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Kenyan Minister supports GM Food

<http://allafrica.com/stories/200502040147.html>

Kenya can stave off its perennial food shortages and solve its environmental problems if it embraces prudent biotechnology applications. Assistant Minister in charge of Higher and Technical Education, Dr Kilemi Mwiria, told scientists at a workshop in Naru Moru that the solution to problems lies with the adoption of genetically modified organisms. Mwiria said despite the controversies kicked up by the critics of biotechnology, environmental degradation could be reversed. He said Kenya's marginal lands could yield more and boost the country's food security if the technology was implemented well.

He admitted that there have been a lot of controversies surrounding the application of biotechnology around the world. Some poor countries have rejected food and seed offers from donors who acted to alleviate hunger. Mwiria said if embraced, biotechnology could revolutionize food production in many countries. He said the fast fading indigenous forests could be reversed with the application of genetic engineering. The technology also had the capacity and potential to recover species threatened with extinction.

Mwiria said safety measures had been taken by the Government to make sure that Kenyans are not exposed to adverse side effects of the technology.

Policies to combat hunger outlined

<http://www.science.com>

Pedro Sanchez and MS Swaminathan outline the recommendations by the United Nations (UN) Hunger Task Force for "Cutting World Hunger In Half." Their focus is on Africa, and their paper is published in the January 21, 2005 of Science.

The Hunger Task Force has seven recommendations:

- 1) moving from political commitment to action,
- 2) performing policy to create an enabling environment for hunger reduction,
- 3) increasing agricultural productivity of food-insecure farmers,
- 4) improving nutrition for chronically hungry and vulnerable groups,
- 5) reducing vulnerability through productive safety rights,
- 6) increasing incomes and making markets work for the poor, and
- 7) restoring and conserving natural resources essential for food security.

Sub-Saharan Africa is the only region in the world where hunger prevalence is over 30%, the authors say, and the recommendations can be easily applied. Sanchez and Swaminathan suggest "entry points" for possible programs, including community nutrition programs, school feeding programs, and increased investment in soils and water.

Moore speaks out for GM crops

<http://www.columbiabasinherald.com/articles/2005/02/04/news/news01.txt>

Patrick Moore, founder of Greenpeace, was the keynote speaker at the 2005 Washington State Potato Conference. Photographs of Moore during the time he protested hydrogen bomb testing in Alaska, French atmospheric nuclear testing, Soviet whaling and seal clubbing off the east coast of Canada punctuated the beginning of his address before a packed house in Big Bend Community College's Advanced Technologies Education Center (ATEC). But after 15 years, Moore said, he got tired of being against things and decided to be in favour of something for a change. "I made the transition from the politics of confrontation, telling people what they should stop doing, to the politics of trying to find consensus about what we should do instead," Moore said. "After all, there is no getting away from the fact that over 6 billion people wake up every morning on this planet with real needs for food, energy and materials."

Moore said sustainability is about continuing to provide for those needs while reducing negative environmental impact, and is what he's been working on in the 20 years since leaving Greenpeace. Many environmentalists, he said, are anti-human, anti-science and technology, anti-trade and globalization, anti-business and anti-civilization, and refuse to make compromise. Moore then proceeded to list and dispel some of the current environmental stances against such issues as exotic species, pesticide residues on food, genetically modified foods, salmon farming, global warming and extinctions brought about by forestry.

In the case of genetically modified crops, Moore spoke of the need in Asian and African urban slums for Vitamin A. The people depend on rice as a staple in their diet, which has no Vitamin A. Half a million children go blind each year as a result of that deficiency. A friend of Moore's in Switzerland has found a way, using daffodil genes to create genetically modified golden rice, to provide the necessary vitamins and decrease the cases of blindness brought on by Vitamin A deficiencies. But environmentalists refuse to accept the benefits, because of what Moore called the precautionary principle -- something might go wrong. "They say they will tear it out of the ground if anybody dares to plant it," he said. "Why? Because of unspecified risks to health and the environment."

"But no one has been able to say a single risk that is actually tangible or meaningful", Moore said, "when the risk of not planting the golden rice means 500,000 more cases of children going blind each year. Moreover, Greenpeace and the like have effectively blocked the rice from being given to farmers of the developing world, when the Golden Rice Humanitarian Project has agreed that any farmer making less than \$10,000 U. S. dollars a year would get the seed for free." The risks of doing something need to be weighed against the risks of not doing it, Moore said.

"It is exactly the same with crossing the road and why the chicken did it - when you come to the curb, the precautionary approach means you look both ways before you step off the curb," he said. "If you see there's nothing coming, you want to get to the other side because of the opportunity that's over there, so you walk out across the road, having looked both ways. A 747 comes hurtling out of the sky and crashes right on you halfway across the road. That is a risk. There is always a risk. It could happen. It's the opposite of a miracle. But it's not likely to happen, and it's not likely

that anything is going to go wrong with the golden rice, and no one can even think of a 747 analogy to go with that."

GM development in Africa

<http://www.academicjournals.org/AJB/PDF/Pdf2004/Nov/Sithole-Niang%20et%20al.pdf>

In "Putting GM Technologies to Work: Public Research Pipelines in Selected African Countries," Idah Sithole-Niang, of the Department of Chemistry, University of Zimbabwe, and colleagues identify and examine public research pipelines for GM crops in Zimbabwe, Egypt, Kenya, and South Africa, and offer suggestions on improving the state of GM research for each country based on their findings. Their research is documented in the November 2004 issue of *The African Journal of Biotechnology*.

For instance, South Africa, the report states, presents an important case study. The research its scientists undertake is required to be linked to industry, with the aim of providing relevant products to end users.

Researchers also found that 13 public institutions in the 4 countries have stably transformed 21 crops, with 17% of the events for maize, 13% for potatoes, and 11% each for sugar and tomatoes. Of all traits incorporated, virus resistance comprised 34% of all crops, while insect resistance made up 20%.

The report adds that, although regulatory systems and biosafety policies have been under development for over ten years in Africa, progress in regulatory decision-making has been complicated by efforts to conform to the Cartagena Protocol on Biosafety and has been subject to delays and moratoria.

To minimize time delays for approvals, the paper says that countries could adopt a more efficient "single window" regulatory approach. It also notes the possibility of conflict of interest in cases where biosafety information is provided by the makers of GM crops.

The researchers hope that their data will be useful in formulating new policies, including greater South-South collaboration.

African politicians challenged

<http://www.isaaa-africenter.org>.

The African struggle to overcome hunger and food deficit can only be achieved through concerted efforts and strong political will from its leaders, a leading scientist has observed.

Nobel Prize laureate Dr. Norman Borlaug noted that politicians were shunning the role science can play towards developing the African continent. In a keynote address to over 200 African crop breeders in the 2nd general meeting of the Biotechnology, Breeding, and Seed systems for African crops in Nairobi, Kenya, Dr Borlaug said that much of the achievements made during the green revolution could be achieved in Africa.

"What we need is for two or more African politicians to be committed to the goal of eradicating hunger. This can only be done through the use of various scientific means at the continent's disposal," he added.

While officially opening the forum, Kenya's Minister of Agriculture, Kipruto arap Kirwa challenged scientists to translate their research work into viable projects that would help the African farmer in combating food insecurity. "We must work closely with the private sector and create an environment that we can increase their participation in agricultural development and in extending the benefits of research to African farmers," noted Kirwa.

Tanzania to accept GM goods

<http://allafrica.com/stories/200501270476.html>

Tanzania is drafting laws to pave way for the introduction of GM, which anti-GMO campaigners and some African nations fear may harm people or damage local crops.

The East African country of 35 million is frequently beset by food shortages due to recurrent drought and crop failure.

"It is one of the breeding methods that we have to eventually adopt. We are working on rules and regulations which will govern the introduction of genetically modified technology into the country," agriculture minister Charles Keenja said.

Most Europeans tend to be wary of GM crops and foods, but growers and consumers in the US are more accepting.

In Africa, where food shortages are frequent, some countries have banned genetically modified food imports, while others have turned to them because of the potential for hardier crops. The issue is further complicated because some food aid given in Africa can contain GM products.

The minister said the legislative process could take until the end of the year, at which time Tanzania would decide what types of food it would import.

There are fears that the technology could bring in genetic material harmful to Tanzanian crops, the environment or human health, Keenja said. "We are trying to be careful so that we do not import the adverse effects of the technology. So eventually, we know we shall have to adopt, but we want to be careful," he said.

Genetics Key to Future

<http://www.montereyherald.com/mld/montereyherald/news/10737618.htm>

The science of genetics can help lower the cost of health care, increase the world's food supply and even contribute to homeland security, Time Magazine's Scientist of the Year for 2000, J. Craig Venter, told an audience of several hundred at the annual meeting of the Community Hospital Foundation.

But progress could be delayed, Venter warned, because many people don't understand basic principles of science and statistics. Venter, founder and president of the Venter Institute and the Science Foundation, headed the team that published the map of the human genome -- the entire sequence of genes in humans -- in 2001.

In his keynote address at the Monterey Conference Center, Venter cited colon cancer as an example where applied genetics can improve health care. "When people turn 50, there are two things they're supposed to get," he said, "an AARP card and a colonoscopy. Personally, I was more upset about the AARP card."

But people who are at high risk for colon cancer shouldn't wait until they're 50 to start getting colonoscopies. That could already be too late. The key is for high-risk people to know who they are. And these days they can. A variety of gene-based tests are available to give them that information. Once they know, they can take steps to prevent the disease, or at least catch it at an early stage.

"We need to go in the direction of trying to predict disease and prevent it," Venter said. "It's the only way we're going to lower the cost of health care." And Venter leans in the direction of trying to increase food production by genetically modifying crops -- as long as it's done carefully. "Natural tomatoes are small little green things the size of my thumb," he said. "Just about everything we eat has been genetically modified, but it's happened over hundreds of years by random, gross experiments."

Many people don't understand that though. So if we change just one gene on purpose, for reasons based on solid research and proven facts, much of the public thinks it's dangerous, Venter said. "We have a really bad education system when it comes to anything that has to do with basic science."

Facing biotech foods without the fear factor

Jane E. Brody, New York Times, January 11, 2005

Almost everywhere food is sold these days, you are likely to find products claiming to contain no genetically modified substances. But unless you are buying wild mushrooms, game, berries or fish, that statement is untrue. Nearly every food we eat has been genetically modified, through centuries of crosses, both within and between species, and for most of the last century through mutations induced by bombarding seeds with chemicals or radiation. In each of these techniques, dozens, hundreds, even thousands of genes of unknown function are transferred or modified to produce new food varieties.

Most so-called organic foods are no exception. The claims of no genetic modification really refer to foods that contain no ingredients that are produced through the highly refined technique of gene splicing, in which one or a few genes are transferred to an organism. But alarmist warnings about the possible hazards of gene splicing have made the public extremely wary of this selective form of genetic modification. Such warnings have so far been groundless. "Americans have consumed more than a trillion servings of foods that contain gene-spliced ingredients," said Dr. Henry I. Miller, a fellow at the Hoover Institution and author, with Gregory Conko, of "The Frankenfood Myth," a new book that questions the wisdom of current gene-splicing regulations.

"There hasn't been a single untoward event documented, not a single ecosystem disrupted or person made ill from these foods," he said in an interview. "That is not something that can be said about conventional foods, where imprecise methods of genetic modification actually have caused illnesses and deaths."

It is no secret that the public's understanding of science, and genetics in particular, is low. For example, in a telephone survey of 1,200 Americans released in October 2004 by the Food Policy Institute at Rutgers University, 43% thought, incorrectly, that ordinary tomatoes did not contain genes, while genetically modified tomatoes did. One-third thought, again incorrectly, that eating genetically modified fruit would change their own genes.

In another 2004 telephone survey, in which 1,000 American consumers were questioned for the Pew Initiative on Food and Biotechnology, 54% said they knew little or nothing about genetically modified foods. Still, 89% said that no such food should be allowed on the market until the Food and Drug Administration determined that it was safe. What most respondents did not seem to know is that almost none of the foods people eat every day, which contain many introduced genes whose functions are unknown, have ever been subjected to pre-marketing approval or post-marketing surveillance.

Why should people object to the presence of a single new gene whose function is known when for centuries they have accepted foods containing hundreds of new genes of unknown function?

Redistribution is not the answer

AgBioView (agbioworld@yahoo.com) Alan McHughen, Feb 13, 2005

Globally, a thousand people die of hunger every hour - over 800 million are chronically malnourished. Yet studies consistently conclude that the world actually produces enough food for everyone; if only it were more evenly distributed we could eradicate hunger.

This is a major plank in the argument against using modern farming methods to increase food production.... There's already enough food, so we don't need modern technology. "All we need do", according to this simple argument, "is to redistribute the surplus grain from those who have it to those who don't." But humans have been starving for eons, even as the world has been producing grain and other food surpluses all along. Clearly, if redistribution were as simple a solution as some suggest, hunger would have been eradicated long ago.

The same argument can be made of poverty. On a world scale, poverty is widespread and massively crippling, yet there is plenty of total wealth. We could eradicate poverty simply by taking the surplus wealth from rich people and giving it to the poor. As with global food production and

hunger, society has always had poor people in a world filled with bountiful riches. Hunger persists, and the simplistic solutions simply don't work. Worse, they actually impede the development of realistic solutions to reduce, if not eradicate, hunger and poverty.

Biotechnology and other techniques of modern farming offer a practical means to provide more nutritious food to more people, and do so in an environmentally sustainable manner. Yet these methods are under attack by some of the very people who claim to represent the hungry and impoverished. Biotech crops and foods have now been grown by farmers, and eaten by hundreds of millions of consumers, for ten years. In that time, farmers report a dramatic drop in pesticide usage, increases in yield and higher quality grain with less insect and microbial damage and contamination. Important also is the safety record: after ten years, there is still not a single documented case of harm from eating biotech foods.

But let's return to the 'redistribution' scenario and question its feasibility. Is it realistic to expect American farmers, responsible for much of the world surplus grain, to deliver that excess, uncompensated, to the hungry overseas? Will our productive farmers continue to grow surpluses if they have to give away the excess grain? Having the world's poor and hungry fed by American farmers does nothing to stimulate self respect and self sufficiency. In banning biotech crops and foods, we deny the impoverished and hungry a means to overcome both, and continue the cycle of dependency on charity handouts.

American farmers have overwhelmingly adopted biotech crops, as have farmers in every country where such crops are allowed. Because the grain surpluses come mainly from these biotech crop farmers, redistribution faces another roadblock. The same activists spouting the 'redistribution' argument have succeeded in banning biotech grain in many hungry countries. Since biotech grain forms the bulk of the surplus, redistribution to those countries will be prohibited, and the people will continue to be hungry.

One of Nature's immutable laws holds that simple solutions to complex problems don't work. Let's reject this redistribution fallacy and focus on real solutions.

Biotech helps remove contaminants from waste water in South Africa

www.biopad.org.za

Disputes arising in 1996 from the pollution of the Blesbokspruit wetland from extraneous mine water resulted in the urgent need to implement a robust and cost effective solution in order to remove heavy metals, aromatic pollutants and pathogens from the waste stream. The Rhodes BioSURE Process[®] is a positive step towards treating the total volume of water discharged, as well as to restoring the ecological character of this wetland.

The technological innovation involves the linkage of primary sewage sludge which serves as an inexpensive carbon and energy source to fuel the biochemical reactions that removes sulphur from the acidic rich mine wastewater.

The BioPAD BRIC project involving technology development for the Rhodes BioSURE[®] Process has resulted in the commissioning and launch of a 10 ML/day process plant at Ancor Works in Springs including a 2.5 km pipeline linking the Grootvlei mine and the wastewater treatment works. The project comprised of a consortium of members including the Environmental Biotechnology Research Unit of Rhodes University and East Rand Water Care who have answered a number of critical research questions and a detailed market survey as well as a business plan which has been developed in order to bring this technology to a market ready status. Technical research activities undertaken include description of the microbial and process kinetic functions, bio-filtration studies for polishing of the final effluent and piloting operations.

Mr Butana Mboniswa, CEO of BioPAD said that the BioSURE Process[®] presents a good example of how innovative research ideas followed by technology driven outcomes can provide meaningful and tangible solutions to satisfy the requirements of multiple players within our economy. "Biotechnology is clearly emerging as a robust and sensible tool for an integrated and sustainable approach to waste utilization." said Mboniswa

The development of the technology to its current stage represents the culmination of eight years of research and development and includes the intellectual property vested in seven Water Research Commission patents.

Study shows that GM maize can benefit Africa

<http://www.isb.vt.edu/news/2005/artspdf/feb0503.pdf>

Poorer farmers in low potential areas in Africa can benefit more from planting Bt maize. So says a study on "Assessing the benefits and risks of GE crops: Evidences from the insect resistant maize for Africa project" by H. de Groote and colleagues. Results of the study showed that most objections to Bt maize cannot be substantiated. These objections include inability of the technology to address small farmers' needs, irrelevant crop traits relative to demand, and agro-businesses benefiting more from it.

An evaluation of the Insect Resistant Maize for Africa (IRMA) project that started in 1999 was done and after five years of research in the first phase, it can be shown that most concerns against Bt maize can be answered. The project used both conventional breeding and biotechnology and considered both biophysical as well as social aspects of the technologies.

Groote and colleagues noted that demand for Bt maize is likely to be high since maize is a major food crop in Kenya yet production remains low. Among the top constraints that can be addressed by the technology include problems related to seed quality, pest problems, and yield losses. Farm surveys showed that most areas had enough alternative hosts that form natural refugia and prevent the build-up of resistance against the toxins.

NOTICEBOARD

September 26 - 30, 2004 – Biosafety Symposium Proceedings released. The proceedings of the 8th International Symposium on the Biosafety of Genetically Modified Organisms have been released. Conducted in Montpellier, France, the symposium tackled such topics as the commercialization and biosafety aspects of Bt and other insecticidal crops, the biosafety aspects of virus-resistant transgenic crops, GMO regulations worldwide, and systems approach in biosafety debates and biosafety communication.

(Visit http://www.isbr.info/document/proceedings_montpellier2004.pdf).

March 10 – 11, 2005. - Nordic Seminar on GM food. The Swedish Ministry of Agriculture, Food, and Consumer Affairs, in cooperation with the Nordic Council of Ministers, presents GMO Food and Safety: State of Play in the Nordic and Baltic Countries, a Nordic seminar about the use of Genetically Modified Food (GMO) in the food chain. The seminar will be held in Stockholm, Sweden and will give an up-to-date view of how different stakeholders perceive the safety aspects of GM-derived food in the Nordic and Baltic countries. The speakers represent food producers, NGOs, authorities, legislators, and scientists.

The deadline for registration is on March 1, 2005. For more information, contact Ms Christina Isaksson at christina.isaksson-eldh@agriculture.ministry.se, or Dr. David Carlander at david.carlander@slv.se

June 5 - 8, 2005 - *In vitro* Biology meeting. The 2005 *In Vitro* Biology Meeting will be held in Baltimore, Maryland. It will focus on issues relevant to plant, vertebrate, invertebrate, and cellular toxicology research. For more details, visit <http://www.sivb.org/meetings.asp>.

July 6 – 10, 2005 - 9th ICABR International Conference on Agricultural Biotechnology.

The conference will be held in Ravello, Italy. The call for papers is posted at the following web address: http://www.economia.uniroma2.it/conferenze/icabr2005/call_for_paper.asp.