Encouraging Illegal Planting of Bt Brinjal in India: Political Posturing, Displaying Contempt for the Wider Public Interest

By Colin Todhunter
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In February 2010, the Indian government placed an indefinite moratorium on the commercial release of Bt brinjal. Prior to this decision, numerous independent scientific experts from India and abroad had pointed out safety concerns regarding Bt (insecticidal) brinjal based on data and reports in the biosafety dossier that Mahyco, the crop developer, had submitted to the regulators.

The then Minister of the Ministry of Environment and Forests **Jairam Ramesh** had instituted a unique four-month scientific enquiry and public hearings. His decision to reject the commercialisation of Bt brinjal was supported by advice from renowned international scientists. Their collective appraisals demonstrated serious environmental and biosafety concerns, which included issues regarding the toxicity of Bt proteins resulting from their mode of action on the human gut system.

Jairam Ramesh pronounced a moratorium on Bt brinjal in February 2010 founded on what he called "a cautious, precautionary principle-based approach." The moratorium has not been lifted.

In India, five high-level reports have advised against the adoption of GM crops. Appointed by the Supreme Court, the 'Technical Expert Committee (TEC) Final Report' (2013) was scathing about the prevailing regulatory system and highlighted its inadequacies and serious inherent conflicts of interest. The TEC recommended a 10-year moratorium on the commercial release of all GM crops.

Prominent campaigner **Aruna Rodrigues** says:

> "In his summing-up of the unsustainability of Bt brinjal and of its implications if introduced, one of the experts involved, Professor Andow, said it posed several unique challenges because the likelihood of resistance evolving quickly is high. He added that without any management of resistance evolution, Bt brinjal is projected to fail in 4-12 years."

And that is what we have witnessed with Bt cotton. The reason why this crop made it into India's fields in the first place was due to 'approval by contamination'. India's first and only legal GM crop cultivation – Bt cotton – was discovered in 2001 growing on thousands of hectares in Gujarat. In March 2002, it was approved for commercial cultivation.

The pro-GMO lobby, having lost the debate on the need for and efficacy of GM, has again resorted to such tactics. It appears nothing has been learnt from the experience of an ill-thought-out experiment with Bt cotton that put many poor farmers in a corporate noose for the sake of Monsanto profit.

Pro-GMO lobby encourages illegal planting

India is signatory to the international agreement on the regulation of modern biotechnology – the Cartagena Biosafety Protocol. The country also has science-based legal regulations for modern biotech.

The moratorium on Bt brinjal occurred because science won out against a regulatory process that lacked competency, possessed endemic conflicts of interest and demonstrated a lack of expertise in GMO risk assessment protocols, including food safety assessment and the assessment of environmental impacts.

As we have seen with the relentless push to get GM mustard commercialised, the problems persist. Through numerous submissions to court, Aruna Rodrigues has described how GM mustard is being undemocratically forced through with flawed tests (or no tests) and a lack of public scrutiny: in effect, there has been unremitting scientific fraud and outright regulatory delinquency. Moreover, this crop is also herbicide-tolerant (HT), which, as stated by the TEC, is wholly inappropriate for India with its small biodiverse, multi-cropping farms.

Despite this, on 10 June 2019 a bunch of pro-GMO activists stage-managed an event designed to gain maximum publicity by illegally planting Bt brinjal seeds at Akola in the state of Maharashtra. A press release issued to coincide with this stunt stated that the event was an act of 'Satyagraha' (the notion of nonviolent resistance used by Gandhi against British rule).

One of the instigators has even argued that Bt brinjal is 'organic', involves almost pesticide-free cultivation, probably uses less fertiliser and is entirely natural. Moreover, the argument put forward is that if organic farming means growing plants without the support of safe and healthy modern technology and this is imposed by 'eco-imperialists', the poor would starve to death.

These unscientific claims and well-worn industry-inspired soundbites must be seen for what they are: political posturing unsupported by evidence to try to sway the policy agenda in favour of GM. The actions in Akola display a contempt for government acting in the wider public interest.

Drawing on previous peer-reviewed evidence, a 2018 paper in the journal Current Science concluded that Bt crops and HT crops are unsustainable and globally have not decreased the need for toxic chemical pesticides, the reason for these GM crops in the first place. Furthermore, GM crop yields are at least no better than that of non-GM crops, despite the constant industry claims that only GM can feed the world.

Each genetic modification poses unique risks which cannot be controlled or predicted; as a technology, GM is thus fundamentally flawed. But a food crop isn't just eaten. There are effects on the environment too. Even a cursory examination of the US cropping system is enough to prove that the legacy of pesticidal GM crops has fuelled the epidemics of herbicide- resistant weeds and emerging insecticide resistant pests.

GMOs are not substantially equivalent to their non-GMO counterparts and there is no consensus on GM safety or efficacy among major institutions, despite what lobbyists claim. Genetic engineering is fundamentally different from natural plant breeding and presents various risks. This is recognised in laws and international guidelines on GM worldwide. The claims and the research and 'big list' studies (claiming safety) forwarded by the pro-GMO lobby do not stand up to scrutiny.

We need to look at GM objectively because plenty of evidence indicates it poses risks or is not beneficial and that non-GM alternatives are a better option. Moreover, many things that scientists are trying to achieve with GMOs have already been surpassed by means of conventional breeding.

Wider implications of GM agriculture

If people are genuinely concerned with 'feeding the world', they should acknowledge and challenge a global food regime which results in a billion people with insufficient food for their daily needs. As stated by **Eric Holt-Giménez** and his colleagues in the 2009 book, 'Food rebellions! Crisis and the hunger for justice':

> "The construction of the corporate food regime began in the 1960s with the Green Revolution that spread the high-external input, industrial model of agricultural production to the Global South. The World Bank and International Monetary Fund's structural adjustment policies (SAPs) followed in the 1980s, privatizing state agencies, removing barriers to northern capital flows, and dumping subsidized grain into the Global South. The free trade agreements of the 1990s and the World Trade Organization enshrined SAPs within international treaties. The cumulative result was massive peasant displacement, the consolidation of the global agri-food oligopolies and a shift in the global flow of food: While developing countries produced a billion-dollar yearly surplus in the 1970s, by 2004, they were importing US$ 11 billion a year."

Instead, we get calls for more corporate freedom, GMOs and deregulation that coincide with constant attacks on proven agroecolocical methods which have no need for proprietary pesticides or GMOs and thus represent a challenge to industry profits. India has more than enough food to feed its 1.3 billion-plus population and, given appropriate support, can draw on its own indigenous agroecological know-how built from hundreds (even thousands) of years' experience to continue to do so.

But pro-GMO lobbyists adopt a haughty mindset and assert the world can genetically modify itself to food security. At the same time, they attempt to marginalise safe and sustainable approaches to farming and sideline important political, cultural, ethical and economic factors.

The consequences of GM do not just relate to unpredictable changes in the DNA, proteins and biochemical composition of the resulting GM crop. Introducing GM can involve disrupting cultures and knowledge systems and farmers' relationships with their environments: changing the fabric of rural societies. We just need to look at the adverse social and environmental consequences of the Green Revolution as outlined by Bhaskar Save in his 2006 open letter to officials. Even here, if we just focus on the Green Revolution in India in terms of production alone, the benefits are questionable to say the least.

Like the Green Revolution, GM is not just about 'the science'; if anything, it is about solidifying the processes described by Holtz Gimenez et al above and a certain type of farming and the subsequent impacts on local economies and relations within rural communities. Before the Green Revolution, for instance, agriculturalists relied on mutual relationships within their villages. After the introduction of Green Revolution technology, they found themselves solely dealing with banks and agribusiness, thus weakening relationships within villages (Vandana Shiva discussed these impacts at length in her 1993 book, 'The Violence of the Green Revolution').

If India or the world is to continue to feed itself sustainably, we must look away from the industrial yield-output paradigm and the corporations driving it and adopt a more localised agroecological systems approach to food and agriculture that accounts for many different factors, including local food security and food sovereignty, local calorific production, cropping patterns and diverse nutrition production per acre, water table stability, climate resilience, good soil structure and the ability to cope with evolving pests and disease pressures.

Prominent critics of GM respond

In response to the recent activities in Akola, Aruna Rodrigues issued a legal notice to initiate proceedings against those responsible for the deliberate planting of illegal Bt Brinjal.

Vandana Shiva issued a press release, which can be read on the site seed freedom. She cites numerous peer-reviewed studies to rebut the claims made in support of GM and notes the outright hypocrisy of industry lobbyists who are laying claim to Gandhi's legacy. She argues that that 'Satyagraha' is being degraded and misused: the planting of illegal Bt brinjal is a crime that violates India's Biodiversity Act.

Of course, one of the most vocal claims of lobbyists is that GM technology offers farmers choice and that 'activists' are denying choice.

Writing on the Times of India website, **Kavitha Kuruganti** says if choices are to be left to farmers entirely, why do we need regulation of chemical pesticides either? What about the choices of farmers impinging upon consumer health and environmental sustainability? What about the choice of one set of farmers (let us say the ones who are keen on adopting GM crops) impinging upon the choice of neighbouring organic farmers whose crop will inevitably get contaminated? She argues there is nothing like absolute freedom without concomitant duties and responsibilities and that applies to technologies too.

Choice operates on another level as well. It is easy to manufacture 'choice'. In 2018, there were reports of HT cotton illegally growing in India. A 2017 journal paper reported that cotton farmers have been encouraged to change their ploughing practices, which has led to more weeds being left in their fields. It is suggested that the outcome in terms of yields (or farmer profit) is arguably no better than before. However, it coincides with the appearance of an increasing supply (and farmer demand) for HT cotton seeds.

The authors observe:

> "The challenge for agrocapital is how to break the dependence on double-lining and ox-weeding to open the door to herbicide-based management…. how could farmers be pushed onto an herbicide-intensive path?"

They show how farmers are indeed being nudged onto such a path and also note the potential market for herbicide growth alone in India is huge: sales could reach USD 800 million this year with scope for even greater expansion. From cotton to soybean, little wonder we see the appearance of HT seeds in the country.

And as for 'choice', what choice is there when non-GM seeds disappear and farmers only have GM seeds to 'choose' from, which is what happened with GM cotton. Real informed choice is the result of tried and tested environmental learning and outcomes. Then you decide which option is best. However, where Bt cotton was concerned this process gave way to 'social learning' – you follow the rest. This, coupled with Monsanto's PR campaigns within villages and in the national media, did not leave a great deal of space for 'free choice'.

The 'free' market ideologues behind events in Akola talk about 'freedom' and 'choice' and helping the farmer. But the real agenda is to open-up India to GM and get farmers hooked on a corporate money-spinning GMO seed-chemical treadmill.

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Colin Todhunter *is a frequent contributor to Global Research and Asia-Pacific Research.*

Articles by: **Colin Todhunter**

About the author:

Colin Todhunter is an extensively published independent writer and former social policy researcher. Originally from the UK, he has spent many years in India. His website is www.colintodhunter.com https://twitter.com/colin_todhunter