

Destruction of Agriculture, Rights of Indian Farmers: “Waltzing with Bayer” Makes The Indian Council of Agricultural Research (ICAR) Blind: India Ditches Mandate to Farmers and Uses Mutagenesis (Genetic Mutations) to Drive Toxic Herbicide HT Crops Into India

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A GMO PIL was filed in early 2005 (ArunaRodrigues & Ors. vs. Union of India, Writ Petition (Civil) No. 260 of 2005) in the Supreme Court (SC) to protect our natural environment, farmlands and foods from being made toxic via agrichemicals and irreversible GMO contamination.

Contamination is the outstanding concern with GMOs because these self-replicating organisms, insect/wind mediated, cannot be recalled.

India is a treasure trove, a listed ‘hot spot’ of 17 worldwide centres of genetic diversity and/or centres of origin. In India, this includes mustard, rice and brinjal. India’s foundational seed stock will be contaminated and would, as a scientific certainty, change the structure of our food at the molecular level, irremediably and irreversibly.

“Any toxicity that there is will remain without remedy”, said the late Prof Schubert of the Salk Institute.

With a commercialised GM crop, contamination is certain. GMO and non-GMO agriculture cannot co-exist. This is the hard evidence. The application of the precautionary principle (PP) to this technology is therefore a sine qua non.

In 2007, we secured an order in this PIL from the SC that there should be “no contamination”, (even) during field trials. **However, given the nature of GMO genetic contamination, the only way this order can be implemented is to bar all field trials. And this is precisely the action that the GEAC took at its 75th meeting of March 2007.**

Keeping in mind that India is THE centre of origin of rice, **the GEAC, at the insistence of basmati rice exporters and the Ministry of Commerce, employing the PP, decided not to allow field trials of GM rice in the basmati growing areas of the country, recognising the potential threat of contamination.**

The APEDA (Agricultural and Processed Food Products Export Development Authority)

required a certificate stating that no GM rice, groundnut and sesame seeds have been permitted in India due to a ban imposed by Russia on these crops because of a fear of GMO contamination.

In the 20 years since the PIL was filed, it is by now pretty well conclusive that the evidence from GMO-producing countries (which are just a handful), demonstrates that GMOs are not safe for the environment and for human and animal health.

In the US, for example, the impact of toxic food on children's health has been devastating. During a 40-year timeframe, childhood disease has risen from 6% to 60 %, with a commensurate rise in national health expenditure from zero, 40 years ago, to trillions of dollars today. It is essential that our regulators take on board the evidence and institute a biosafety regimen that is strictly independent, up-to-date and rigorous, which currently does not exist.

Corporate Hijack

So, two questions come to mind:

Why has the ICAR developed and released mutagenic HT rice varieties?

Why did the apex regulator with India's regulatory regime take no notice of this and stop it?

The ICAR (Indian Council of Agricultural Research) has developed and released two HT (herbicide-tolerant) basmati rice varieties (Pusa Basmati Rice 1979 and Pusa Basmati Rice 1985) and two HT non-basmati varieties tolerant to the herbicide IMAZETHAPYR. HT Wheat is also in the wings.

We are informed that these HT crops have been produced through induced chemical mutagenesis. Therefore, these HT crops represent genetic modification of organisms/micro-organisms by induced chemical mutagenesis and are, in fact, GMOs because they create changes in the genome of plants. But and however, these mutagenic HT crops are not synonymous with modern biotechnology or genetically engineered GMOs (recombinant). This is EU law.

The development of these HT crops has taken several years in planning, development and production. It goes without saying that the GEAC and our collective regulatory bodies have clearly been aware of this. And it is pertinent to add that the ICAR is nominated to the GEAC Committee as an Expert Member with others, including the DG Health Services.

HT crops have very serious deleterious effects, based on empirical evidence. It is a failed farm technology and causes harm to animals and humans. So, it is curious and indeed unconscionable that these mutagenic HT rice varieties were not stopped at the first instance. The GEAC (apex regulator), should absolutely have done so.

An HT crop is an HT crop whether produced by GE techniques or GMOs using chemical mutagenesis techniques. The Supreme Court-appointed TEC (Technical Expert Committee), in 2012-13, recommended a double bar on HT crops: (a) for being an HT crop per se because of their empirically proven, serious egregious impacts, (evidence after more than 40 years of growing these crops in the US/Argentina/Brazil) and (b) if in a centre of diversity

or origin.

This double bar applies straightforwardly to rice as a priority, as recognised by the GEAC itself, and also to mustard. Beyond this, the Indian 'Rules of 1989' are outdated and quite inadequate, as has become clear over the years, and suffer from the malaise that there is "NO statutory regulatory framework in place in the form of a Parliamentary law and is in fact subordinate legislation" (Justice Nagarathna in July 2024 in the recent judgement in this PIL, WP (Civil) No. 260 of 2005).

The 'Rules of 1989', nevertheless, do pertain to genetic modification of an organism. A conscionable regulator would have and should have viewed this with new vision in 2024 and applied it to GMOs created through mutagenesis, and if necessary, through a timely notification on their applicability to these GMOs arising from induced chemical mutagenesis.

Brazen Conflicts of Interest

The hard reason behind such complete blindness is undoubtedly the long-standing and unlawful conflict of interest that exists in the entire regulatory framework — our regulatory bodies have been captured by the biotech and agrichemical Industries.

Usually, every effort is employed by regulators, through subterranean regulation and secrecy, to obfuscate a conflict of interest because it, ethically and legally, invalidates their position as regulators. Not this time though.

Moreover, the brazenness and caution-thrown-to-the-wind action by the ICAR in inking in an MOU with Bayer (Sept 2023), which also owns Monsanto (2018), defies belief.

It is breathtaking; all pretence is gone. We have a cancer that is metastasising vertically and horizontally throughout the entire regulatory body. (This is clear from the appointment of the ICAR to the GEAC Committee as Expert Member.)

It is symptomatic of a cancer of corruption that plagues the entire global food system.

Dr Casey Means says:

"The largest merger ever done in Germany was Bayer Monsanto, where Bayer, which is a pharmaceutical company merged with Monsanto, which is an agrochemical company in the United States. If you look at what Bayer makes, they make cancer drugs for things like non-Hodgkin's lymphoma. If you look at what Monsanto makes, which is Roundup, which is the most widely used pesticide in America, the cancer that it causes is non-Hodgkin's lymphoma. (There are over 100,000 court cases winding their way through US courts — added by A R). They paid out USD 11 billion in the past couple years for non-Hodgkin's lymphoma cases. So, the companies are merging that are directly known to cause the disease, with a medical company that has a treatment for the disease. This is very dark." ([Source](#)/Tweet has been removed)

It should be noted that the Bayer-Monsanto Roundup herbicide is also an endocrine disruptor and is linked to birth defects. Monsanto and the US Environmental Protection Agency have both known for over 40 years that glyphosate and its formulations cause cancer.

However, penetrating the huge Indian market represents a massive cash cow for foreign corporations, especially if their HT crops (by either technology of genetic engineering or chemical mutagenesis) get market approval. This would certainly make up for declining demand elsewhere. For instance, in July 2023, [it was reported](#) by the BBC that German-based Bayer expects to take a USD 2.5bn (USD 2.8bn) hit due to slower demand for its glyphosate-based products.

The ICAR has recently also concluded MoUs with Amazon and Syngenta.

Researcher and writer Colin Todhunter says:

“We are currently seeing an acceleration of the corporate consolidation of the entire global agri-food chain. The big data conglomerates, including Amazon, Microsoft, Facebook and Google, have joined traditional agribusiness giants, such as Corteva, Bayer, Cargill and Syngenta, in a quest to impose their model of food and agriculture on the world.

“The Bill and Melinda Gates Foundation and big financial institutions, like BlackRock and Vanguard, are also involved, whether through buying up huge tracts of farmland, pushing biosynthetic (fake) food and genetic engineering technologies or more generally facilitating and financing the aims of the mega agri-food corporations”. [From Agrarianism to Transhumanism: The Long March to Dystopia](#)

The ICAR is certainly facilitating this process in India.

It is important to understand that the regulatory agencies of both the US and India are run by the big food processing companies, big agribusiness concerns, the chemicals/pesticide conglomerates and the Gates Foundation. India's food is becoming increasingly toxic and unsafe. This will lead to chronic disease in India just as it has in the US, children in particular.

The genesis of the dominance of private interests in our food and agriculture lies in an MOU signed over 20 years ago (see below). That poison has spread and is rapidly being cemented now, through the MOUs with Bayer, Syngenta and Amazon.

The Knowledge Initiative in Agricultural Research and Education (KIA) was signed in 2006 and, astonishingly, the Indian Government assigned Monsanto to the closest scrutiny of India's genetic resources as a result of its position on the Board of the Indo-US KIA. Monsanto effectively represented the US government in order to facilitate GM food crops into Indian agriculture.

The ICAR was inducted as the signing institution for the Union of India for an alliance with the US for GM crops. The ICAR was required to provide “free access” to its entire network of 47 agricultural laboratories and universities so that US companies and research institutes could carry out joint research with ICAR in biotech areas “that have the potential for rapid commercialisation.”

This ‘agreement’ is no longer ‘active’. But its spores and workings continue to influence public institutions of agriculture, including public-private-partnerships with the industry that the Department of Biotechnology partners in GM crop development or the SAUs (State Agricultural Universities) to ensure that ‘policy and regulation’ is speedily tailored to facilitate the introduction of a full range of GM food crops. The State Agricultural Universities

of TAU (Tamilnadu Agriculture University) and Dharwad, for example, were involved in the development of Bt brinjal, funded by US AID, Monsanto and Cornell University.

The ongoing capture of public policy space by foreign interests is not lost on the Peoples' Commission on Public Sector and Services (PCPSS), which includes eminent academics, jurists, erstwhile administrators, trade unionists and social activists. In a recently released [statement](#), it expressed concern that Bayer will exploit the ICAR's vast infrastructure to pursue its own commercial plans within India to boost sales of toxic proprietary products.

The PCPSS notes that there are several ICAR-sponsored research institutions and state-level agricultural universities, which are engaged in outstanding research relevant to Indian agriculture. A number of states have launched their own natural farming missions to free debt trapped farmers from the use of costly chemicals and other unsustainable practices. The PCPSS says it is therefore not clear as to why the ICAR should choose to promote Bayer in multiple areas of agricultural research.

Mutagenic HT crops have somehow, willy-nilly been introduced into India and in basmati varieties, by-passing the Apex Regulator the GEAC. The ICAR and India's collective regulatory agencies have aimed for India's jugular for maximum harm to her agriculture and food. It is difficult to quite comprehend just how wrong policies that promote HT crops are.

A wholesale sell-out of India's agriculture and her food is being relentlessly pursued. Evidence of the utter disaster that HT crops are, is clear and is based on empirical research findings of 35+ years of growing these crops in the US, Argentina and Brazil. These findings provide insight into the harm that all HT crops, in this specific case by mutagenesis, will have on our farming.

This seriously egregious policy decision must therefore be urgently reversed and stopped.

Open Letter to ICAR

In July 2024, I wrote to the ICAR highlighting what is set out below.

The ICAR's introduction of HT crops highlights the consequences for India: the ICAR (India's regulatory body for farming) has effectively ditched its mandate to Indian farmers and farming, whose competitive advantage is organic farming based on soil health, sustainability and regenerative agriculture. By avoiding synthetic pesticides and fertilisers, organic farms provide a habitat for a wide range of organisms, from soil microbes and insects to birds and mammals. The biodiversity provided by organic farms is crucial for ecosystem resilience and the provision of ecosystem services such as water purification, pollination and nutrient cycling, which benefit all species.

This step is a potential threat to India's export markets, which are based on organic standards, along with the necessary co-surety that India's foods and farms are not contaminated by herbicides, a consequence of using HT crops.

In the matter of rice, HT crops are of the greatest concern because India is the 'centre of origin' of rice, which means that India has an immensely rich diversity in rice. The ICAR has, furthermore, rather perversely selected basmati, historically, the queen of rice varieties, in which to introduce an HT trait. The ICAR's action directly impacts the vital issue of contaminating our germ plasm in rice and contravenes a Supreme Court Order of "no

contamination”.

Our export markets for basmati are in excess of USD 5 billion in 2023-24. The ICAR’s action will directly impact India’s exports and, thereby, impact farmer export potential, incomes and income opportunities that premium prices provide.

In my letter to the ICAR, I also pointed out that HT crops are pesticidal crops and are not meant for human consumption. Therefore, HT crops must be tested as pesticidal crops but are not. The sprays used include chemicals and surfactants, the latter force both weeds and the HT crop to absorb significant quantities of the herbicide that is sprayed on them. The resistant crop stands. Everything else dies including non-target organisms. The use of these surfactants encourages indiscriminate use.

The ICAR was made aware that, based on empirical evidence, **HT crops are a failed technology, which spawn super weeds, higher herbicide use and no added performance yield. I provided the ICAR with empirical data to support my claims.**

Overall herbicide use (US Geological Survey) has increased more than tenfold, from 20 million pounds/year (prior to HT Crops in 1992) to 280 million pounds/year by 2012. In other words, 527million pounds more total herbicide was used in the US during this period (1992-2012) due to commercialised HT crops.

As of 2013, HT crops had caused the emergence of some 60 million acres or about 25% of US cropland (ref. TEC report) of ‘super’ weeds resistant to herbicides, doubling since 2010 or about 50% of crop area sown to herbicides.

The costs to farmers of weed control have increased by up to 100%, seed prices have increased threefold (from 1996). The combined onslaught is putting US farmers out of business as they struggle with losses on a substantial scale.

The ICAR was made aware that for India HT crops are a particularly perverse use of technology, irrespective of whether GE or through mutagenesis. The technology risks small and marginal farmers’ crops and ‘jari-booti’ herbs and plants, used in many Ayurvedic medicines, because of herbicide drift among other things.

Moreover, HT crops are designed for monoculture. It bears repeating that HT crops are completely unsuited to Indian smallholder farming. They also uniquely impact the employment of women in weeding (MS Swaminathan Task force 2004).

As stated above, HT Crops will deny Indian farmers their niche export markets, which are not contaminated and will be endangered by herbicide. Furthermore, the market for organics is growing by a robust minimum 20% pa. Both requirements attract premium prices.

Like Bayer’s other toxic herbicides, glyphosate and glufosinate, imazethapyr is also a systemic broad-spectrum herbicide and is banned in some countries and not approved for use in the EU. This is an additional red flag with regard to the use of this herbicide.

Prof. Jack Heinemann notes that antibiotic resistance is also a cause for concern. **Herbicides (including imazethapyr) must be tested for their ability to cause bacterial antibiotic resistance. Common adjuvants (e.g. emulsifiers/surfactants)**

used in association with herbicide active ingredients alter the response of bacteria to antibiotics.

Combined with antibiotic use in medicine, veterinary medicine, and crop protection, co-exposures to herbicide (and agrochemicals in general) and antibiotics are common. Co-exposures alter the response of bacteria, notably those that can cause diseases in people, companion animals, or livestock, to antibiotics. In time, the co-exposure increases resistance to antibiotics.

Heinemann recommends: “it is necessary to test any herbicide, including of imazethapyr, to be able to exclude the possibility that it can cause antibiotic resistance. We have not identified any chemical or biological similarities between the herbicides that would allow one to predict in advance that a particular chemical or formulation would not have this effect on bacteria”

And “that effects on bacteria that can cause disease be considered whenever considering adopting a cropping practice that combines herbicide use and herbicide tolerant crops. The enormous burden of antibiotic resistance should not be unnecessarily exacerbated by use of herbicides”.

India’s population has some of the highest levels of antibiotic resistance in the world. Any spread of HT crops would put us at severe risk of resistance and disease.

Despite these environmental and health concerns, the herbicide market in India is projected to grow by [around 54%](#) in the next five years, from USD 361.85 million in 2024 to USD 558.17 million by 2029.

In view of the above evidence of serious irreversible harm to health, food and agriculture across several dimensions, it is a required scientific response for the ICAR and our regulators to immediately withdraw HT crops, including HT rice varieties and desist from introducing any HT crop whether through mutagenesis or genetic engineering.

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Aruna Rodrigues is Lead Petitioner in the SC in the matter of GM crops: Writ Petition (Civil) No. 260 of 2005).

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