UPSC Daily Current Affairs | Prelim Bits 19-07-2024

Late Blight Diseases

Central Potato Research Institute (CPRI) has issued an advisory for potato farmers across the country, warning a high risk of late blight disease in the crop due to changes in weather conditions.

- Late blight is a ***water mold disease*** that can affect tomato and potato plants and is caused by the fungal-like pathogen, ***Phytophthora infestans.***



- **Favored condition -** Late blight is favored by cool, damp conditions and humid regions with temperatures between 4 and 29 °C.
- **Symptoms**
  - **Leaves -** Large, dark brown blotches with a green gray edge.
  - **Stems -** Firm, dark brown with a rounded edge.
  - **Fruits -** Firm, dark brown, circular spots that may become mushy.
  - **Tubers -** Discolored, anywhere from brown to red to purple.
  - **Lesions -** Round or irregularly shaped areas that range in color from dark green to purplish black.
- **Threat -** The disease spreads quickly in fields and can result in total crop failure if untreated.
- **Prevention -** Farmers are advised to spray fungicides like cymoxanil + mancozeb, fermion + mancozeb, or dimethomorph + mancozeb.
- **Prevalent Regions -** Late blight occurs frequently in the districts of Hoshiarpur, Jalandhar, Nawan Shehar, Kapurthala, Ropar and Amritsar of Punjab.

Lahual Valley
• Lahaul Valley, a coldest desert in Himachal Pradesh, which is a prominent place of potato producing. • Low Aphid population in the state also a reason that contributing the disease-resistant potatoes. • Lahaul Valley is famous for cultivating prized seed varieties of potatoes Kufri Chandramukhi, Kufri Jyoti, Table Santana, and Shepody

Reference

Hindustan Times | Light Blate Diseases

Chagos Archipelago

India has reiterated its support for Mauritius in its sovereignty dispute with the UK over the Chagos archipelago.

- **Chagos Archipelago** – It is a group of islands located in the *central Indian Ocean.*
- **Location-** It is situated approximately 1,600 kilometers (1,000 miles) south of *India and Sri Lanka.*



- **Physiography-** It consists of about *60 small islands*, with the largest and most significant being ***Diego Garcia***.
- **Climate-** They have a *tropical climate* with warm temperatures year-round, high humidity, and seasonal rainfall.
- **Biodiversity-** It is known for its rich biodiversity, including coral reefs, various species of fish, and seabirds.
- It is part of the *British Indian Ocean Territory Marine Protected Area*, which aims to conserve its unique marine environment.
- **Territorial dispute-** The dispute is *between Mauritius and the United Kingdom* (UK).
- **Historical background**- It was originally a part of the British colony of Mauritius.
- In 1965, the UK separated it from Mauritius and established it as the *British Indian Ocean Territory (BIOT)*.

- In 1966, Britain *leased Diego Garcia to the United States*, which was seeking a military base in the region.
- Mauritius, which gained independence from Britain in 1968, has consistently maintained its claim over the Chagos Islands
- **Current status** – In 2019, the *International Court of Justice* ruled that the *UK had no right to govern* the Chagos Islands and urged it to withdraw from the archipelago.

References

1. Hindustan times | Chagos Archipelago
2. Chagos trust | Chagos Archipelago

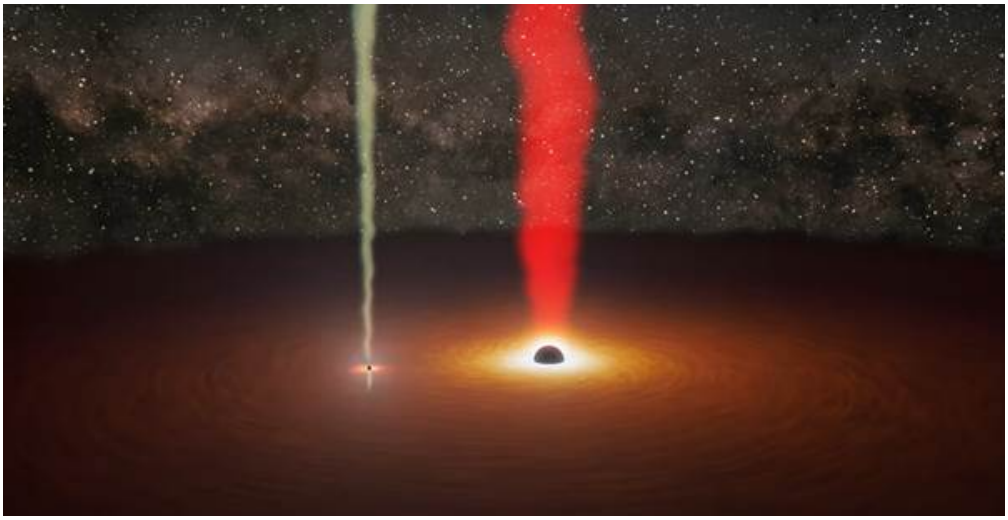
OJ 287 and Black Hole Pairs

A recent study has spotted the smaller black hole in a pair, marking the first confirmed sighting of an orbiting black hole.

- **OJ 287** – It is a distant galaxy, four billion light years away.
- **Black holes in OJ 287** – NASA's TESS satellite have confirmed the theory that there are *two black holes at the centre of OJ 287*.
- Researchers have found indirect evidence that a very *massive black hole in OJ 287 is orbiting a giant black hole* 100 times its size.
- **Discovery** - TESS monitored the brightness of the primary black hole and the jet associated with it.
- **Observation of black hole orbiting another** - Direct observation of the smaller black hole orbiting the larger one is very difficult, but its presence was revealed *by a sudden burst of brightness.*
- **Fast burst of brightness** - It occurs *when the smaller black hole "swallows" a large slice of the accretion disk* surrounding the larger black hole, turning it into an outward jet of gas.

  Both black holes have jets associated with them, the larger one with reddish colour, and the smaller one with a yellowish colour jet.

- The jet of the *smaller black hole is then brighter than that of the larger* black hole for about twelve hours.
- **Color changes** – This event *makes the colour of OJ287 less reddish, or "yellow"*, instead of the normal red and after the burst, the red colour returns.
- The "yellow" colour indicates that for the 12-hour period, we are seeing the light from the smaller black hole.



Transiting Exoplanet Survey Satellite (TESS)
• **TESS** – It is an Astrophysics Explorer mission. • **Launched by**- NASA, led and operated by MIT in Cambridge and Massachusetts. • **Aim**- To discover thousands of exoplanets orbit around the brightest dwarf stars in the sky. • **Findings** – It is finding planets ranging from small, rocky worlds to giant planets, showcasing the diversity of planets in our galaxy. • **Significance**- It has so far found 410 confirmed exoplanets or new worlds circling stars other than the Sun.

References

1. PIB| Galaxy OJ 287 and Black Hole Pairs

Shadow Cabinet

Recently, Leader of the Opposition (LoP) in Odisha has formed a Shadow Cabinet in legislative assembly to track Government Works.

- **Origin** – It is a *unique system of British Cabinet system*.
- **Shadow Cabinet** – It is *formed by the opposition party* to *balance the ruling cabinet* and to prepare its members for future ministerial office.
- Almost every member in the *ruling cabinet is 'shadowed'* by a corresponding member in the opposition cabinet.
- **Role** - It serves as the '*alternate cabinet*' if there is change of government.

Ivor Jennings described the leader of Opposition as the 'alternative Prime Minister' considering the importance of shadow cabinet.

- **Existence** – United Kingdom, Australia, Canada, and New Zealand.
- In Britain, the opposition enjoys an official recognition and is well organised as the government and thus runs a 'Parallel' government with its shadow cabinet.

- **In India** – As of now, there is *no official shadow cabinet* formed in *the Parliament* and is *not mandated by the law*.
- The Parliament can amend its rules to formally recognize the LoP and grant them the right to appoint a shadow cabinet.
- Previously, Maharashtra, Kerala, Madhya Pradesh, and Goa governments has experiments with Shadow Cabinet in India.
- In Odisha, 50 MLAs were assigned various departments for monitoring the policies and programmes implemented by the ruling government in the state.
- **Benefits –** By shadowing each ministries, MLAs/MPs can gain knowledge, expertise, and enabling them to participate during assembly debates.

Reference

Indian Express| Shadow Cabinet

