Bio News

A brief report of COP/MOP 2

The second meeting of members to the Cartagena Protocol on Biosafety (COP/MOP-2) ended in a deadlock over the shipping documentation requirements for the bulk shipment of living modified organisms (LMOs, also called genetically modified organisms). The conference, held from May 30-June 3, 2005 in Montreal, Canada was preceded by a meeting of the working group of experts on liability and redress. The COP/MOP-2 agenda also included, notification requirements, risk assessment and management, socio-economic considerations, public awareness and participation, liability and redress and other scientific and technical issues.

The Cartagena Protocol on Biosafety is a legally binding international agreement that addresses the use of LMOs that may have an adverse effect on the biodiversity and risks to human health with a specific focus on transboundary movement. The Protocol states that detailed documentation on LMOs for food, feed or processing (FFPs) should be in place within two years of its entry into force, i.e., September 11, 2005. The COP/MOP-2, however, failed to fulfill this task due to disagreement over specifications of documentation, thereby deferring its decision to COP/MOP-3 to be held in Brazil in March 2006. New Zealand and Brazil opposed the requirements to specify which LMOs a shipment may contain, and thresholds for adventitious or technically unavoidable presence of LMOs and whether such presence triggers documentation; there were differences over the sampling and detection techniques. This strong resistance to specific labelling led to the breakdown of the conference.

The controversial provision on documentation is enshrined in Article 18.2 of the Protocol in which countries agree to label shipment

as "may contain" LMOs, but the specific and detailed aspect of labelling was deferred for further negotiations. In the COP/MOP-2 many developing countries, particularly the African countries opposed the "may contain" language and stated that a shipment should clearly label "contains" LMOs and list all the LMOs contained or may be contained in the shipment. The European Commission supported the use of thresholds by an importing country for adventitious presence of LMOs. India emphasized the urgent need for a decision on documentation.

Nevertheless, there was some progress on other discussions in the agenda. Members largely agreed that the COP/MOP develop guiding principles on risk assessment and management in accordance with the Protocol Annex III (on risk assessment). The COP/MOP encouraged the use of Biosafety Clearing House in spreading public awareness and for sharing and exchange of information. Regarding the socio-economic consideration of LMOs, some countries raised caution about its use as trade barrier. The absence of a common methodology for the evaluation of socio-economic impact of LMOs is another major concern. The meeting suggested further research into this topic and to allocate resources to such studies.

India enters joint research project on rice

The International Rice Research Institute (IRRI), Philippines and the Indian Council of Agricultural Research signed a $32 million joint research project on rice in mid June. The four-year research aims to discover genes for the development of rice that is resistant to biotic stress, including saline and drought resistant ones, and also the conservation of natural resources like water. It is also aimed at identifying new pests and diseases of rice and the measures needed to address the problem.

The government of India has a budgetary allocation of Rs 120 million for the research on functional genomics of rice. Earlier, research on the structural genomics was carried out by the IRRI with other partner research organizations. Dr Mangla Rai, director general, ICAR, stated that more than 40 research institutions in the country would be involved in the research and that budget allocations would be made accordingly. Dr Robert S Zeigler, director general IRRI added that the process of synergising would result in the mobilization of about $8 million a year which add upto $32 million in four years.

Work is in progress in four research laboratories across the country on the production of 'super rice' for which the IRRI has transferred materials that would be backcrossed with the Indica varieties. Meanwhile, the Japonica variety of 'super rice' is already in commercial cultivation in Vietnam and China. According to Dr B Mishra, director, Hyderabad-based directorate of rice research, the amount of beta-carotene in the new generation of 'golden rice' is 37 microgram per gram, which is significantly higher than the older varieties that have 1.3 to 1.8 microgram. The new generation 'golden rice' has two genes from maize while the older ones contained genes from daffodils.

Syngenta to set up R&D unit in Goa

Syngenta, the multinational agribusiness company plans to set up a research and development facility unit in India. The unit, to be built in Goa, is expected to be operational by the end of 2006. Other Syngenta R&D units are based in Switzerland, UK and the US.

One of the reasons for having a research facility in the country is the size of the market. "India has a big agricultural set up and we have a presence in the country. Hence, we would like to do research here," an official said. With the implementation of product patent coupled with the low R&D cost, India is fast becoming a hub for major agribusiness companies around the world. Syngenta will have more than 200 scientists working in this unit, for which construction is already underway. The $7.4 billion agri major spends 10 per cent of its total revenue on R&D, a substantial portion of which will be conducted in the Goa unit. Currently, Syngenta is involved in some activities in the country that include facilities for formulations, packaging and process development in the areas of crop protection, chemicals and seeds. "Syngenta proposes to build synthetic chemistry units and the large-scale synthesis team will be fully integrated with worldwide operations," said Pradip K Mazumdar, director, Syngenta, adding that the Goa unit will have facility for further expansion.

Unauthorised Bt cotton seeds seized in India

Authorities in India have initiated action against the unauthorized use of Bt cotton seeds. This initiative comes after critical comments about the weak implementation of India's biosafety regulation, and repeated demands by farmers' organizations and NGOs to seize unauthorized seeds proliferating in many states. Unauthorized Bt

cotton seeds worth Rs 2.13 lakh have been seized from dealers in the state of Andhra Pradesh and fake and spurious Bt cotton seeds worth Rs 64 lakh from Maharashtra. Similar incidents have been reported in other districts.

In May 2005, the Genetic Engineering Approval Committee banned the cultivation of three varieties of Monsanto's Bt cotton in Andhra Pradesh, following its poor performance, though cultivation is approved in northern India. Despite the ban, Bt cotton seeds are reported to be freely available in the cotton belt districts of Andhra Pradesh; community leaders have expressed concern over the continued sale. The state agriculture minister, Raghuveera Reddy has instructed officials to invoke the Essential Commodities Act and charge those that violate the ban.

Similarly, there are large-scale seizures of spurious Bt cotton seeds in several districts of Maharashtra. Action can be taken under the Seed Act, 1966, which recognizes the sale or fake or spurious seeds as a cognizable offence. Such violations have also been reported in the states of Madhya Pradesh and Gujarat and the All India Crop Biotechnology Association has expressed concern over the same. Ranjana Smetacek, Director (Corporate Affairs), Monsanto Holdings Pvt Ltd, the holder of the original license for Bt cotton seed technology hailed the initiative and stated that unbranded seeds have zero accountability and is a setback to the technology.

The rise in spurious seeds is mainly attributed to the volatile monsoon seasons, due to which farmers are unable to choose their sowing periods, leading to an accumulation of seeds and its consequent price hike. This further contributes to the intermingling of Bt cotton seeds with the traditional seeds during sowing.

Increased focus on Biotechnology in West Africa

The Economic Community of West African States (ECOWAS) held a four-day ministerial meeting in Bamako, Mali, to discuss the region's preparedness in adopting biotechnology to enhance agriculture and food security. Under the theme, "Strategies and Actions for Sustainable Agricultural Production, Safety for Humans and Environment," West African countries including, Ghana, Benin, Mali, Chad, Nigeria, Cote d'lvoire, and Senegal discussed the development of a biosafety policy and regulatory framework for the region. The conference was a follow up to the ministerial conference held in Burkina Faso in 2004, which

recommended raising public awareness about biotechnology, creation of a regional biotechnology centre of excellence, adoption of a regional biotechnology action plan, and regional harmonization of biosafety systems.

The conference also centred on the regional strategy for communication in biosafety, regional biotechnology programme of development and biotechnology related intellectual property issues. So far, Nigeria is the only West African state that has come out with a national policy on biosafety and has also developed a Centre of Excellence for Biotechnology. Ghana has prepared a biosafety bill which is awaiting approval from parliament. Christine Churcher, Ghana's Minister for Environment and Science said, "The acceptance of modern biotechnology and its potential role in enhancing food security in Africa will be determined by weighing the perceived risks against the potential benefits." Churcher added that sound regulatory biosafety framework in the region would help to address the food security and related development problems in the sub-region.

Professor Walter Alhassan, Programme for Biosafety Systems (PBS) Coordinator for West and Central Africa expressed concern over the region's slow progress and development in biotechnology as compared to other African regions. The PBS is a USAID supported project as part of its agricultural biotechnology initiative. Alhassan called upon African governments to work towards the development of biotechnology in order to reduce dependence on the donor community.

In this regard, African scientists at South Africa's Council for Scientific and Industrial Research will tie up with Pioneer Hi-Bred, a subsidiary of the multinational company, DuPont, to develop a genetically modified super strain of the staple sorghum grain which will be enhanced with vitamin to fight malnutrition. Pioneer Hi-Bred is also one of the key players in GM maize in South Africa.

The traditional sorghum does not have sufficient nutrients and adults and children who depend on sorghum as a staple diet can develop a form of hunger called micronutrient malnutrition. According to scientists at CSIR, the super sorghum will have higher levels of pro-vitamin A and E, iron, zinc and essential amino acids.

Some African countries have come under criticism for their refusal to accept GMOs as food aid, despite severe food shortage, while some countries have requested GM imports to be refined in a powdered form to avoid contamination with the local and traditional seeds.

African Union and NEPAD set up panel on biotechnology

The African Union and the New Partnership for Africa's Development (NEPAD) announced the creation of a panel on biotechnology to advise the Union on ways of building capacity and on the safe use and application of modern biotechnology.

The panel consists of a range of policymakers and senior scientists involved in the field of biotechnology from the continent. The panelist co-chaired by Ismail Serageldin of Egypt, former vice-president of the World Bank, and Calestous Juma, Kenya's former secretary-general to the UN Convention on Biological Diversity and current director, Science, Technology and Globalization Project at Harvard University. The panel also includes the Ghanian environment lawyer George Sarpong, director of Algeria based-African Agency for Biotechnology, Samuel Nzietchu, and Tewolde Egziabher, Africa's spokesperson and chief negotiator of the Like Minded Group of developing countries at the Cartagena Protocol on Biosafety, the legally binding international agreement on GMOs.

Juma said that the panel was set up for Africa to seek an end to being a 'victim' and to take charge of its future and assess the usefulness of all existing technological options for meeting its needs. Juma also added that important biotech research was being conducted in several parts of Africa and that the challenge lies in making the technology relevant to local needs and to ensure that existing institutions meet the challenge.

Norah Olembo, executive director, African Biotechnology Stakeholders Forum, which promotes public awareness of biotechnology said that the formation of the panel is "a clear sign the African Union is finally pushing Africa towards science-led development". On the other hand, Tewolde, a prominent figure in the biosafety negotiations, advocates a 'precautionary approach' towards the use of modern biotechnology.

The NEPAD Science and Technology Office in Tshwane, formerly Pretoria, in South Africa will coordinate the activities of the African Panel.

Alaska to label GM fish

A new law has been passed in Alaska that requires fish or fish products that are genetically altered, to be labelled. The bill is passed to protect the fishing industry which has suffered increased competition from

fish farming that has reduced income from salmon fishing in half over the past decade.

In May, the 'Frankenfish' bill on the labelling of GM fish won a unanimous support in the Senate. "The message that Alaskan sea food is more natural than seafood that has been engineered in a lab is a highly important marketing tool," said Senator Gary Stevens. He added, "This bill helps highlight Alaska seafood as distinct from genetically modified seafood, doing away with any vagueness that may exist to the consumer when purchasing without labelling, and reinforcing the natural message." Legislation on labelling of GM fish already exists in the EU, Japan, Australia and New Zealand.

What prompted the Senate Bill 25 was an application by an aquaculture company to the US Food and Drug Administration (FDA) to consider the sale of genetically modified growth-enhanced salmon. The Atlantic salmon is slated to be the first species that is contemplated for genetic modification and would be followed by catfish and tilapia. The bill requires retailers in Alaska to identify and label foods that contain fish and shellfish, and their derived products, which have been genetically engineered. Similar legislations have been introduced in Oregon and California.

The Biotechnology Industry Organization opposed the bill stating that it is contradictory to the FDA's principle of 'substantial equivalence', which focuses on the final product, and not the process used to develop a food product, to determine how it should be labelled. The Organization also mentioned that a similar proposal was struck down in 1996 when a federal court overturned a Vermont law that required the labelling of milk derived from cows treated with biotechnology-derived growth hormones.

EU council fails to lift GMO bans

The EU Environment Council failed to lift a ban by five member states on genetically modified (GM) products. This decision comes amidst a statement by the EU scientific authorities that GM products are safe. The Member states that voted in majority against the Commission's decision to lift the ban included Austria, France, Greece, Germany and Luxembourg. This move does not affect the current commercial cultivation of GM crops, but it is the first time that member states have voted against the Commissions intentions to lift the ban on GM products. These bans mostly relate to

cultivation and use in animal feed and include three maize and two rapeseed varieties.

Earlier, the European commission requested its Member States to lift their ban on five EU approved biotech crops. France, Germany and Greece were told to integrate the Deliberative Release directive — EU law that regulates GM food and crops — into their national statue books, but failed to do so. The ban on these GM products were imposed based on a clause in the Directive 90/220 that permits countries to take action if there is a real safety concern, supported by scientific proof. However, the Scientific Committees and the European Food Safety Authority concluded that there is no justification to the ban.

In 1998, the EU imposed a five year ban on GM products, which was challenged at the WTO by GM exporting countries including the US, Canada and Argentina who claimed that there is no scientific justification to the ban due to which trade in GM products was seriously affected. In the meantime, the German government failed to agree on a bill on genetic engineering which defines the rules on research.

Germany to fund research into safety of GM plants

The German government will support research funding into the safety of genetically modified (GM) plants over the next three years and will cost ten million euro. The research will examine the effectiveness of antibiotics and herbicides present in the GM plants and their effects on health and environment.

The research will be carried out in about 24 different projects out of which seven will focus on the replacement of antibiotics and herbicide resistance genes; nine will focus on transgenic maize varieties; the rest will focus on the safety aspect of fungus resistant biotech crops and also the impact of growing transgenic potatoes on the quality of land.

Antibiotic resistance markers have been used in the development of GM crops to identify and isolate the gene or genes used in genetic modification. The research will focus on the removal of these marker genes once the transgenic plants are created, or ensure their presence in a specified area of the genome to reduce the chances of developing side effects.

The projects on transgenic maize will focus on the ecological impacts of growing Bt crops and the potential ability of the insects in developing resistance to the gene.

Australia confirms GM contamination

In spite of the moratorium on its use in food crops, GM material has been detected in a Victorian canola seed export consignment that was bound for Japan. About 0.01 per cent of the shipment contained Topas 19/2 – a variety that provides tolerance to the herbicide glufosinate ammonium – developed by Bayer CropScience.

Though the source of contamination is yet to be confirmed, Victoria's Agriculture Minister Bob Cameron suspected the GM to have come from a Canadian gene that could have been inadvertently imported into the country in conventional seed during the late 1990s or early 2000, prior to the mandatory testing of GM material for commercial release in Australia. Bayer CropScience mentioned that trace levels of GM material are a reality in agricultural production systems in which seeds are exchanged between countries. Australian canola exports are worth around $400 million annually.

According to the government's Gene Technology Regulator, Sue Meek, the GM line was tested in Australia, prior to the setting up of the national regulatory system for gene technology in 2001, and was found to be safe for humans and the environment. Meek also mentioned that the GM trait was also found to be safe in Europe, China, the United States, Canada and Japan.

The federal opposition claimed that the incident raises doubts over the quarantine system and also indicated how widespread the GM variety had become in Australia's canola crops which are supposed to be GM-free. The Biological Farmers of Australia, the nation's largest organic farmer's organization urged the federal government to halt further seed imports that risk GM contamination, pending the introduction of a screening programme.

Syngenta to pay for GM corn tests

Random tests conducted in May on US grain shipment to Japan revealed that the consignments were contaminated with Bt 10, an unapproved GM corn variety developed by Syngenta AG, a Swiss agrochemicals company. A series of tests conducted on other US grain imports after this incident also confirmed the same. Following this incident, Syngenta agreed to pay for the costs incurred by the US grain exporters and Japaneses importers to test the shipment for the presence of the Bt corn strain. This move is seen as a precedent to the persistent doubts regarding the burden of proof and its associated costs.

The Agriculture Ministry declared in June that it would permit US cargoes contaminated with 1 per cent Bt 10. This decision was taken due to the fact that other cargoes that entered the country prior to the tests were also likely to be contaminated. "We must take appropriate risk management measures, based on the assumption that a certain volume of Bt-10 has likely already slipped into Japan," explained a ministry official, who added that the ministry could not rule out the possibility of Bt-10 contamination completely as long as Japan continues to import U.S. corn.

Japan is the world's largest importer of the grain and its demand is estimated at about 16 million tonnes a year of which 90 per cent is imported from the US, the largest exporter. About 75 per cent of the total import is used for animal feed and the rest for food and other purposes.

Under Japan's current rule, if a shipment were contaminated with unapproved GMO strain importers would either have to destroy the US corn cargoes or return them to the US, resulting in huge losses. The Japanese feed safety law tolerates up to 1 per cent contamination of feed grain with unapproved GMO provided the strain is approved by other countries that conduct GMO safety checks similar to that of Japan. However, the strain is not officially approved by the US, though the latter declared that Bt 10 poses no danger to people, animals or plants. Syngenta echoed the same and said that Bt 10 is genetically similar to Bt 11, which is approved for distribution as food and feed and for cultivation in the US, Japan and other countries.

Yemen unveils its National Biosafety Framework

The Environmental Protection Authority of Yemen released a draft National Biosafety Framework (NBF) on May 15. About 30 experts were involved in the development of the draft framework since 2003. The draft is funded by the United Nations Environment Programme (UNEP) as part of a larger initiative under the National Biosafety Project (NBP) undertaken in several countries.

Under the NBP the UNEP assists countries in developing a national biosafety framework in accordance with the Cartagena Protocol on Biosafety, a legally binding international agreement that regulates the safe handling and use of GMOs. The main elements of the biosafety framework includes a regulatory system, an administrative system, a

decisionmaking system, including risk assessment and management, and mechanisms for public participation and information.

Nizar Mohamed, UNEP's regional coordinator for Asia and the Pacific, said that the NBF would regulate the entry of genetically modified organisms (GMOs) into the country and guide national research on biotechnology. Mohamed said that the NBF is especially important for Yemen as the country is a net exporter of food. The Yemeni Environment Minister Mohamed L. al-Eryani mentioned that once finalized the NBF would be implemented by the national customs authorities and Yemen's Standardization and Quality Control agencies.

At present, there is no legal instrument for the safe application of GMOs. There are no research facilities to conduct research on GMOs at the national level and no GM crops are grown locally. As a result, there is no specific authority to regulate or monitor the application of biotechnology in the countries.

(Sources: RIS based on *Earth Negotiations Bulletin*, Vol 9(320). International Institute for Sustainable Development, New York; UNEP/CBD/BS/COP-MOP/2/15, Report of the COP/MOP-2, June 6, 2005; Anon, 2005, $32 million rice research project on the anvil, *The Financial Express*, June 22; Kausik Dutta, 2005, Syngenta to set up unit in Goa, Business Standard, Mumbai, May 19; Anon, 2004, Syngenta to set up R&D centre in Goa, *The Economic Times Online*, Mumbai, November 1; Ashok B Sharma, 2005, Seize Illegal Biotech Seeds, *The Financial Express*, May 9; Rahul Wadke, 2005, Cotton Farming in Maharashtra plagued by spurious Bt seeds, *Business Line*, June 28; www.checkbiotech.org, 2005, India: Agriculture department seizes BT cotton seeds in E.Godavari, checkbiotech.org, June 29; www.checkbiotech.org; African scientists plan GMO super sorghum, July 5, 2005; Expert urge Ghana to harness biotechnology, June 30, 2005; Biosafety: A West African Regional Approach, July 6, 2005; ECOWAS biotechnology conference in Bamako, June 27, 2005; ECOWAS ministers meet on Biotechnology, June 21, 2005; Chege, Kimani, 2005, www.SciDev.Net July 21; www.checkbiotech.org, June 30, 2005; www.ghchealth.com, May 10, 2005; EuropaBio, June 24, 2005; *The Financial Express*, June 27, 2005; www.checkbiotech.org, July 18, 2005; www.checkbiotech.org, July 21, 2005; www.monsanto.co.uk, July1, 2005; www.checkbiotech.org , July 14, 2005; www.checkbiotech.org, June 16, June 28, July 14; http://www.genet-info.org/, May 18, 2005; http://yemenbiosafety.org; and www.checkbiotech.org, June 27, 2005).