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Seeds of the future

JACKLYNNE HOBBS - Jan 29 2009 06:00

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MAP



Farmers clear land in Limpopo. Small-scale farmers' knowledge of genetically modified crops is still limited. (Photo: Paul Botes)

In a year of spiralling food prices, riots over supplies in West and Central Africa and looming famine elsewhere, there were no shortages of reminders in 2008 about how perilous the state of food provision is across much of the continent. Never far behind these reminders were column inches and sound bites on the role of genetically modified (GM) crops in helping Africa feed itself.

A recently concluded initiative tried to ensure this debate reaches a group of people who lack information about GM crops, even though their livelihoods stand to be profoundly affected by the course of biotechnology: small-scale farmers.

Organised by Biowatch, a non-governmental group based in Cape Town, the seven-month programme has held three workshops to inform farmers about the implications of cultivating genetically modified organisms (GMOs) and to equip them for lobbying policymakers.

These events, which took place between June and December in the Eastern Cape, KwaZulu-Natal and Limpopo provinces, attracted about 60 farmers and a handful of officials.

Funding for the initiative was provided by the Southern Africa Trust.

South Africa allows farmers to grow GM cotton, maize and soy altered to resist insects, tolerate herbicides or both. It is the only state in Africa with commercial production of GMOs, notes Biowatch.

For supporters of GM technology, these crops offer farmers a revolutionary way of tackling problems that undermine agricultural productivity: pests and weeds today, dry conditions tomorrow, if current research delivers the goods.

Supporters also say GMOs yield benefits such as reduced pesticide use with crops that are resistant to insects -- and point to the possible gains from modifying organisms to make them more nutritious.

Golden rice, a GM variety yet to be made available to the public, has been engineered to enable consumers to increase their intake of vitamin A.

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For critics, however, tampering with the genes of plants is an endeavour that risks having unexpected and possibly negative effects along the rest of the genetic sequence, for consumers' health and for the environment: often cited are fears of the so-called "super weeds" that could emerge if interbreeding of plants enables the spread of genes that allow for herbicide tolerance.

"I'm not saying we should do away with GMOs," says Lawrence Mkhaliphi, Biowatch's KwaZulu-Natal outreach facilitator, who helped oversee two of the workshops.

"But we need to be aware of the risk factors. We shouldn't compromise our farming or food."

The ability to make informed choices about the cultivation of GM crops is of even greater importance when viewed against South African legislation on GMOs, which enables farmers to be held liable for damages resulting from these organisms. This is a problem for all agriculturalists, but especially for small-scale farmers with little capital.

The Genetically Modified Organisms Amendment Act, signed into law last year, fails to address this situation, says Biowatch. Regulations for the 2007 Bill that may remedy matters are being discussed; but to date, says outgoing Biowatch director Leslie Liddell, "There has been no public participation on the development of the regulations."

These issues were among topics dealt with in the workshops, with the importance of saving seeds to preserve the biodiversity that is key to helping farmers meet constantly evolving threats from diseases and the like.

South Africa's strategy on biofuels also came under discussion. Biowatch reports fears among



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small-scale farmers that they will find themselves forced off their properties in a scramble to put more land under cultivation for agrofuels.

For workshop participant Jabulani Tembe, the debates were useful in offering alternatives to production based on GM crops and the use of chemicals, notably organic farming practices.

"I have already started providing training to farmers and organised community groups" concerning these practices, says Tembe.

Nonsezeko Mazeka is also trying to put the workshop knowledge into practice in the Eastern Cape municipality of Mbizana. With daughter Nobuntu translating, she recounts that she convened a meeting with a local official in September to "look at the information that has been given...and see what to do in terms of changing the attitude that the municipality and the Department of Agriculture have towards organic farming".

Should Mazeka's efforts succeed, it will be a welcome change from a situation where, says Biowatch, small-scale farmers have been sidelined in discussions about GMO policies.

As case studies prepared for the workshops indicate, these debates tend to take place in urban areas, excluding farmers almost as a matter of course. Inadequate education campaigns about the issues at stake further undermine farmers' ability to make their voices heard.

Day-to-day interactions with agriculture officials may do little to improve matters.

"My understanding has been there's no capacity to engage," says Munyaradzi Saruchera, the main facilitator of the workshops.

"I met two senior agronomists in the Eastern Cape at the provincial department of agriculture in East London. They didn't know what a GMO is."

At the time of going to press, comment from the National Department of Agriculture was unclear as to whether the officials that assist small-scale farmers are properly briefed on GMOs.

But for Mkhalihi, past traditions are what hold the real seeds of the future. "I think in our government the officials are looking for a new, 'civilised' way of doing things and not actually looking at what kept society there for a long time without their intervention," he says.

"What the government officials should be doing is to listen to the grassroots."

Tags

• food crisis

Comments

There is plenty of research showing the positive aspects of genetically modified agricultural products. Would someone please show me some reputable scientific research to substantiate the supposed negative side to genetic engineering?

The Bio-terrorists who rant about genetic engineering fail to tell us that humans have been modifying the genetic makeup of plants and animals through selective interbreeding since long before Mendel identified genetics in the sweet pea in 1860. Why are the bio-terrorists silent concerning highbred maize? Why do they say nothing about farmers using prize bulls to improve their herd?

This dishonest display of supposed "morality" hinders human progress.

John Bond on January 29, 2009, 9:56 am

Genetic modification is not breeding. They are very different, and to claim otherwise is either ignorance or intentionally misleading.

So, from a "bio-terrorist" who believes in openness, progress and technology for the common good, not manipulated, secretive and for the benefit of a few shareholders at the expense of our food security and safety, I suggest you take another look at the evidence. It's much more difficult to show a negative effect, as there are so many variables, and the effects may play out over years. The industry studies are short-term, and therefore meaningless. It's the tobacco industry all over again - the evidence has leaked out from those brave scientists willing to seek truth - unfortunately they've generally faced sustained campaigns ridiculing them from an industry that wants its profits protected.

The few long term studies that have been performed have unfortunately mostly shown negative results.

Human ingenuity has been hijacked by greed and commerce, and the game is played out in soundbites and political games.

Ian Gilfillan on January 29, 2009, 11:57 am

John Bond: as a dog breeder I am aware that we have been "genetically modifying" animals for a long time. But we have never introduced genes which were not in dogs before; we select our breeding stock so as to (hopefully) concentrate the desirable and avoid the unwanted. We have effectively reduced the gene pool in many breeds, and often find that unexpected faults are also attached to the genes carrying the features we desire. This is a long slow process and every generation has to be assessed so we know when to "go back to basics" and introduce more variety into the gene pool. Real genetic modification involves splicing different species together. We will not know for at least one whole generation of humans whether any unexpected consequences appear. For example, no one can guarantee that grain which has been GM'd to resist bacteria will not have a negative on our natural intestinal bacteria, which are essential for life. Any such guarantee would require clinical trials over a lifetime - no one has done this; nor will commercial developers because the financial cost is too high. I don't understand why the public or farmers should be made unwitting guinea pigs. Surely the right to informed consent should exist?

Dawn Eagle on January 29, 2009, 12:24 pm

Ian – I am totally confused. What is selective breeding if it isn't to introduce a particular desirable gene? Perhaps it is time to read up on the genetic attributes in living organisms. I reiterate Ian, please give me the web address of these reputable scientific studies showing negative results, I am keen to advance my knowledge

Dawn – Yes, I agree fully, labelling is desirable. There may be a bit of a problem because we need to be told exactly what gene has been inserted and for what purpose. In addition each of us need to know what the gene did in its previous organism. It took several supercomputers 5 years to map the human genome so the average person may have a problem. Just labelling it "Genetically Modified" is pretty meaningless. I'm sorry but I don't have some pat solution.

Another fascinating observation is how genetic engineering creates almost total abject fear among Europeans (including the English) and their descendants and not the rest of mankind. It reminds me of the absolute fear Americans had for Telsa's high voltage alternating current electricity one hundred and ten years ago.

John Bond on January 29, 2009, 2:11 pm

Great article on GMOs and so nice to hear a South African perspective on the issue. Just a bit surprised to read the article and comments and not see one mention of Monsanto.

I think a lot of people might not necessarily have a problem with plants (or animals) being genetically modified, but they do have serious problems with the fact that Monsanto, amongst other organisations, deliberately genetically modifies the seeds they sell to be infertile so that farmers cannot get them to germinate and so continuously have to buy

new seeds from Monsanto.

There are reasons that many "Bio-terrorists" regard Monsanto as the archetypal greedy, bullying, lying, cheating Multinational out to enrich itself at the expense of the third world. As Wikipedia diplomatically describes it, "Monsanto's development and marketing of genetically engineered seed and bovine growth hormone, as well as its aggressive litigation and political lobbying practices, have made the company controversial around the world and a primary target of the anti-globalization movement and environmental activists."

Richard Parker on January 29, 2009, 10:24 pm

The real concern is not so much about GM crops, it is about the fact that the companies who develop the seeds own the worldwide patent on the product. They have sole and total rights to allow or to stop farmers from using the products. They are also taking legal action for breach of patent, in order to claim compensation from farmers who do not use their products, but who end up with GM crops on their land as a result of wind, etc.

If this is allowed to continue, the worlds production of food will be owned and controlled by the chemical companies who have manipulated and patented al food sources.

If you use GM seeds, the manufacturer owns you.

<http://www.irishseedsavers.ie/article.php?artid=295> (I hope this link works but if not, Google 'GM company sues farmers for breach of patent')

Gary Thorpe on January 30, 2009, 2:12 am

Yea that's right immediately accuse anyone who opposes your point of view of being a terrorist, that's a really good way to shut up any voices of sanity.

I've realised that science is sacred, science is the new religion and anyone who opposes it has to be a crackpot. Right?

Here's one for you 007: industrial civilisation is not and can never be sustainable. The biggest problem with GM is who owns the technology. Supporting GM organisations is wrong.

And, by the way, the justice system in this country cannot even protect women and children from rape, how is it going to ensure labelling is applied properly on the food sources of the poor?

kim trollip on January 30, 2009, 12:26 pm

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