

## AGRO-TERRORISM – INTERNAL SECURITY

NEWS: Two Chinese nationals have been accused of trying to smuggle a deadly fungus, **Fusarium graminearum** into the United States, with the FBI stating that it was a ‘**potential agro-terrorism**’ weapon.

### WHAT’S IN THE NEWS?

#### What is Agro-Terrorism?

- **Definition:** Agro-terrorism refers to the deliberate use of biological agents such as plant pathogens, pests, or toxins to attack agricultural systems of a country.
- **Objective:** The primary aim is to cause **economic disruption, food insecurity, loss of livelihoods, and widespread public panic.**
- **Strategic Impact:** It can cripple a country’s agricultural economy and severely impact food supply chains, especially in agriculture-dependent nations.

#### Why is Agriculture a Soft Target?

- **Low Security:** Agricultural infrastructure—farms, warehouses, transport systems—is typically **less protected** than military or financial institutions.
- **Wide Dispersal:** Farmlands and food processing units are **geographically scattered**, making them hard to monitor comprehensively.
- **Delayed Detection:** Biological attacks (like pests or diseases) can **go unnoticed for days or weeks**, worsening the impact.
- **Traceability Issues:** It is often **difficult to trace the origin** or perpetrators of such attacks due to the slow onset and natural-like symptoms.

#### Past Examples of Agro-Terrorism

- **World War II – Nazi Germany:**
  - Allegedly dropped **Colorado potato beetles** on British potato fields in 1943 to sabotage food production.
- **Imperial Japan:**
  - Reportedly planned to use **wheat rust spores** to infect wheat fields in the United States and Soviet Union.
- **Cold War Era – USA:**

- Accused of **stockpiling over 30 tons** of *Puccinia triticina* (a wheat stem rust fungus) as a biowarfare agent.
- Considered destroying Japanese **rice crops** before ultimately using the atomic bomb.



### Agro-Terrorism in the Indian Context

- **Agricultural Dependence:** Agriculture contributes to around **17% of India's GDP** and employs over **55% of the population**, making it a highly sensitive sector.
- **Wheat Blast Outbreak (2016):**
  - Caused by *Magnaporthe oryzae* pathotype *Triticum* (MoT).
  - Detected in West Bengal after a Bangladesh outbreak.
  - **Government Response:** 3-year ban on wheat cultivation in affected areas and within a **5 km buffer zone** near the Bangladesh border.
- **Cotton Leaf Curl Virus (2015) – Punjab:**
  - Whitefly infestations led to **two-thirds of crop loss**, worth approx. \$630–670 million.
  - The virus strain was **unusual and traced to Pakistan**, raising suspicion of cross-border bio sabotage.

### International Regulations and Frameworks on Agro-Terrorism

- **Biological Weapons Convention (BWC), 1972:**

- Prohibits development and stockpiling of **biological and toxin weapons** affecting humans, animals, and plants.
- Though not agriculture-specific, it **indirectly addresses agroterrorism**.
- **International Plant Protection Convention (IPPC):**
  - A UN-FAO treaty aimed at preventing the **spread of pests** affecting plants.
  - Promotes international **phytosanitary standards**, crucial for defending against agroterror threats.
- **World Organisation for Animal Health (WOAH/OIE):**
  - Sets international norms for **animal disease monitoring** and emergency responses.
  - Integral to **One Health initiatives**, linking animal, human, and environmental health in agroterrorism contexts.
- **UN Security Council Resolution 1540 (2004):**
  - Legally binds all states to **prevent non-state actors** from acquiring biological weapons.
- **INTERPOL and Global Counterterrorism Forums:**
  - Assist with **investigations, surveillance, and capacity-building** to counter bio-threats, including agroterror incidents.

### Agro-Terrorism vs Agro-Crime – Comparative Features

Aspect	Agro-Terrorism	Agro-Crime
<b>Primary Motive</b>	Political, ideological, or psychological aims (e.g., destabilization, fear generation)	Profit-driven motives such as smuggling or fraud
<b>Perpetrators</b>	Terrorist groups, state-sponsored actors, ideological extremists	Organized crime rings, corrupt networks, individuals
<b>Targets</b>	Key crops, livestock, food supply chains, economic infrastructure	High-value commodities like seeds, fertilizers, or pesticide stocks
<b>Methods</b>	Use of pathogens (e.g., <i>Fusarium</i> ), cyberattacks on agri-tech, sabotage of food supply chains	Counterfeit agrochemicals, illegal GMO imports, thefts
<b>Examples</b>	Suspected <i>Fusarium</i> smuggling by Chinese researchers	Pesticide fraud schemes in India

### Case Study: *Fusarium graminearum*

- **Nature of Agent:** *Fusarium graminearum* is a highly toxic fungus that causes **Fusarium Head Blight (FHB)** in crops like wheat, barley, corn, and rice.
- **Climate Preference:** Thrives in **warm and humid conditions**, making tropical and subtropical regions particularly vulnerable.
- **Mode of Spread:** Spreads rapidly through **airborne spores**, capable of contaminating entire fields in short periods.
- **Toxic Output:** Produces **deoxynivalenol (DON)**, also known as *vomitoxin*, which is harmful to both humans and animals.
- **Economic Impact:** Infected fields can suffer **30–70% yield losses**, leading to massive economic shocks and food insecurity.
- **Weaponization Risk:** Its high toxicity and ease of spread have flagged it as a **potential agricultural bioweapon**.

Source: <https://www.indiatoday.in/world/story/what-is-agroterrorism-us-arrests-chinese-nationals-india-pakistan-bangladesh-2735471-2025-06-04>