

# Cancer Train of Punjab: An Environmental Crisis Rooted in Dushi Vishajanya Vishaktata

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**Abstract-** The Malwa region of Punjab has witnessed an alarming rise in cancer cases, with the Bhatinda–Bikaner Express, known as the “Cancer Train,” carrying scores of patients daily. Modern studies attribute this health crisis to excessive use of agrochemicals, while Ayurvedic science offers an ancient yet relevant explanation—Dushi Vishajanya Vishaktata, the concept of slow, cumulative poisoning. This paper examines the environmental, sociopolitical, and Ayurvedic dimensions of the crisis, emphasizing how the unchecked spread of toxins correlates with classical Ayurvedic understanding of disease formation. Integrating modern solutions with Ayurvedic detoxification and prevention strategies is proposed as a holistic remedy to mitigate this crisis.

**Keywords-** Cancer Train, Punjab, Dushi Visha, Agrochemical toxicity, Ayurvedic toxicology, Panchakarma, Environmental health, Green Revolution, Vishaghna, Dhatu Dushti

## INTRODUCTION

The state of Punjab, particularly its Malwa region, has been at the forefront of India's agricultural transformation. During the Green Revolution in the 1960s and 1970s, the state became a symbol of food security and economic prosperity through the adoption of high-yield variety (HYV) seeds, chemical fertilizers, and pesticides. However, this advancement has come at a significant environmental and human cost. Over time, the excessive and unregulated use of agrochemicals has led to widespread ecological degradation, contamination of water sources, and most alarmingly, a surge in chronic diseases—most notably, cancer.

So prevalent is the disease in this region that a passenger train connecting Bathinda to Bikaner, the Bhatinda–Bikaner Express, came to be colloquially known as the "Cancer Train". This train transports dozens of cancer patients daily to Acharya Tulsi

Regional Cancer Centre in Bikaner, Rajasthan, due to a lack of affordable and accessible cancer treatment facilities in their own region. Studies show significantly higher cancer incidence in this belt, giving rise to the term “cancer villages,” where multiple households are affected by one or more cases. Modern toxicological studies attribute this health crisis to persistent pesticide and heavy metal exposure. Yet, this phenomenon is not new to Ayurveda. The ancient science of life has long recognized a category of slow-acting poisons termed Dushi Visha, which accumulate silently in the body, disturb physiological balance, and ultimately lead to chronic diseases including Granthi (tumors) and Arbuda (malignant growths). This concept provides an invaluable framework for understanding chronic toxicology in today's context.

The current article attempts to draw a parallel between the scientific and Ayurvedic explanations of chronic agrochemical toxicity and its health impacts, thereby advocating for a combined approach to diagnosis, treatment, and prevention.

## AIM

To explore the cancer epidemic in Punjab through the Ayurvedic perspective of Dushi Vishajanya Vishaktata and propose an integrative approach combining Ayurvedic and modern measures.

## OBJECTIVE

- To analyze the link between agrochemical exposure and chronic diseases in Punjab
- To interpret the situation through Ayurvedic principles of Dushi Visha
- To suggest integrative management and preventive strategies

- To raise awareness of sociopolitical and environmental consequences

## MATERIAL AND METHODS

- Sources: Epidemiological data, environmental reports, and Ayurvedic classical texts
- Methodology: Literature review of modern scientific studies and Ayurvedic treatises such as *Charaka Samhita*, *Ashtanga Hridayam*, and *Agad Tantra*
- Approach: Comparative analysis of modern toxicological data and Ayurvedic pathology concepts (e.g., *Srotorodha*, *Dhatu Dushti*)

## REVIEW OF LITERATURE

### Modern Context

Numerous environmental and medical studies have highlighted the grave consequences of agrochemical overuse in Punjab. The Centre for Science and Environment (CSE) and Indian Council of Medical Research (ICMR) have reported high levels of pesticide residues like DDT, HCH, malathion, and chlorpyrifos in blood samples of local residents. Groundwater samples have revealed uranium, arsenic, cadmium, and nitrate contamination, posing risks not only of cancer but also of developmental and reproductive disorders.

Singh et al. (2006) reported that farmers in Punjab often used 10–15 times the recommended pesticide dose, largely due to lack of training, illiteracy, and poor regulation. Kalra et al. (2013) emphasized that even banned substances like endosulfan were easily accessible in black markets. Further, animal milk, grains, and vegetables have consistently shown chemical residues beyond safe limits, indicating that the population is exposed to toxins via multiple routes: ingestion, inhalation, and dermal absorption.

The World Health Organization (1995) has long warned about the chronic effects of pesticides, including their role as endocrine disruptors, immunotoxins, and carcinogens. Epidemiological data from the National Cancer Registry Programme (2020) revealed that southern Punjab reports cancer incidence rates significantly higher than the national average, with some villages reporting cases in nearly every household.

### Ayurvedic Context

Ayurvedic literature provides a sophisticated lens to interpret such chronic toxicity. In *Agad Tantra*, a branch dealing with poisons and antidotes, Dushi Visha is described as a latent or weak poison that does not cause immediate symptoms but remains lodged in the body tissues. When activated by factors like dosha imbalance, weak agni (digestive fire), or external triggers, it causes long-term degeneration of tissues (*Dhatu Dushti*) and leads to serious illnesses like *Granthi* (benign tumors) and *Arbuda* (malignant tumors).

The *Charaka Samhita* and *Ashtanga Hridaya* outline the characteristics of Dushi Visha: it is subtle, accumulates in *rakta*, *mamsa*, *majja dhatus* (blood, muscle, and marrow), resists elimination, and produces chronic symptoms such as low-grade fever (*jwara*), skin eruptions (*pidika*), loss of appetite (*agnimandya*), swelling (*shotha*), and infertility (*shukra dushti*). These symptoms closely correlate with modern manifestations of chronic toxicity and carcinogenesis.

The Ayurveda model also accounts for contributing lifestyle factors (*Nidanas*) such as Mithya Ahara (unwholesome diet), Viruddha Ahara (incompatible food combinations), excess exposure to the sun post pesticide application, and psychological stress, which amplify the impact of toxic exposure. Thus, the concept of Dushi Visha offers an integrative, psychosomatic framework to assess and address chronic diseases rooted in environmental toxicity.

## DISCUSSION

### Part I: The Cancer Train – Ground Reality

- The Bhatinda–Bikaner Express sees daily movement of 60–100 cancer patients [3]
- Cancer mortality in Punjab surpasses national averages; villages now labeled as “cancer villages” [6]
- The Green Revolution's legacy includes pesticide overuse, farmer ignorance, and systemic neglect [1][2]

### Part II: Ayurvedic Explanation – Dushi Vishajanya Vishaktata

- Bioaccumulation parallels Ayurvedic *Dushi Visha* – silent, slow-acting poisons [5][9]
- *Srotorodha* (blockage of channels) and *Dhatu Dushti* (tissue contamination) contribute to *Granthi* and *Arbuda* formation
- Symptoms overlap with those caused by environmental toxins: inflammation, immune suppression, hormonal disruption [4][5][7]

#### Part III: Pathogenesis

- Entry via water, food, air, and skin [3][6]
- Chronic exposure damages DNA, weakens immunity, and triggers doshic imbalances [6][7]
- Stress, malnutrition, and chemical-laden food act as aggravating factors [5]

#### Part IV: Solutions – A Combined Approach

##### Modern Interventions

- Enforce pesticide bans and regulate agrochemical sales
- Promote organic/Zero Budget Natural Farming (ZBNF)
- Provide accessible cancer screening and treatment at district levels
- Improve water quality via RO plants and rainwater harvesting [2][6][8]

##### Ayurvedic Interventions

1. Agad Chikitsa
  - *Dushivishari Agad, Haridra, Guduchi, Triphala, Vacha* — Vishaghna & anti-cancer [5][10]
2. Panchakarma (Shodhana)
  - *Virechana* for *Pitta/Rakta Dushti, Basti* for detox and *dhatu* rejuvenation
  - *Nasya* and *Dhoomapana* for neuro-respiratory symptoms [13][15]
3. Rasayana Therapy
  - *Ashwagandha Rasayana, Chyawanprash, Amalaki* to rebuild immunity and support tissue regeneration [10][16]

#### CONCLUSION

The rise in cancer in Punjab is more than a medical anomaly—it is a tragedy born from environmental negligence and misguided agricultural policy. The Ayurvedic model of *Dushi Visha* provides a

remarkably aligned framework to understand and address this crisis. By combining traditional Ayurvedic wisdom with modern environmental reforms, we can not only alleviate the current burden but also establish a model for holistic public health restoration.

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