

Ban on Paraquat Dichloride

Prelims: Current events of national and international importance | Environment

Why in News?

Recently, the Ministry of Agriculture and Farmers Welfare prohibited the registration of Paraquat Dichloride, one of India's most widely used non-selective contact herbicides.

Paraquat Dichloride

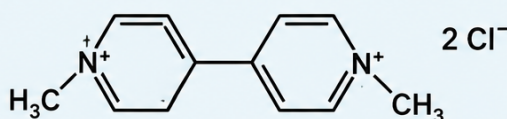
- It is a fast-acting, non-selective **ammonium herbicide** that disrupts plant photosynthesis by generating reactive oxygen species (free radicals).
- It destroys plant cell membranes upon contact with sunlight.
- **Agricultural Utility** - Widely utilized for pre-emergence weed control, zero-tillage field preparation, and desiccation in crops such as cotton, paddy, tea, maize, and sugarcane.

Paraquat Dichloride

A widely used herbicide, known for its high effectiveness — and high toxicity.



Chemical Structure



1,1'-dimethyl-4,4'-bipyridinium dichloride

Key Facts



Chemical name
1,1'-dimethyl-4,4'-bipyridinium dichloride



Type
Non-selective herbicide



Form
Liquid or solid (water-soluble)

Uses



- Controls broadleaf and grassy weeds
- Used in agriculture, forestry and non-crop areas

Key Risks



Highly toxic (even in small doses)



Can cause severe lung damage (pulmonary fibrosis)



Harmful if swallowed, inhaled or absorbed through skin

Important Note



Use requires strict regulation and protective measures due to its high toxicity.

Legal Provisions

- **Statutory Power** - Promulgated under **Section 27(2)** read with **Section 28** of the

Insecticides Act, 1968.

- It empowers the Central Government to ban or cancel registrations of toxic substances if their continued use poses unacceptable health risks.
- **Immediate Certificate Recall** - Directs the Registration Committee to recall all active Section 9 registration certificates from manufacturers and distributors, making failure to return certificates punishable under the Act.
- **State-Level Enforcement** - Mandates State Governments to take executive and administrative enforcement measures under the Act to halt the supply, trade, and application of the herbicide.

Toxicity

- **Absence of a Specific Antidote** - Ingestion of even a small quantity (10--15 ml) can be fatal, making medical intervention largely ineffective.
- **Severe Multi-Organ Damage** - Causes progressive **pulmonary fibrosis** (irreversible scarring of lung tissue), renal failure, and liver necrosis.
- **High Hazard in Self-Harm** - Accounted for a disproportionate share of accidental agricultural poisonings and intentional self-harm cases across rural India.
- **Global Regulatory Status** - Already banned or severely restricted in over **60 countries** including the European Union, China, Brazil, and the UK, due to its acute lethal toxicity and absence of a specific antidote.

Significance

- **Impulse for Bio-Herbicides** - Accelerates the transition toward sustainable weed management under India's National Mission on Natural Farming (NMNF), bio-herbicides, and mechanical weeding techniques.
- **Safer Alternatives** - Directs agricultural extension services to promote less toxic alternatives such as **Glufosinate-ammonium** or targeted selective pre-emergence herbicides.

Reference

[New Indian Express | India bans Paraquat Dichloride](#)