withdrawal of triazines in the UK."

Sarah North, of Greenpeace, said: "Tony Blair has picked a fight with the British people. Once again he's pushing a pet project in spite of the evidence." The Government is braced for considerable public resistance to the decision and ministers may seek to defuse criticism by offering advice on the establishment of voluntary GM-free zones in areas of the country.

GM Farming: Approved in UK

The Economist, 11 Mar 04. http://www.economist.com/World/europe/displayStory.cfm?story_id=2502474

Some GM crops can now be grown in Britain. How scary is that? "Junk science" is how Elliot Morley, Britain's minister responsible for GM farming, describes studies that claim GM crops would be hazardous to Britain's wildlife and consumers. This week the government granted permission for a strain of GM maize to be grown commercially as cattle feed. That has incensed environmentalists and organic farmers, who say GM is unpopular (probably correct) and based on bad science (probably not). Three years of field testing have shown the herbicide-resistant maize, Bayer's Chardon LL, to be safe and even kinder to the environment than non-GM maize.

Two other crops on trial—a GM sugar-beet and a GM oilseed rape—will not be grown because they were worse for biodiversity (weeds) than conventional strains. The trials have not made the worries about introducing even a safe GM crop go away, though. Opponents say GM will stealthily take over the country by cross-pollination, will damage wildlife and introduce something nasty into the human food chain. How solid is all this? Evidence from America, which planted 105.7m acres of biotech crops in 2003, suggests concerns are overblown. In practice it is easy to separate crops and prevent them from cross-pollinating. Even oilseed rape, which is particularly promiscuous, can be kept over 99% pure if it is a hundred metres away from another plantation. Cross-pollination probably will happen, but so far it has caused no problems: genetic material in plants changes all the time through sexual reproduction anyway.

Damage to wildlife is difficult to measure, but there is evidence that GM has had a positive effect, with birds and insects returning to GM cotton plantations in America. Certainly, GM crops tend to need fewer chemicals to protect them. Monsanto says its sugar beet, which was on trial along with the Chardon maize, requires 46% less herbicide than a conventional strain. Supposed threats to consumers, whether human or animal, are the flakiest. The British Medical Association now says there is "very little potential for GM foods to cause harmful health effects" in people either. People have been eating the stuff in America for years, with no ill effects so far.

The messing around with genetic material that makes some people dislike GM crops has gone on for years in conventional plant breeding, where crops are exposed to radiation and chemicals to encourage them to mutate. According to the International Atomic Energy Agency in Vienna, over 2 000 types of crop have been bombarded with gamma rays to produce mutants, many of which are grown by organic farmers. "All food is Frankenfood," according to Professor Howard Dalton, chief scientific adviser to the Department for Food and Rural Affairs, "but everybody's got used to it." Maybe everybody will get used to GM soon, too.

Traavik must provide data to prove claims

Agnet, 1 Mar 04

"The statement made by Norwegian scientist Terje Traavik that 'blood samples from 39 people in Southern Philippines carried increased levels of 3 different target antibodies showing evidence of an immune reaction to the Bt toxin built into the maize gene to combat pests' needs to be evaluated based on the basic principles of immunology and immunobiology," Philippine Professor Nina Gloriani Barzaga says. "Traavik needs to show pertinent scientific data that establish his claims, before making press releases and unduly causing panic to the public. "It is important that Traavik specify which isotypes of antibodies were found to be increased in these individuals, the levels of increases in these individuals, the specific antigenic epitopes that these antibodies recognized, and his data should also be able to establish that the presence of these antibodies correlated with clinical signs and symptoms of hypersensitivity (or any biologic activity) among these individuals." It is also important for Traavik to indicate what types of tests were performed, and in which laboratories these tests were performed. There are accepted standardized and validated procedures used in any allergenicity testing.

"The MON 810 maize which is sold as *Dekalb 818 YG* in the Philippines has the *Bacillus thuringiensis* toxin *Cry 1Ab* which Traavik referred to as the protein that the Filipinos generated an immune reaction to." This is a serious allegation and if Traavik is indeed the scientist that he professes to be, he should be able to explain convincingly, how Bt maize pollen which is known NOT to carry the toxin, could have sensitized these Filipinos against the *Bt Cry 1Ab* toxin. "The *Bt cry 1Ab* protein that is in the *MON 810* maize has been assessed for allergenic potential based on established criteria and procedures. This toxin is not considered an allergen. This protein has no sequence similarity to known allergenic proteins based on 8-12 amino acid mapping for T cell and B cell epitopes. The toxin is also degraded rapidly when subjected to gastric digestibility studies, being degraded in less than 30 seconds, compared to major allergens being stable to gastric digestion for more than 1 hour, or minor allergens being stable for at least 2 minutes in simulated gastric fluid. "Traavik should provide us with the scientific data to prove his claims," the Professor says.

Nina Gloriani Barzaga, M.D., Ph.D. Prof of Medical Microbiology & Microbial Immunology, College of Public Health, University of the Philippines Manila. Director of the Institute of Biotechnology and Molecular Biology, National Institutes of Health Philippines. Director for Research, Biotechnology Coalition of the Philippines.

Scientist urges 3 new GM scares

Andrew Apel, Agbiotech Reporter, 1 March, 04. AgBioView 4 Mar 04. www.bioreporter.com

A scientist and former member of Norway's Royal Commission on GM has broken with protocol by claiming 3 new studies demonstrate serious health risks from GM foods, according to the activist group GE Free NZ (New Zealand). The findings of these studies, announced by director of the Norwegian Institute for Gene Ecology Terje Traavik, have not been published in peer-reviewed journals. "Publication of results typically requires a waiting period of up to 1 year or more," Traavik said. "With such evidence of possible human health impacts of GM foods already on the market, we believed that waiting to report our findings through publication would not be in the public's interest."

The 3 alleged findings are that Bt maize grown in the Philippines cause allergenic reactions in farming families living close by, that the cauliflower mosaic virus (CaMV) promoter used in GM crops was found intact in rat tissues 2 hours, six hours, and 3 days after it was mixed into a single meal, and that GM pox viruses in cell cultures recombined with natural viruses to create new hybrid viruses. "It is to be expected that Professor Traavik will be criticized by the pro-GE lobby for not waiting for peer-review," GE Free NZ said in a statement, adding that criticizing him would amount to an ... effort to suppress scientific debate and the study of risks from GE foods."

Agbiotech editor: Anyone familiar with the aftermath of the Pusztai rat/potato study, the Losey Bt maize/Monarch butterfly study or the Chapela Mexican maize biodiversity study will be able to guess how much damage the industry could suffer at the hands of activists by offering a tardy and timid response to claims such as these.

Counting chickens before they hatch

Life Sciences Network Media Release, 1 Mar 04

<http://www.lifesciencesnetwork.com/news-detail.asp?newsID=5437>

Professor Terje Traavik has put his reputation on the line by going public with warnings of serious health risks from GE foods before the research he cites has been published or peer-reviewed, Chairman of the Life Sciences Network Dr William Rolleston said today. "A responsible scientist would have presented their evidence to the appropriate regulatory authorities in a manner which allows time for proper scrutiny instead of using the media in an attempt to cause public panic and regulatory over-reaction. If this evidence is credible then the appropriate regulatory authorities will take it into consideration in their decision making as they have always done.

"GE free NZ is right to suggest that Professor Traavik will be criticized for circumventing the proper scientific process and it is probably no coincidence that Professor Traavik's claims coincide with the first major international meeting to discuss the implementation of the Cartagena protocol, which regulates the international shipment of GMOs. "We have seen these scare tactics before from the anti-GM lobby - Professor Puztai and his potatoes, Professor Kaatz and his bees, and the Monarch Butterfly story. All have failed the test of time through lack of credibility or because they were just plain wrong. Even Professor Traavik's own evidence on DNA vaccines failed to impress New Zealand's Royal Commission on Genetic Modification. "Professor Traavik should know that safety is based on considering all the evidence, taking into account its credibility and putting it into context with current risks," Dr Rolleston concluded.

Ecology Society calls for interdisciplinary studies of GEOs

AgBioView 4 Mar 04 (shortened)

http://www.esa.org/pao/esaPositions/Papers/geo_position.htm

From maize to carp to the bacteria in yoghurt, people have modified organisms for specific traits for centuries. Today, genetic engineering offers the potential to provide new benefits and new risks, as does any new technology. The Ecological Society of America (ESA)'s scientific position paper, "Genetically engineered organisms and the environment: Current status and recommendations," authored by an ESA committee of experts, addresses the nature of genetically engineered organisms (GEOs) and their possible impacts on ecosystems.

Potential environmental benefits from certain GEOs include more sustainable agriculture and better environmental management. For example, some GE crops can be grown with fewer pesticides and less soil erosion, while future GE trees might provide cleaner methods of paper milling. Future applications of genetic engineering extend far beyond traditional breeding, encompassing transgenic viruses, bacteria, algae, fungi, grasses, trees, insects, fish, shellfish and many other non-domesticated species. Unintended effects of GEOs released into the environment remain a concern for ecologists, regulatory agencies and the public. "Understanding how genetic engineering will affect organisms living and dispersing outdoors is a major challenge," said ESA President William Schlesinger. "This position paper provides insight into the ecological questions that should be considered before GEOs are released, as well as important recommendations for monitoring and evaluating GEOs once they are in the field."

Major recommendations of the ESA position paper include:

- ◆ GEOs should be designed to reduce environmental risks by incorporating specific genetic features, such as traits that limit unwanted gene flow between GE organisms and non-GE organisms.
- ◆ Rigorous, interdisciplinary scientific studies are needed to evaluate environmental benefits and risks posed by GEOs.
- ◆ Possible risks are inadequate or suggest the potential for serious negative effects on ecosystems.
- ◆ Well-designed monitoring will be crucial to identify, manage, and mitigate environmental risks when there are reasons to suspect possible problems.
- ◆ Science-based regulation should subject all transgenic organisms to a similar risk-assessment framework, recognize that many environmental risks are specific to the GEO and location, and incorporate a cautious approach to environmental risk analysis.
- ◆ Ecologists, agricultural scientists, molecular biologists and others need broader training and integrated communication to better address these issues.

While the ESA position paper recognizes the possible benefits GEOs may offer, it addresses several areas of concern. One worry involves the unintended escape of transgenic salmon into wild populations. Current findings show contradictory results of transgenic salmon's faster development and eating habits: these fish might out-compete the natural populations, or their traits "could increase their susceptibility to predation and stressful environments," according to the paper.

"Another concern is that GEOs will interbreed with native populations once released," said Allison Snow, lead author of the position paper and a professor at Ohio State University. "It is important to understand how an influx of transgenes can affect local populations, such as weedy relatives of crop plants. Also, new types of engineered microbes, insects, fish and horticultural plants are likely to require more ecological study than most domesticated food crops." "Several environmental risks associated with gene flow, the evolution of resistance, and certain non-target effects could be irreversible," Snow said. "Additional research is needed to evaluate circumstances under which this could happen."

These conclusions and recommendations echo earlier sentiments expressed by the Society's 1989 position paper, "The planned introduction of GEOs: Ecological considerations and recommendations." In addition to incorporating the new knowledge gained in the past 15 years, this latest ESA paper also discusses options for monitoring the long-term environmental effects of GEOs that have been released widely into the environment. Co-authors of the report are Allison Snow, David Andow (University of Minnesota), Paul Gepts (University of California, Davis), Eric Hallerman (Virginia Polytechnic Institute and State University), Alison Power (Cornell University), James Tiedje (Michigan State University), and LaReesa Wolfenbarger (University of Nebraska at Omaha).

The Ecological Society of America (ESA) is a scientific, non-profit, 8 000-member organization founded in 1915. Through ESA reports, journals, membership research, and expert testimony to Congress, ESA seeks to promote the responsible application of ecological data and principles to the solution of environmental problems. ESA publishes four scientific, peer-reviewed journals: Ecology, Ecological Applications, Ecological Monographs, and Frontiers in Ecology and the Environment. For more information about the Society visit: www.esa.org

Study on biological resources and traditional knowledge

CropBiotech Net. 5 Mar 04

A pre-publication version of the study by AK Gupta entitled "The Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge," which was commissioned by the World Intellectual Property Organization (WIPO) and the United Nations Environment Programme (UNEP) is available online at http://www.wipo.int/edocs/prdocs/en/2004/wipo_pr_2004_373.html.

In this publication, 3 case studies were considered including a 35-page study of the patenting of the gene Xa21 of wild rice from Mali, which confers resistance to bacterial rice blight. The press release of the study is available in English, French and Spanish. Interested parties may also email publicinf@wipo.int for more information.

NAS report on bioconfinement of biotech organisms

Global Biotech Science News, 11 Mar 04 <http://www.nap.edu/books/0309090857/html>

The National Academy of Sciences (NAS) has released a new report entitled "Biological Confinement of Genetically Engineered Organisms." In 2001 the US Department of Agriculture requested that the National Research Council's Board on Agriculture and Natural Resources (BANR) and Board on Life Sciences (BLS) review and evaluate bioconfinement of genetically engineered organism (GEO). The authors stress that "Confinement won't be warranted in most cases" but it will in some cases.

According to the report, "The evaluation of whether and how to confine a GEO should be an integral part of its development, and the need for bioconfinement should be considered early in the process. The report also noted that if a bioconfinement method is applied, the system must be supported by a rigorous and comprehensive regulatory regime with inspection and enforcement.

China - Agriculture of the future

T.C. Tso, Nature 428, 215 - 217 (11 Mar 04). Excerpts below. AgbioView 13 Mar 04

http://www.nature.com/cgi-taf/Dynapage.taf?file=/nature/journal/v428/n6979/full/428215a_fs.html

'Current technology will be insufficient to meet China's food demand in 2050. It is time to take action, says T.C. Tso.' China is experiencing strong economic growth. In 2002, its purchasing power parity (PPP), a useful indicator of economic standing, was second only to that of the US. If China maintains its recent 5% annual PPP growth rate, and that of the US stays at 2%, China's PPP will take the lead in 2023. With an annual growth in gross domestic product (GDP) of 4%, China's per capita GDP in 2050 would equal that of Japan today and attain a level that is three-quarters that of present-day US. China could surpass these levels if it addressed key social issues, such as the rural-urban divide, and harnesses the power of science and technology and its natural resources.

Disparities between rural and urban regions and between the east and west of China are all too apparent, and have resulted in a growing social gap. Currently, 70% of China's enormous population (predicted to reach a peak of 1.6 billion by 2030; ref. 2) lives in the countryside. Among this 70%, 50% are farmers, and 20% are 'mobile', they continuously migrate to areas where work is available. Those who don't move and instead choose to remain on their farm usually find themselves less than fully employed, because of the highly seasonal nature of their work. In addition, farmers' incomes are extremely low.

China has devoted great effort to developing its science and technology base, and has made remarkable progress. The objectives of this policy are to improve general welfare, increase national and international competitiveness and promote academic achievement. But, as measured by indicators such as the number of biotechnology and chemical patents and the innovation index, China still lags far behind other countries. It must increase its science and technology investment, which will ultimately lead to poverty reduction and to increased agricultural production.

To feed China's population in 2050, a scientifically educated workforce with an agricultural background will be vital. China may well need to use low-risk, GMOs and transgenic animals to meet its needs and scientific knowledge will be essential to ensure that they are successfully implemented. For China to produce enough food to feed its population at the middle of this century, it needs to use its precious resources wisely, be they human, land or water.

The path from the green revolution (the improvement of agriculture by using modern farming techniques such as high-yield plant varieties, irrigation, and adding fertilizer and pest control measures) to the gene revolution must be navigated step by step. The recent increase in funding of scientific and agricultural research is very welcome, but to solve all its agricultural problems, China must allocate more funds, up to 3% of GDP (from its present 0.9% level). If it does this, China's future will be very healthy and its excellent recent annual growth will be sustained. China could then take its place amongst the most developed nations, such as Japan and the US.

Career opportunities

SA BIOTECH CAREERS - the career site for the life sciences

SA BIOTECH CAREERS has launched its e-Recruitment initiative to assist candidates develop their careers in the vibrant biotechnology industry in South Africa.

If you consider yourself a candidate, visit our site, and:

- o Register your CV's with **SA BIOTECH CAREERS** via the Cape Biotech website (www.capebiotech.co.za), receiving a unique username and password once completed
- o Search for vacancies on the SA Biotech careers site using a keyword search or the job catalogue
- o Using your username and password, apply to appropriate vacancies
- o Send vacancies to friends and colleagues
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Organisations wanting to post a job vacancy on the site:

Contact Beverley Smith at Human Alliance (Pty) Ltd; Tel: 021 715 5061; Fax: 021 715 565 Email: Beverley@h-alliance.com; Website: www.h-alliance.com

Exhibitions

Blueprint Biotech LAB together with Exhibitions for Africa, are launching the first ever International Biotechnology Exhibition and Conference to take place in South Africa in 2005. The event is entitled BIOCENTURY WORLD SA. As a precursor to BIOCENTURY WORLD SA, a Biotech Pavilion will be featured at this year's EXCITE Exhibition (www.excitecape.co.za), taking place at the Cape Town International Convention Centre from 22 to 29 September 2004. Elna Jennings: e-mail elna@blueprintbiotechlab.co.za