## Tea & Climate Change: The Looming Threat of Greenfly Infestation

By Pullock Dutta\_ May 6, 2025 4:58pm



A Tea bush infected with greenflies can show symptoms like leaf curling, browning at the edges, and surface distortion. (Photo: Tocklai Tea Research Institute)

A burgeoning epidemic of greenflies (*Empoasca flavescens*, also known as green leafhopper) has emerged as a formidable menace to tea plantations in India, especially in tea-rich Assam and West Bengal states, precipitating a calamitous decline in crop health and substantial yield losses. Industry experts are sounding the alarm, warning that these pests are now active throughout the year, resulting in yield declines ranging from 11 percent to a staggering 55 percent in certain regions.

"This sap-sucking pest primarily targets young green leaves considered best for making tea," Joydeep Phukan, secretary of the Tea Research Association (TRA), said. "It causes distinct symptoms like leaf curling, browning at the edges, and surface distortion—commonly known as rim blight."

The damage is especially severe during the second flush period (May–July), which accounts for over 30 percent of annual revenue for tea gardens. The best quality tea is produced in Assam during the second flush period.



Tea leaves affected by greenflies. (Photo: Tocklai Tea Research Institute)

Experts have blamed this increasing greenfly attack on the climate crisis.

The deteriorating quality of tea leaves following greenfly attack has also impacted exports, with northeast India witnessing a 14 percent drop in tea export volume in 2022. Production of Darjeeling tea dropped to a record low in 2024.

Traditionally, the greenfly was a dry-season pest that primarily affected the first flush, but its population now persists throughout the year due to climate change, causing significant losses in the secondary flush as well. The controlled infestations once contributed to enhance the flavor of Darjeeling tea, whereas now its unchecked proliferation has become a major cause of crop loss, leaving planters struggling to protect their yields and livelihoods.



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Assam, the heartland of India's tea production, where tea is grown in the Brahmaputra valley and Barak valley, is facing this unexpected challenge with the growing tolerance of greenfly pests to commonly used insecticides. To control the pest, garden management has attempted the use of various chemicals listed in the Plant Protection Code (PPC), such as Quinalphos 35EC, Thiomethoxam 25WG, Deltamethrin 2.8 EC, and Thiacloprid 21.7. However, these chemicals have proven ineffective against greenfly infections.

This alarming situation has been reported from several tea estates in Assam, especially from Tinsukia, Dibrugarh, Golaghat, Tezpur, and Udalguri districts, leaving tea growers deeply worried.

Despite the measures recommended by the TRA and the PPC, planters are observing repeated failures in greenfly control. "Earlier, this pest was treated as a minor pest and used to disappear after the dry season ended, but with time, their presence has become longer and more rigid than in previous years," said Somnath Roy, a senior scientist at Tocklai Tea Research Institute.

The greenfly infestation has led to a significant decline in tea yields, with losses and the damage caused by the pest also impacting the quality of tea leaves. The compounding financial strain threatens the livelihoods of thousands of workers dependent on the tea industry. The cost of plant protection has skyrocketed, with North Indian tea estates now having to spend Rs 25000 to Rs 3000 per hectare on pest control measures. The limited availability of new pesticides further complicates the situation, forcing planters to seek alternative pest management strategies.

The havoc caused by greenflies does not end with direct plant damage. The weakened tea bushes become highly susceptible to secondary infections like fungal blight that causes extensive leaf necrosis and further reduces crop productivity. "This dual attack by greenfly and blight has placed the tea industry in a precarious position," Roy said.

Experts are now suggesting that it is time to look for alternative solutions — newer, more effective insecticides, integrated pest management practices, and research-based strategies that focus on breaking pest resistance. Tea planters are urging research organizations and authorities to step up efforts in finding sustainable and practical solutions.

Rising temperatures, irregular rainfall, and long drought periods have created ideal conditions for greenfly proliferation. Studies indicate that Assam's average temperature has risen by 1.3°C in recent decades, while annual rainfall has decreased by 200 mm, intensifying pest outbreaks. Experts said that there are concerns over the possible invasion of a modified and a more aggressive greenfly strain.



Greenflies on tea leaves. (Photo: Tocklai Tea Research Institute)

"The greenfly infestation in Assam and West Bengal tea gardens has escalated into a major crisis, threatening the region's tea economy and global market share. Without immediate intervention, the industry faces severe long-term consequences. Planters, researchers, and policymakers must work together to implement sustainable pest management solutions and adapt to the challenges posed by climate change. Protecting India's tea heritage requires a collective and proactive approach before it's too late," Indranil Sharma, a tea planter who has been producing some of the best teas in Assam, said.

Former chairman of Tea Board Prabhat Kamal Bezboruah has been quoted as saying in a PTI report that the greenfly has become a menace for tea plantations in the northeast, especially during the quality period of the second flush.

"There could be a possible act of bio-aggression in the northeastern zone, and [it] has become imperative for the authorities to look into it," Bezboruah said.