Manchurian walnut tree

Prelims: *Current events of national and international importance*

Why in News?

Researchers have found that leaves from the Manchurian walnut tree contain a natural compound, 2Z-decaprenol, that can kill weeds by disrupting their growth pathways and activating their defense systems.

- **Recent discovery -** The study published identified a compound called 2Z-decaprenol extracted from Juglans mandshurica leaves.
- The research showed that this compound disrupted root development, triggered defence pathways and interfered with stress-response genes in weeds and showed its extreme strength.
- The plant leaf natural weed killer proved far more potent than juglone, a previously known allelopathic compound found in walnut species.
- This discovery has opened a new chapter in eco-friendly weed management.

Manchurian walnut tree

- It is a ***cold-hardy walnut species*** native to Northeast Asia (China's Manchuria region, North Korea, South Korea, and the Russian Far East).
- **Scientific name -** Juglans mandshurica
- **Family** - Juglandaceae
- **Type** - Deciduous tree
- **Height** - Up to 25–30 m
- **Leaves** - Large, pinnate (many leaflets), aromatic when crushed
- **Bark** - Grey-brown, rough and fissured
- **Fruit** - Round nuts with thick, hard shells.
- **Habitat & growth**
  - Thrives in temperate, cold regions
  - Prefers deep, fertile, well-drained soil
  - Tolerates severe frost better than most walnuts
  - Grows best in full sun or light shade

- **Uses**
  - **Timber**
    - Hard and durable
    - Used for furniture, flooring, and carving
  - **Traditional medicine**
    - Bark and hulls used in East Asian medicine
    - Contains compounds with antifungal and antiparasitic properties
  - **Edible nuts**
    - Kernels are edible but harder to extract due to thick shells
    - Less commercially popular than English walnut
  - **Ecological role**
    - Supports forest biodiversity
    - Provides food for wildlife
- **Chemical feature (Juglone) -** Like other walnuts, it releases juglone, a natural chemical that Inhibits the growth of nearby sensitive plants and gives the tree natural pest resistance.

Reference

Times of India | Manchurian Walnut Tree

