

# India fails to weed out illegal herbicide-tolerant cotton

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India's switch to Bt cotton has triggered concerns about potential health and environmental impacts. Credit: ISAAA KC (<https://pixabay.com/users/isaaakc-3432919/>), Pixabay

A massive jump in the sale of herbicide-tolerant, genetically engineered cotton seeds in India's current cropping season has raised fears of unchecked use of glyphosate, a toxic weedicide linked to serious health issues including cancer.

India, world's largest [cotton](#) grower, restricts the sale of [glyphosate](#) to tea plantations and non-cropping areas. But top scientists have demanded a complete ban or restrictions on the use of glyphosate because of its impact on the environment as cotton farmers have been suspected of illegally diverting the weedicide to fields sown with genetically engineered *Bacillus thuringiensis* (Bt) cotton—a transgenic crop made resistant to some insect pests by the insertion of a gene from the Bt soil bacterium.

Herbicide-tolerant Bt (HTBt) cotton variant adds another layer of modification helping it survive fields sprayed with weed-killing glyphosate. The process saves on labor required to physically remove weeds from cotton fields. But it has not been approved by regulators.

J.S. Mishra, director of weed research at the Indian Council of Agricultural Research, ICAR-Directorate of Weed Research, says US studies have shown that indiscriminate use of glyphosate can give rise to superweeds.

"We have made the assessment that illegal sales [of herbicide-tolerant Bt cotton seeds] have reached at least 7.5 million packets compared to last year's three million packets," says N.P. Patel, governing council member of the National Seed Association of India (NSAI), a seed-producing consortium.

He says the Union Ministry of Agriculture had so far not responded to its complaints about the situation.

"Adoption of herbicide-tolerant Bt cotton increases the intensive use of glyphosate, which increases the chances of emergence of superweeds, as well as damaging the health of Indian farmers," says Keshav Kranthi, chief scientist the International Cotton Advisory Committee (ICAC).

Additionally, [according](#) to Kranthi, pollen from HTBt cotton could contaminate ordinary, non-transgenic crops in nearby fields. "Indian farmers have one of the smallest landholdings where it would be difficult to save non-HTBt crops from HTBt cotton pollen," says Kranthi, a former director of India's Central Cotton Research Institute.

The central government has been aware of the development since 2018 when the department of biotechnology in the Ministry of Science and Technology set up a Field Inspection and Scientific Evaluation Committee to investigate illegal cultivation of herbicide-tolerant Bt cotton. But the report of the team was never made public.

Separately, the Genetic Engineering Appraisal Committee, a [regulatory authority](#) that monitors GM crop issues and functions under the Ministry of Environment, Forest and Climate Change, confirmed that HTBt cotton seeds are being sown but declined to comment.

Sayarun Kathula, biosafety scientist and a member secretary of the committee, says: "We cannot make any official statement as state governments are responsible for the implementation of a policy decision under which HTBt is still unapproved in our country."

HTBt seeds developed by the Mahyco Grow company, though pending approval by the committee, have been grown commercially in Gujarat state and sold in Maharashtra and Telangana for more than a decade, according to dealers. With no checks by authorities, the production of herbicide-tolerant Bt cotton has proliferated to other states.

Vijay Jawandhiya, a farmer leader from Maharashtra who has written a number of letters to different state governments demanding a proper investigation, says: "No government is interested in knowing where these HTBt seeds are produced even though it is openly available in the market."

Rising labor costs are cited for the switch from conventional hand weeding to dependence on chemicals. Anil Ghanawat, president of the Shetkari Sanghatana, a farmers' organization based in Maharashtra, which advocates for legalization of HTBt, says glyphosate gets the job of weeding done at a fraction of the cost of hiring labor.

Glyphosate is already being used on 20 crops (including 16 food crops) in India, [according to the Pesticide Action Network](#)—Asia Pacific, with negative health impacts such as eye irritation, nausea, dysentery and urinary infection, among others.

Provided by SciDev.Net

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