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Salvinia molesta

An exotic beetle, *Cyrtobagous salviniae* released into a reservoir built on the Tawa river in Madhya Pradesh has successfully eradicated an invasive weed species, *Salvinia molesta* recently.

- **Common name-** Giant salvinia.
- It is an ***invasive aquatic fern*** that floats on the surface of the water.
- *Salvinia molesta* is named after Antonio Maria Salvini, an Italian naturalist.
- It is locally known as “***Chinese Jhalaar***” which was first spotted in India in 2018 and had completely carpeted the reservoir by 2019.



- **Appearance-** *Salvinia molesta* consists of ***floating leaves*** and submerged root-like structures.
- The floating leaves are oval to oblong, measuring about 2-5 cm in length.
- **Habitat-** It thrives in slow-moving, nutrient-rich freshwater bodies like ponds, lakes, rivers, and irrigation channels.
- **Distribution**
 - **Native Range-** Southeastern Brazil.
 - **Invasive Range-** It has spread to many parts of the world, including North America, Europe, Asia, Africa, and Australia.

- **Reproduction-** It has a very high rate of reproduction. It reproduces vegetatively through fragmentation.
- **Environmental Impact-** Dense mats of *Salvinia molesta* ***block sunlight, reducing oxygen levels*** in the water and harming aquatic life.
- They can also disrupt native plant communities and alter habitats.

Cyrtobagous salviniae

- The salvinia weevil, *Cyrtobagous salviniae* is a subaquatic (underwater) herbivorous insect.
- **Native** - Brazil.
- This insect feeds on the invasive aquatic plants *Salvinia molesta* and *Salvinia minima* (Baker).
- These insects can breathe underwater through an air bubble (called a plastron) that they create and attach to the underside of their body.
- This insect is an effective classical biological control agent used in several countries to control the invasive giant salvinia, *Salvinia molesta*.



Tawa River

- Tawa River is a river located in the central part of India, primarily in the state of Madhya Pradesh.
- **Location**-The Tawa River originates in the Satpura Range of Madhya Pradesh.
- **Tributary**- It is a significant tributary of the Narmada River, one of the major rivers in India.
- The Tawa River begins in the Satpura Range, which is known for its lush greenery and dense forests.
- **Flora and Fauna**- The river and its surrounding areas support a rich variety of wildlife and plant species.
- The Satpura Range, through which the river flows, is home to numerous species of birds, animals, and plants.
- **Significance**-The Tawa River is crucial for irrigation in the region, supporting agriculture in the fertile plains of Hoshangabad and nearby areas.

Reference

1. [Down to Earth | Salvinia molesta](#)

Talacauvery Wildlife Sanctuary

The National Green Tribunal (NGT) principal bench has taken suo moto cognizance of alleged tree felling and burning near Talacauvery Wildlife Sanctuary.

Tree felling and burning indicate a violation of the provisions of the Environment Protection Act, of 1986, and the Forest (Conservation) Act, of 1980.

- **Location** - It is a wildlife sanctuary in ***Karnataka***.
- It is also known as the Greater Talacauvery National Park and was declared a sanctuary in **1987**.
- It is located in the ***Brahmagiri hills***, which is part of the ***Western Ghats***, a ***UNESCO World Heritage site***.
- **Border** - It borders Ranipuram Hills and Kottencheri Hills in the Kasaragod district of Kerala.
- **Geography** - It is characterized by dense evergreen forests that have largely remained untouched.
- **Flora** - Key plant species include rosewood, teak, and laurels.

- **Fauna** - Elephants, tigers, leopards, Indian bison (gaur), wild boar, Malabar giant squirrels, and sambar deer, Great Indian hornbill, Malabar trogon, and various species of woodpeckers, flycatchers, and thrushes.
- **Cultural significance** - The sanctuary is home to the ***Talakaveri temple***, an important pilgrimage site where the Kaveri river is believed to originate.

River Kaveri

- **Origin** - The Kaveri River originates at ***Talakaveri*** in the Western Ghats in Kodagu district, Karnataka.
- **Flow** - It flows southeast for about 800 kilometers through the states of ***Karnataka and Tamil Nadu*** before emptying into the ***Bay of Bengal***.
- **Tributaries**
 - **Left Bank** - Harangi, Hemavati, Shimsha, Arkavati.
 - **Right Bank** - Lakshmana Tirtha, Kabini, Bhavani, Noyyal, Amaravati.
- **Dams and Reservoirs** - ***Krishna Raja Sagara (KRS) Dam*** and ***Mettur Dam***.
- **Interstate Water Dispute** - The Kaveri water dispute between ***Karnataka and Tamil Nadu*** has been one of India's most contentious interstate water disputes.

Reference

[The Hindu | Talacauvery Wildlife Sanctuary](#)

New Food Packaging Rules

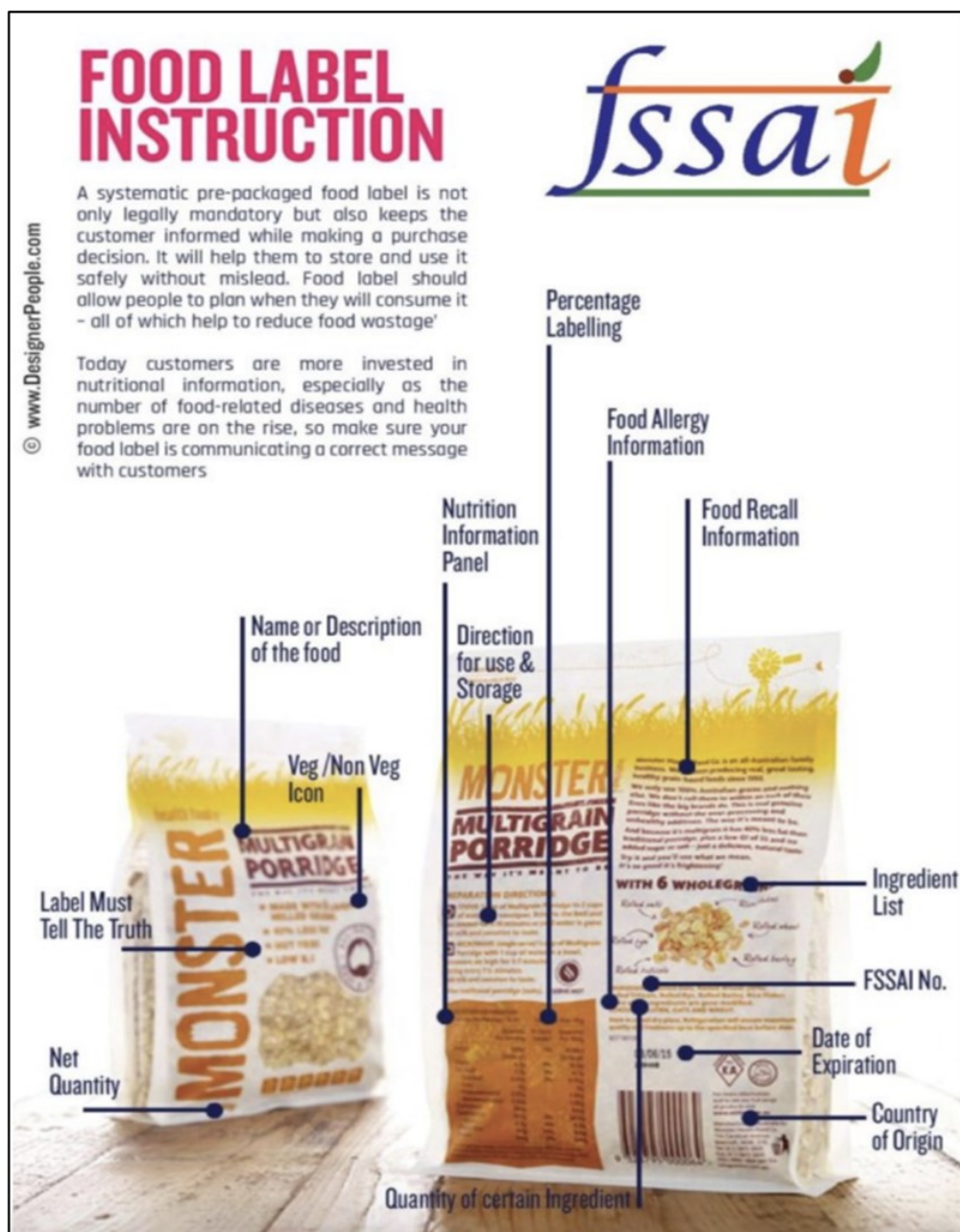
Recently, The FSSAI approved an amendment to the Food Safety and Standards (Labelling and Display) Regulations, 2020, concerning nutritional information labeling during its 44th meeting.

- **New rules on Nutritional information** - It has mandated the display of nutritional information on ***total sugar, salt, and saturated fat*** in bold letters and larger font sizes.
- **Aim of the new rules** - The proposed amendments aims to empower consumers to better understand the nutritional value of the products they consume, promoting healthier decisions.

As per the FSSAI, regulations 2 (v) and 5(3) of the FSS (labeling and

display) regulation, 2020, specify requirements to mention serving size and nutritional information on the food product label, respectively.

- **e-commerce** - FSSAI advised e-commerce sites to remove the term "health drink" and directed food businesses to stop labeling and advertising reconstituted fruit juices as "**100% fruit juice.**"
- **Governing body** - In India, the ***Food Safety and Standards Authority of India (FSSAI)*** serves as the authority that mandates food labeling standards.



- **Penalty on noncompliance** - Any unintentional breach of FSSAI food labeling standards and failure to secure a Food Business license may lead

to consequences such as fines, penalties, product recalls, or delays in product launches.

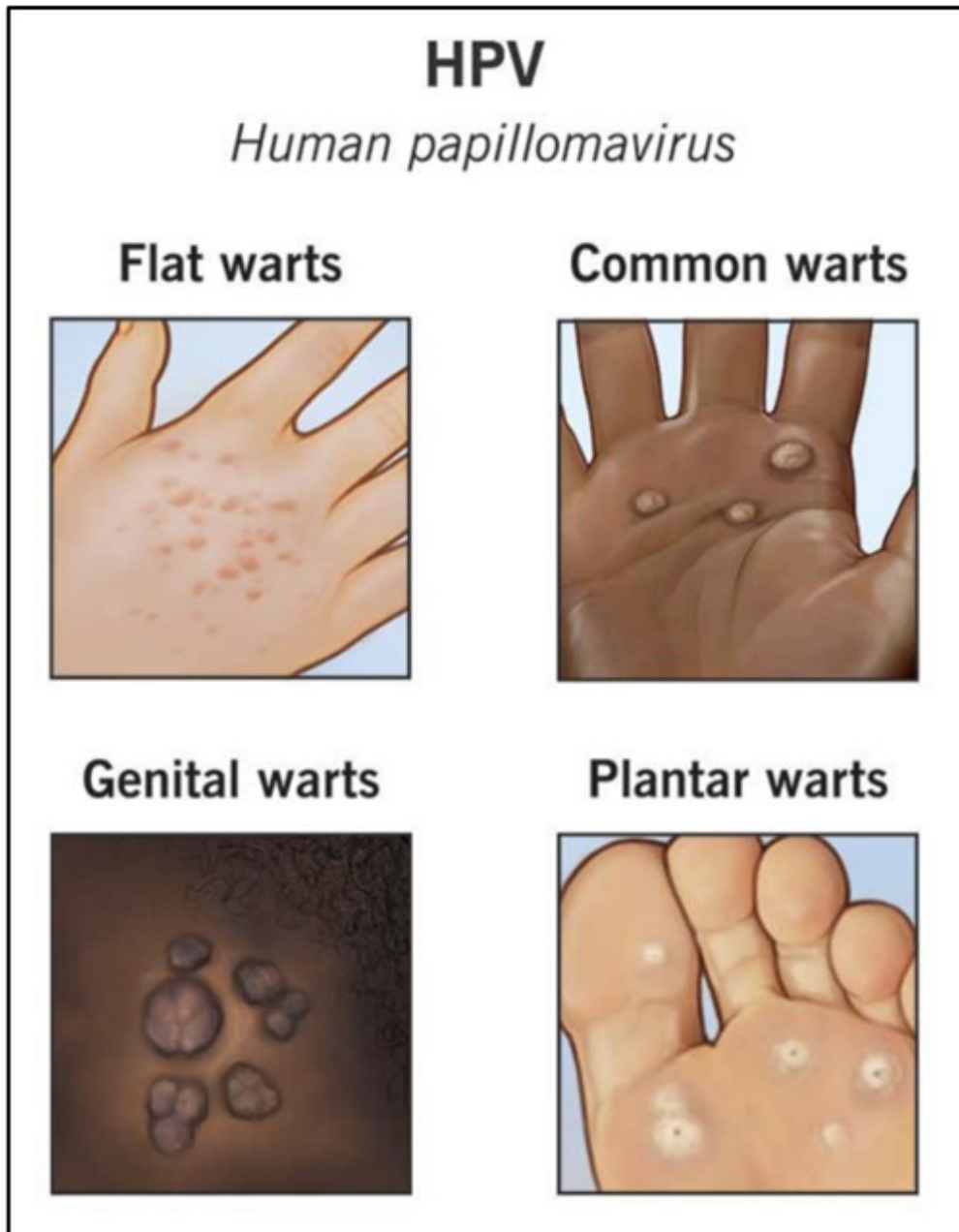
References

1. [Business Standard | FSSAI rules](#)
2. [PIB | 44th meeting of FSSAI](#)

Human Papilloma Virus (HPV)

India's public health sphere recently saw a one-sided discussion on how HPV vaccination prevents cervical cancer and reduces related deaths.

- It is a ***viral infection***.
- There are more than 100 varieties of human papillomavirus (HPV).
- Some types of human papillomavirus (HPV) infection cause ***skin or mucous membrane growths (warts)*** and some can cause ***different types of cancer***.



- Most HPV infections ***don't lead to cancer***. But some types of genital HPV can cause cancer of the lower part of the uterus that connects to the vagina (cervix).
- Other types of cancers, including cancers of the ***anus, penis, vagina, vulva, and back of the throat (oropharyngeal)***, have been linked to HPV infection.
- **Symptoms of HPV** - it includes Genital warts, Common warts, Plantar warts, Flat warts.
- **Transmission of HPV** - These infections are often transmitted sexually or through other skin-to-skin contact.
- **Vaccine** - Vaccines can help protect against the strains of HPV most likely to cause genital warts or cervical cancer.
- ***Gardasil 9*** is an HPV vaccine approved by the U.S. Food and Drug

Administration and can be used for males and females to protect against cervical cancer and genital warts.

Quick fact

- **Cervical cancer** - Nearly all cervical cancers are caused by HPV infections, but cervical cancer may take 20 years or longer to develop after an HPV infection.
- Cervical cancer ***doesn't cause symptoms***.
- Getting ***vaccinated against HPV infection*** is your best protection from cervical cancer.
- The Serum Institute of India (SII) has developed '***Cervavac***'.
- It is a ***vaccine against cervical cancer***.
- It uses similar techniques, deploying virus-like particles (***VLPs***) produced using recombinant deoxyribose nucleic acid (***rDNA***) techniques to generate an immune response against HPV infections.
- It is only the ***second rDNA vaccine in the world*** using the techniques of the early 1970s, the first being the vaccine against ***Hepatitis-B***.

References

1. [The Hindu | Indigenous HPV vaccine](#)
2. [Mayo Clinic | HPV infection](#)