

[Back to Article](#)[Click to Print](#)

Tuesday, Jun. 10, 2008

## India's Deadly Chemical Addiction

By Madhur Singh

On a scorching June afternoon in Jhajjal village in southwestern Punjab, elderly men have gathered in a communal courtyard to quell the boredom of the long afternoon with a game of cards. The cotton crop has been sown, and the farmers have a few weeks' holiday before they must return to their fields. As with most small villages, everyone knows everyone else here, and the conversation centers around marriages and births. But these usually mundane topics have taken on a tragic twist, involving couples failing to conceive, children being born with genetic disorders, people of all ages succumbing to cancer. Nadar Singh, the village headman, says there have been some 20 cancer-related deaths during the last five years in Jhajjal, a village of only 3,200. "A 23-year-old died of cancer in our village last year," he says, "But such news has stopped shocking us. Here even kids have cancer."

India's rural activists for years have blamed the overuse and misuse of pesticides for a pervasive health crisis that afflicts villages like Jhajjal across the cotton belt of Punjab. Evidence continues to mount that the problems are severe. Last month, a government-funded study revealed that chemical fertilizers and pesticides have seeped into the groundwater in four Punjab districts and are causing an alarming array of ecological and health problems including cancer and mental retardation. A June 2005 study by the new Delhi-based Centre for Science and Environment found residues of between 6 and 13 pesticides in blood samples of villagers from Mahi Nangal, Jajjal and Balloh villages in Bhatinda district. Recent research by Punjabi University at Patiala established evidence of DNA damage among agricultural workers exposed to pesticides; damaged genes can give rise to a range of cancers as well as neurological and reproductive disorders. Bala, a 24-year-old day laborer, worked for two months in the fields during the spraying season four years ago. Not long after, her second child, a boy, was born with a neurological disorder and has recently been diagnosed with hydrocephalus. "His treatment is so expensive that we have had to borrow large amounts of money...

"I know he won't survive" she says. Surinder Singh, the executive director of the rural NGO Kheti Virasat, says, "Punjab is paying with its life for a dubious promise of prosperity."

Punjab's lethal pesticide legacy can be traced to the Green Revolution of the 1960s and '70s, when high-yielding varieties of cotton were introduced in the region's relatively arid Malwa belt. Initially the move was successful as yields and prices were good. But farmers soon discovered that the cotton was highly susceptible to pests, and ended up spending huge amounts on pesticides. As the pests, such as pink bollworm and aphids, became increasingly resistant to chemical spraying, farmers reacted by laying on even more, sometimes mixing two or more products against all scientific evidence. The region virtually became a chemical laboratory. The expense of spraying put many farmers deep in debt, yet they remain vulnerable to outbreaks such as a mealy bug attack last year that destroyed 70% of the crop. "Earlier, we used less water, traditional crops and organic manure. Now, it's all chemicals," says Sarmukh Singh, a 93-year-old patriarch in Jhajjal. "We've got our land addicted, but we don't know how to fight this addiction."

The health impact on the region is shocking. A daily passenger train that runs from Bathinder to Bikaner in neighboring Rajasthan is nicknamed the "Cancer Express" because it routinely fills a dozen cars with patients and their attendants on their way to a charitable hospital. Despite the high incidence of cancer, there is no government-run cancer hospital in the Malwa region, although the government announced plans to build one last year. "Officials sometimes visit our village, but they never seem to do anything," says Santosh, a 35-year-old resident of Jhajjal who was diagnosed with leukemia three years back and goes to Bikaner every six months for a blood transfusion.

There's plenty of blaming going on. Pesticide companies blame farmers for not adhering to prescribed quantities and not using protective gear. Workers who spray the chemicals blame landlords for not investing in protection, and companies for not properly informing them of the dangers of exposure. Farmers claim it is greedy dealers who push them to spray more, and also blame the government's failure to change its policies after the harmful side effects of the Green Revolution began showing. "We know what we are doing is not sustainable," says Nadar Singh, the chief of Jhajjal. "The agriculture department and the PAU [Punjab Agricultural University, which pioneered the Green Revolution] should come up with an alternative."

Faced with the latest studies on the effects of pesticides on the ecology and on people's health, Punjab Pollution Control Board is holding a meeting in the coming weeks to decide what action to take. For the moment, the government doesn't seem to have a plan of action, though piecemeal steps are afoot. It is promoting herbal pesticides and extending outreach programs to better educate farmers about the dangers of pesticide overuse—not only in this region but all over Punjab. Some farmers are taking

up organic farming, and many scientists have been calling for a return to crops more suited to the local landscape—in the case of the Malwa region, pulses and cereals like bajra and maize in addition to cotton—to restore the biodiversity of the soil. The Congress Party–led government in Delhi has been talking about the need to launch a second Green Revolution, for which it is partnering with countries like the U.S. and Israel to devise technologies that are more sustainable. It is looking at developing and introducing transgenic crops and other advances in biotechnology. But, as Surinder Singh of Kheti Virasat points out, the government must ensure that it doesn't repeat the mistakes it made the first time around. "The Punjab farmer basks in the glory of making Punjab the bread basket of India," he says, "but the price has been too high. Punjab cannot pay with the lives of its next generation."

 [Click to Print](#)

**Find this article at:**

<http://www.time.com/time/world/article/0,8599,1813081,00.html>

Copyright © 2008 Time Inc. All rights reserved. Reproduction in whole or in part without permission is prohibited.

[Privacy Policy](#) | [Add TIME Headlines to your Site](#) | [Contact Us](#) | [Customer Service](#)