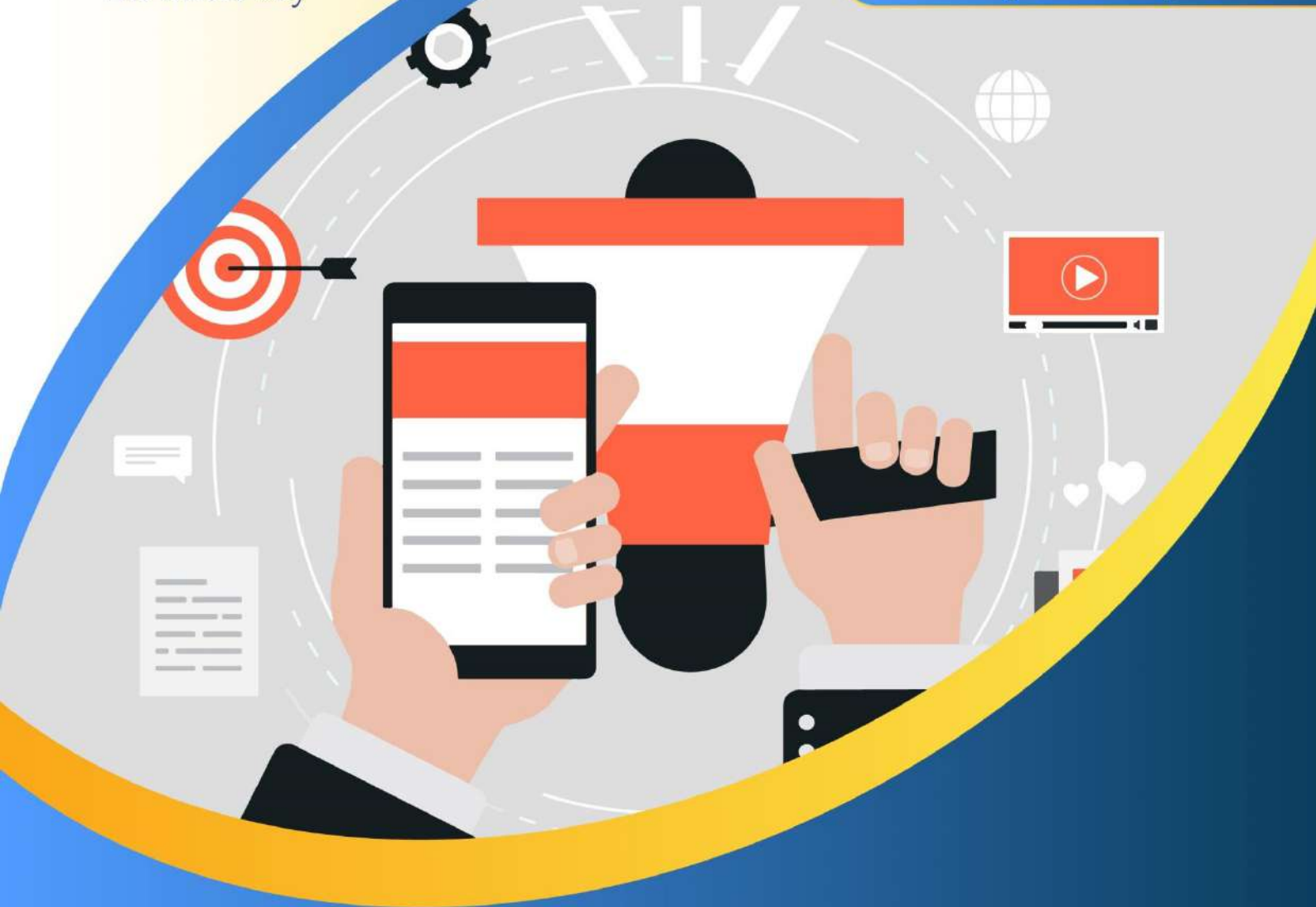


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2021 Current Affairs for Prelims 2021

AGRICULTURE

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AGRICULTURE

1. Scheme for Creation of Infrastructure for Agro-Processing Cluster (APC)

In news- The government has approved seven projects to create infrastructure for agro-processing clusters with an estimated cost of ₹235 crore under the Scheme for Creation of Infrastructure for Agro-Processing Cluster (APC).

About Scheme for Creation of Infrastructure for APC:

- The Ministry of Food Processing Industries has formulated the Scheme as a sub-scheme of Central Sector Scheme 'Pradhan Mantri Kisan Sampada Yojana (PMKSY)'.
- The scheme **aims at development of modern infrastructure to encourage entrepreneurs to set up food processing units** based on cluster approach.
- The scheme is to be **implemented in the area of horticulture/agriculture production** identified through a mapping exercise.
- The Scheme envisages **grants-in-aid at 35% of eligible project cost** in general areas and at **50% of eligible project cost in the North East States** and Himalayan States.
- **Components of the Scheme** include enabling infrastructure like development of industrial plots, boundary wall, roads, drainage, water supply, electricity supply, effluent treatment plant, parking bay, weigh bridges, common office space etc...
- **Core infrastructure** including common facilities will be based on the needs of the units which will be set up in these clusters.

Pradhan Mantri Kisan Sampada Yojana-

- In 2016, the Ministry of Food Processing Industries (MoFPI) introduced an umbrella Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA), which was proposed to be implemented with an allocation of Rs. 6,000 crores for the period of 2016-20.
- In 2017, it was renamed as the Pradhan Mantri Kisan Sampada Yojana (PMKSY).
- It is a Central Sector Scheme.
- **Seven component schemes under PMKSY** include Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, Infrastructure for APC, Creation of Backward and Forward Linkages, Creation/Expansion of Food Processing and Preservation Capacities, Food Safety and Quality Assurance Infrastructure, Human Resources and Institutions.

2. Xoo Infection

In News- Scientists from the Centre for Plant Molecular Biology (CPMB) have uncovered the mechanism by which bacterium called Xoo causes disease in rice plants.

About Xoo-

- *Xanthomonas oryzae* pv. *oryzae* (Xoo) causes a serious **bacterial leaf blight disease in rice** and causes huge yield losses to rice cultivation.
- It is also known as Bacterial blight.
- Xoo is a **gram-negative bacteria**.
- Xoo infection **initiates from the leaf sheath and eventually spreads to mature leaves** through the water flow under optimum temperature and high humidity conditions (Vascular disease).

Prevention-

- The most-common method of defending against rice bacterial blight is the cultivation of rice varieties with genes that confer resistance to Xoo infection.
- Over 30 resistance genes, termed Xa1 to Xa33, have been identified in rice plants, and some, such as Xa21, have been integrated into the genomes of commercial rice strains.
- However, the introduced resistance genes provide only race-specific resistance that will prevent infections by only specific strains of Xoo.
- Treatment of rice with cellulase, a cell wall degrading enzyme secreted by Xoo induces rice immune responses and protects rice from subsequent infections by Xoo.

3. Biotech-KISAN Programme

- Biotech-KISAN programme is a farmer-centric scheme under the Department of Biotechnology, Ministry of Science and Technology.
- Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) programme plays an important role in taking innovative biotechnologies to the farmers.
- It is a pan-India program, following a hub-and-spoke model.
- It has a unique feature to identify and promote local farm leadership in both genders.
- It aims to understand the problems of water, soil, seed and market faced by the farmers and provide simple solutions to them.
- Currently, there are a total of eight Biotech-KISAN Hubs in different Agro-climatic Zones.

4. National Innovations in Climate Resilient Agriculture (NICRA)

Union Minister of Agriculture gave the following key updates in Lok Sabha:

- The rainfed rice yields in India are projected to reduce marginally (<2.5%) in 2050 and 2080 and irrigated rice yields by 7% in 2050 and 10% in 2080 scenarios.
- Further, wheat yield is projected to reduce by 6-25% in 2100 and maize yields by 18-23%.
- Future climates are likely to benefit chickpea with increase in productivity (23-54%).
- Impact of climate change on Indian agriculture was studied under National Innovations in Climate Resilient Agriculture (NICRA).
- Vulnerability assessment of Indian Agriculture to climate change is undertaken by Indian Council of Agricultural Research (ICAR).
- Based on the vulnerability analysis, 109 districts out of 573 rural districts (19% of total districts) are 'very high-risk' districts, while 201 districts are risk districts.
- Under the NICRA project, wheat germplasm consisting of advanced breeding lines and land races have been screened for heat/drought tolerance.

ICAR launched NICRA during 2010-11 with the following objectives-

- To enhance the resilience of Indian agriculture covering crops, livestock and fisheries to climatic variability and climate change through development and application of improved production and risk management technologies.
- To demonstrate site specific technology packages on farmers' fields for adapting to current climate risks.
- To enhance the capacity building of scientists and other stakeholders in climate resilient agricultural research and its application.

5. Participatory Guarantee System (PGS):

- PGS is one of the processes of certifying organic products.
- The certification is in the form of a **documented logo or a statement**.
- It is implemented by the **Ministry of Agriculture and Farmers' Welfare**.
- PGS of certifying organic products ensures that their production takes place in accordance with laid-down quality standards.
- It is a “quality assurance initiative that is locally relevant, emphasizes the participation of stakeholders, including producers and consumers, and operate outside the framework of third-party certification”.
- Four pillars of PGS-
- The government’s 2015 PGS manual underlines that the system in India is based on “participatory approach, a shared vision, transparency and trust”.
- **Participation:** Stakeholders such as producers, consumers, retailers, traders, NGOs, Gram Panchayats, and government organisations and agencies are collectively responsible for designing, operating, and decision-making.
- **Shared Vision:** Collective responsibility for implementation and decision making is driven by a common shared vision.
- **Transparency:** At the grassroots level, transparency is maintained through the active participation of producers in the organic guarantee process, which can include information-sharing at meetings and workshops, peer reviews and involvement in decision making.
- **Trust:** A fundamental premise of PGS is the idea that producers can be trusted, and that the organic guarantee system can be an expression and verification of this trust.

Advantages of PGS-

- Procedures are simple, documents are basic, and farmers understand the local language used.
- Unlike the grower group certification system, PGS offers every farmer individual certificates, and the farmer is free to market his own produce independent of the group.
- Limitations of PGS-
- PGS certification is only for farmers or communities that can organise and perform as a group within a village or a cluster of contiguous villages, and is applicable only to farm activities.
- **Individual farmers or groups of farmers smaller than five members are not covered under PGS.** They either have to opt for third party certification or join the existing PGS local group.

6. Domestic Systemically Important Banks:

In news- Recently, the RBI released a list of Domestic Systemically Important Banks (D-SIBs).

Background-

The D-SIB framework of 2014 requires the Reserve Bank to disclose the names of banks designated as D-SIBs starting from 2015 and place these banks in appropriate buckets depending upon their **Systemic Importance Scores (SISs)**.

List of D-SIBs by RBI(2020)-

- SBI, ICICI Bank, and HDFC Bank continue to be identified as D-SIBs under the same bucketing structure as in the 2018 list of D-SIBs.
- The additional Common Equity Tier 1 (CET1) requirement for D-SIBs was phased-in from April 1, 2016 and became fully effective from April 1, 2019.

What are Domestic Systemically Important Banks (D-SIBs)?

- D-SIBs means that they are too big to fail.
- As per RBI, some banks become systemically important due to their size, cross-jurisdictional activities, complexity and lack of substitute and interconnection.
- Banks whose assets exceed 2% of GDP are considered part of this group.
- According to RBI, if such banks fail, there would be significant disruption to the essential services they provide to the banking system and the overall economy.
- The too-big-to-fail tag indicates that in case of distress, the government is expected to support these banks.
- Hence these banks enjoy certain advantages in funding.
- It also means that these banks have a different set of policy measures regarding systemic risks and moral hazard issues.

7. GrapeNet System:

In news- Recently, the APEDA upgraded the GrapeNet to ensure secured, scalable and cost effective interface in the exports value chain

What is GrapeNet?

- The GrapeNet is a web based certification and traceability software system for monitoring fresh grapes exported from India to the European Union.
- GrapeNet is a first of its kind initiative in India that has put in place an end-to-end system for monitoring pesticide residue, achieve product standardization and facilitate tracing back from retail shelves to the farm of the Indian grower, through the various stages of sampling, testing, certification and packing
- In a bid to ensure cyber security protection for its traceability initiative, APEDA has adopted next generation Blockchain and Cloud migration enabled GrapeNet System which would ensure a secured, scalable and cost effective interface for all the stakeholders in the exports value chain.
- The software can be easily used - anywhere, anytime, 24/7, by all authorized stakeholders.
- It has virtually reduced duplication in data capture and enables instant reference of previous steps in the supply chain.

8. Sahi Fasal campaign:

'Sahi Fasal' campaign was launched by National Water Mission in 2019 to nudge farmers in the water stressed areas to grow crops which are not water intensive, but use water very efficiently.

Key elements of the campaign-

- Creating awareness among farmers on appropriate crops, micro-irrigation, soil moisture conservation etc
- Weaning them away from water intensive crops like paddy, sugarcane etc to crops like corn, maize etc which require less water
- Assisting policy makers to frame policies that make effective pricing of inputs (water and electricity)
- Improve procurement and market for these alternate crops; create appropriate storage them etc ultimately leading to increase in the income of farmers

9. Floriculture Mission

In news: Recently, Floriculture Mission has been approved for implementation in 21 States and Union Territories of India.

About the Mission:

- It is launched by Council of Scientific and Industrial Research (CSIR).
- Mission is implemented in collaboration with Indian Council of Agricultural Research (ICAR), Khadi and Village Industries Commission (KVIC), APEDA, TRIFED, Fragrance and Flavour Development Centre (FFDC) and Universities.
- Mission focuses on commercial floral crops, seasonal or annual crops, wild ornaments and cultivation of flower crops for honey bee rearing.

10. Bharatiya Prakritik Krishi Paddhati (BPKP)

In news: Recently, NITI Aayog held a national-level consultation on the 'Principles and Practices of BPKP (Bhartiya Prakritik Krishi Paddhati)-Natural Farming'.

Bharatiya Prakritik Krishi Paddhati (BPKP) programme:

- Natural farming is promoted as Bharatiya Prakritik Krishi Paddhati Programme (BPKP) under centrally sponsored scheme **Paramparagat Krishi Vikas Yojana (PKVY)**.
- **Aim of BPKP** is aimed at promoting traditional indigenous practices which reduces externally purchased inputs.
- It is **largely based on** on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations, periodic soil aeration and exclusion of all synthetic chemical inputs.
- It has been **adopted in the States of** Andhra Pradesh, Karnataka, Himachal Pradesh, Gujarat, Uttar Pradesh and Kerala.

What is Natural Farming?

- Natural Farming is a chemical-free alias traditional farming method.
- It is considered as an agroecology based diversified farming system which integrates crops, trees and livestock with functional biodiversity.
- It is considered as a cost-effective farming practices with scope for raising employment and rural development.

11. Kisan Rath Mobile App

In news: Government of India launched this app to help farmers during Covid-19 lockdown.

About Kisan Rath mobile app-

- Farmers, Traders, FPOs (Farmer Producer Organisations) and Transporters can register on the app.
- It was launched by the **Ministry of Agriculture & Farmers' Welfare**.
- It facilitates farmers, FPOs and traders across India to **search and contact the transport service providers for transporting the Agriculture & Horticulture produce**.
- The app interfaces with major transport **aggregators** and also **allows individual transporters to register their vehicles** and provide services to farmers and traders.
- The app is available in **select languages**.
- It facilitates Farmers and Traders in identifying right mode of transportation for movement of farm produce ranging from foodgrain (cereal, coarse cereal, pulses etc), Fruits & Vegetables, oil seeds, spices, fiber crops, flowers, bamboo, log & minor forest produce, coconuts etc.

- This App also facilitates traders in transportation of perishable commodities by Reefer (Refrigerated) vehicles.

12. Red rice from Assam

In news: Recently, the first consignment of 'red rice' was flagged off to the USA.

What is red rice?

- Red rice can be any of multiple varieties of rice that are **high in anthocyanin, an antioxidant pigment** that dyes the bran of the rice grain a reddish color
- The red rice is being sourced by leading rice exporter - LT Foods.
- **Agricultural and Processed Food Products Export Development Authority (APEDA)** is promoting rice exports through collaborations with various stakeholders in the value chains.
- The government had set up the **Rice Export Promotion Forum (REPF)**, under the aegis of the APEDA.
- Iron-rich 'red rice' is **grown in the Brahmaputra valley of Assam, without the use of any chemical fertilizer.**
- This variety is referred as '**Bao-dhaan**' in Assam which is a **deep water rice**, cultivated on low, swampy lands and flood prone areas .
- The rice **has a high content** of iron, protein, vitamins, magnesium, phosphorus, selenium, thiamine, niacin, manganese and is high in fibre.
- There are **several varieties** of Bao rice in Assam such as Neghari-Bao, Dal-Bao, Panindraand Maguri-Bao, Padmatai, Panikekoa, Padmanath, Sabita, Rangi-Bao, Badal, etc..

13. Jammu's Purple Revolution

In news: Around 500 farmers across villages in Doda of Jammu and Kashmir had their incomes quadrupled after shifting from maize to lavender.

More about it-

- The initiative was taken in 2016, when the **Centre launched Aroma Mission** to boost cultivation of plants like lavender which have aromatic medicinal properties.
- Council of Scientific and Industrial Research (**CSIR**) and **Indian Institute of Integrative Medicine, Jammu (IIIM Jammu)**, are the two bodies responsible for taking the Aroma Mission forward.
- The Mission is envisaged to bring transformative change in the aroma sector through desired interventions in the areas of agriculture, processing and product development.
- The mission will promote the cultivation of aromatic crops for essential oils that are in great demand by the aroma industry.
- On February 9, 2021, CSIR-IIIM-Jammu announced **Aroma Mission phase 2.**
- The mission is **to increase lavender cultivation to 1,500 hectares within three years.**
- At present, large-scale lavender cultivation is limited to J&K but governments in Himachal Pradesh, Arunachal Pradesh and Uttarakhand are also encouraging their farmers to take up lavender.

14. Sadabahar mango

In news- Shrikishan Suman, a farmer from Kota, Rajasthan, has developed an innovative mango variety called Sadabahar.

About Sadabahar mango-

- Sadabahar mango variety as the name suggests a regular and continuous fruit bearing variety which means it blooms throughout the year.
- It is resistant to most major diseases and common mango disorders.
- The fruits are sweeter in taste and it is developed as a dwarf variety which is suitable for kitchen gardening and can be grown in pots for some years.
- Besides, the flesh of the fruits, which is bourn round the year, is deep orange with sweet taste, and the pulp has very less fiber content which differentiates it from other varieties.
- Other Salient features of the variety include higher yield (5-6 t/ha), fruiting throughout the year and High-density plantation.
- The innovative attributes of the variety have been verified by the National Innovation Foundation (NIF), India, an autonomous institution of the Department of Science & Technology.
- NIF also facilitated an on-site evaluation of the variety through ICAR - Indian Institute of Horticultural Research (IIHR), Bangalore, and a field testing at SKN Agriculture University, Jobner (Jaipur), Rajasthan.
- It is in the process of being registered under the Protection of Plant Variety and Farmers Right Act and ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi.
- NIF has also facilitated the plantation of Sadabahar mango variety in the Mughal Garden at Rashtrapati Bhawan in New Delhi.
- For this evergreen variety developed, Shrikishan Suman was conferred the NIF's 9th National Grassroots Innovation and Traditional Knowledge Award and subsequently recognised at various other fora.

Types/varieties of Mangoes in India-

Alphonso(Hapus) – Ratnagiri, Badami – Karnataka (Known as Alphonso of Karnataka), Chaunsa – Bihar and Uttar Pradesh, Langra – Bihar and Uttar Pradesh, Dasherri – Malihabad, Uttar Pradesh, Kesar – Saurashtra, Gujarat, Mulgoba – Tamil Nadu, Himsagar – West Bengal, Benishan Mango – Banganapalli, Andhra Pradesh, Imam Pasand – South India

Mango and its significance-

- Mangifera indica is the National Fruit of India
- Its juicy fruit is a rich source of Vitamins A, C and D.
- The poet Kalidasa sang its praises.
- Alexander savoured its taste, as did the Chinese pilgrim Hieun Tsang.
- Mughal emperor Akbar planted 100,000 mango trees in Darbhanga, Bihar at a place now known as Lakhi Bagh.

15. Robo Plants

In news- The scientists from Singapore have developed a technology to interact with Plant named “Robo Plant”.

About Robo Plant Technology-

- Remote-controlled Venus flytrap "robo-plants" and crops that tell farmers when they are hit by disease could become reality after scientists developed a high-tech system for communicating with vegetation.
- Researchers in Singapore linked up plants to electrodes capable of monitoring the weak electrical pulses naturally emitted by the greenery.
- The scientists used the technology to trigger a Venus flytrap to snap its jaws shut at the push of a button on a smartphone app.
- They then attached one of its jaws to a robotic arm and got the contraption to pick up a piece of wire half a millimetre thick, and catch a small falling object.

- The technology is in its early stages, but researchers believe it could eventually be used to build advanced "plant-based robots" that can pick up a host of fragile objects which are too delicate for rigid, robotic arms.
- Scientists can stimulate the fly trap's jaws to slam shut but can't yet reopen them a process that takes 10 or more hours to happen naturally.

Significance-

- By monitoring the plants' electrical signals, we may be able to detect possible distress signals and abnormalities.
- Farmers may find out when a disease is in progress, even before full-blown symptoms appear on the crops.
- Technology could be particularly useful as crops face increasing threats from climate change.

Latest research to conduct communicating with plants-

- In 2016, a Massachusetts Institute of Technology team turned spinach leaves into sensors that can send an email alert to scientists when they detect explosive materials in groundwater.
- The team embedded carbon nanotubes that emit a signal when plant roots detect nitro aromatics compounds often found in explosives. The signal is then read by an infrared camera that sends out a message to the scientists.

16. Large Area Certification Scheme

In news- The Ministry of Agriculture and Farmer Welfare recently announced that around **14,491 hectares of land in Andaman and Nicobar Islands** have been certified as organic. This is the **first large contiguous territory to be certified** under the government scheme.

About Large Area Certification Scheme-

- The Department of Agriculture and Farmers Welfare has launched a unique fast certification programme called "Large Area Certification" (LAC) under its flagship scheme, Paramparagat Krishi Vikas Yojna (PKVY).
- Farmers do not have to wait 2-3 years for organic certified products because LAC is a fast and cost-effective certification process.
- Each village in the region is considered a cluster/group under LAC.
- The documentation is straightforward and is updated on a village-by-village basis.
- All farmers with farmland and livestock must conform to the standard specifications and are licenced en masse after being tested, eliminating the need for a conversion time.
- To qualify as organic, areas with a history of using chemical inputs must go through a transition phase of at least 2-3 years, according to organic production standards.
- The certification process also necessitates extensive documentation and periodic certification authority verification.
- In contrast, the criteria for LAC are straightforward, and the **region can be certified almost immediately.**

17. MACS 1407

In news- Indian scientists have developed a high-yielding and pest-resistant soybean variety called MACS 1407.

About MACS 1407-

- Scientists from MACS- Agharkar Research Institute, Pune, in collaboration with Indian Council of Agricultural Research (ICAR), New Delhi have developed this higher yielding varieties and improved practices for the cultivation of soybean.

- New seeds will be made available to farmers for sowing during the 2022 Kharif season.
- The new variety gives 39 quintals per hectare and it is also resistant to major insects - pests like girdle beetle, leaf miner, white fly and defoliators.
- A MAC 1407 requires an average of 43 days for 50 per cent flowering and takes 104 days to mature from the date of sowing.
- It has white coloured flowers, yellow seeds and black hilum.
- Its seeds have 19.81 percent oil content, 41 percent protein content and show good germinability.
- The variety is suitable for mechanical harvesting.
- It is suitable for rain-fed conditions of North-east India and West Bengal, Jharkhand, Chhattisgarh states.

18. Broadbalk experiment

In news: It is the **world's longest running farm study.**

About the experiment-

- The field in Hertfordshire County of southern England has been under continuous scientific experiments for the past 178 years.
- Scientists have been sowing wheat on the field, named Broad balk, every year since 1843 to understand how to use fertilisers to improve crop yield.
- The research was started by agricultural scientist John Bennet Lawes and chemist Joseph Henry Gilbert under the Rothamsted Research institution.
- The aim of the experiment is to test the effects of different organic and inorganic fertilisers on soil fertility and study the optimum nutrition requirements to improve crop yield.
- The land was divided into 19 strips of wheat field, each 300 metres long and 6 m wide.
- To test the benefits of different combinations, some strips received inorganic fertilisers, some organic and some others a combination of both.
- One strip was left received neither of these.
- After 175 years of study, the scientists have found that yields from the section where wheat was grown with a two-year break, were higher than from sections where wheat was grown continuously.
- The use of organic manure had increased the soil organic matter content on some plots.
- The highest average yield was in wheat treated with N6 fertiliser, grown in both continuous and rotational manner.
- There is little benefit for farmers using fertilizers with such high levels of nitrogen.

Indian scenario-

- Long-term fertiliser experiments have been carried out at 17 Indian Council of Agricultural Research (ICAR) centres since 1970 to study changes in soil quality, crop productivity and sustainability.
- These experiments have shown that it is not possible to sustain productivity without external supply of nutrients.
- The research has led to the development of integrated plant nutrient supply and management strategies.
- These lead to improving soil fertility, enhancing and sustaining productivity of intensive cropping systems.

19. World food prize, 2021

In news: Dr Shakuntala Haraksingh Thilsted, a global nutrition expert of Indian descent has won the prestigious 2021 World Food Prize.

More information-

- Her research on small native fish species in Bangladesh led to the development of nutrition-sensitive approaches to aquatic food systems at all levels, from the farm to food processing to final consumers.
- This resulted in improved diets for millions of the most vulnerable people in Asia and Africa.

About World food prize-

- The World Food Prize is an international award recognizing the achievements of individuals who have advanced human development by improving the quality, quantity, or availability of food in the world.
- The prize has been awarded annually since 1987 to recognize contributions in any field involved in the world food supply: Animal Science/AquaCulture, Soil Science/Water/Conservation, Nutrition/Health, Plant Science/Seed Science, Plant Pathology/Crop Protection, Food Technology/Food Safety, and Poverty Alleviation/Hunger.
- The World Food Prize Foundation was conceived by Nobel Peace Prize Laureate Norman Borlaug in 1986.
- It is located in Des Moines, Iowa, United States.
- It is currently run by Barbara Stinson, who previously served as a co-founder and Senior Partner of the Meridian Institute, a renowned non-profit organization.
- The prize was first funded by General Foods and since 1990; the World Food Prize has been sponsored by businessman and philanthropist, John Ruan.

20. Gholvad Sapota

In news- A consignment of Dahanu Gholvad Sapota from Palghar district of Maharashtra was recently shipped to the United Kingdom.

About the fruit-

- Geographical Indication (GI) certification of Gholvad Sapota is held by Maharashtra Rajya Chikoo Utpadak Sangh.
- The fruit is known for its sweet and unique taste which is believed to be derived from calcium rich soil of Gholvad village.
- The Dahanu Gholvad Sapota were sorted and graded from the APEDA assisted and registered packhouse facility at Tapi (Gujarat) and was exported by M/s Kay Bee exports.
- Currently, demand in the importing countries is mainly from the ethnic population.
- Sapota is grown in states of Karnataka, Gujarat, Maharashtra, Tamil Nadu, West Bengal and Andhra Pradesh.
- Karnataka is known to be the highest grower of the fruit, followed by Maharashtra.

21. Di-ammonium phosphate

In news- Due to a hike in fertiliser prices by the companies, the government announced an increase in subsidy for di-ammonium phosphate (DAP) fertilisers from Rs 500 per bag (50-kg) to Rs 1,200 per bag.

About DAP-

- Diammonium phosphate is one of a series of water-soluble ammonium phosphate salts that can be produced when ammonia reacts with phosphoric acid.
- When applied as fertilizer, it temporarily increases the soil pH, but over a long term the treated ground becomes more acidic than before upon nitrification of the ammonium.

- It is incompatible with alkaline chemicals because its ammonium ion is more likely to convert to ammonia in a high-pH environment.
- The average pH in solution is 7.5–8.
- DAP can be used as a fire retardant as it lowers the combustion temperature of the material, thus has important effects in fighting wildfires.
- It is also used as a yeast nutrient in winemaking and bread-making.
- It is an additive in some brands of cigarettes purportedly as a nicotine enhancer.
- It is used in purifying sugar, as a flux for soldering tin, copper, zinc and brass.
- The compound occurs in nature as the exceedingly **rare mineral phosphamite**, related to **guano deposits**.

22. Shahi litchi

In news-The first consignment of Shahi Litchi from Bihar was exported to the United Kingdom by Cira Enterprises and sourced from farmers in **Muzaffarpur, Bihar**.

About the fruit-

- GI registration for Shahi Litchi is held with the Muzaffarpur-based Litchi Growers Association of Bihar.
- It is the fourth agricultural product to get GI certification from Bihar in 2018, after Jardalu mango, Katarni rice and Magahi paan.
- It has a short-shelf life which necessitates exploring export opportunities for the processed and value-added products.
- India is the second largest producer of litchi (Litchi chin) in the world, after China.
- Bihar tops in terms of production of litchi in India.
- Other major litchi-producing countries are Thailand, Australia, South Africa, Madagascar and the United States.
- The translucent, flavoured aril or edible flesh of the litchi is popular as a table fruit in India, while in China and Japan it is preferred in dried or canned form.

23. Natural indigo dye

In news- Scientists have found that the natural indigo dye extracted from leaves of a plant of the bean family is capable of protecting human eyes from harmful laser radiation.

About the dye-

- The blue dye is extracted from Indigofera Tinctoria or the famed Indigo plants that has been used over the years to colour clothes and clothing materials.
- Researchers from the Raman Research Institute (RRI), Bengaluru, and Kensri School and College, Bengaluru, studied the optical properties of the natural Indigo dye and found that it can act as a device to protect human eyes from harmful laser radiation.
- The study is funded by the Department of Science and Technology, Government of India and was published in the journal 'Optical Materials'.
- The researchers extracted the dye and stored it in a refrigerator below 4° Celsius to preserve its natural properties.
- Their study on how much it absorbed light at different wavelengths of the electromagnetic spectrum showed that the absorption is maximum in the ultraviolet region of the spectrum.
- The absorption is comparatively **high for the green light** as well.

- The absorption's variation with wavelength indicated that chlorophyll, an organic compound that takes part in photosynthesis, is present in the dye.
- The team found that when the intensity of the laser pulse is increased, the dye absorbs more light.
- Thus it is more opaque to higher intensity light and is referred to as an 'optical limiter'.
- Optical limiters are useful in weakening the potentially harmful radiation emitted by powerful lasers and protecting both eyes and sensitive optical instruments.

Indigofera tinctoria-

- It is also called **true indigo**, is a species of plant from the **bean family** that was one of the original sources of indigo dye.
- It is a **shrub** one to two meters high and may be an annual, biennial, or perennial, depending on the climate in which it is grown.
- It has been **naturalized to tropical and temperate Asia, as well as parts of Africa**, but its native habitat is unknown.
- The natural **dye** from *I. tinctoria* is **known as tarum in Indonesia and nila in Malaysia**.
- In Iran and areas of the former Soviet Union it is known as **basma**.
- It has light green pinnate leaves and sheafs of pink or violet flowers.
- The **plant is a legume**, so it is rotated into fields to improve the soil.
- The plant's leaves are soaked in water and fermented in order to **convert the glycoside indican naturally present in the plant to the blue dye indigotin**.
- The precipitate from the fermented leaf solution is mixed with a strong base such as lye.
- **Marco Polo (13th century)** was the first European to report on the preparation of indigo in India.
- Indigo was quite often used in European easel painting, beginning in the Middle Ages

24. Natural indigo dye

In news- Scientists have found that the natural indigo dye extracted from leaves of a plant of the bean family is capable of protecting human eyes from harmful laser radiation.

About the dye-

- The blue dye is extracted from *Indigofera Tinctoria* or the famed Indigo plants that has been used over the years to colour clothes and clothing materials.
- Researchers from the Raman Research Institute (RRI), Bengaluru, and Kensri School and College, Bengaluru, studied the optical properties of the natural Indigo dye and found that it can act as a device to protect human eyes from harmful laser radiation.
- The study is funded by the Department of Science and Technology, Government of India and was published in the journal 'Optical Materials'.
- The researchers extracted the dye and stored it in a refrigerator below 4° Celsius to preserve its natural properties.
- Their study on how much it absorbed light at different wavelengths of the electromagnetic spectrum showed that the absorption is maximum in the ultraviolet region of the spectrum.
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25. HRMN 99 apple variety

In news - A farmer from Himachal Pradesh has developed an innovative apple variety called HRMN 99.

About HRMN 99 apple-

- It is an innovative self-pollinating apple variety that does not require long chilling hours for flowering and fruit setting.
- It is bigger in size as compared to other varieties, with very soft, sweet, and juicy pulp and striped red over yellow skin colour during maturity.
- It grows at low altitude at 1800 feet above the sea level.
- Average yield is 1 quintal /plant from a 7 year old plant.
- It is tolerant to scab disease.
- This has spread to plain, tropical, and subtropical areas in various parts of India, where the temperature is as high as 40 - 45 °C during summer.
- Commercial cultivation of this apple variety has been initiated in Manipur, Jammu, low lying areas of Himachal Pradesh, Karnataka Chhattisgarh, and Telangana, and fruit setting has been expanded to 23 states & UTs so far.
- National Innovation Foundation (NIF), an autonomous body of the Department of Science and Technology (DST) verified the claims of the innovator and evaluated the distinctiveness and potentiality of the variety.

26. Horticulture Cluster Development Programme

In news- The Union Minister of Agriculture and Farmers' Welfare virtually launched the Horticulture Cluster Development Programme (CDP) recently.

A brief note on the programme-

- In a pilot phase, the programme will be implemented in 12 horticulture clusters out of the total 53 clusters selected for the programme.

- These 12 clusters will be implemented through Cluster Development Agencies (CDAs) which are appointed on the recommendations of the respective State/UT Government.
- A central sector programme implemented by the National Horticulture Board (NHB) of the Ministry of Agriculture and Farmers' Welfare, CDP aims at growing and developing identified horticulture clusters to make them globally competitive.
- The programme will address all major issues related to the Indian horticulture sector including pre-production, production, post-harvest management, logistics, marketing and branding.
- The programme is designed to leverage geographical specialisation and promote integrated and market-led development of horticulture clusters.
- CDP will benefit about 10 lakh farmers and related stakeholders of the value chain.
- The programme is expected to converge with other initiatives of the Government such as the Agriculture Infrastructure Fund(AIF).
- AIF is a medium - long term financing facility for investment in projects for post-harvest management infrastructure and community farming assets.
- It will leverage the central sector scheme of the Ministry for Formation and Promotion of 10,000 Farmers Producer Organisations (FPOs).

27. Nano Liquid Urea

In news- Recently, the Indian Farmers Fertiliser Cooperative Limited (IFFCO) launched the Nano Urea Liquid, a nutrient to provide nitrogen to plants as an alternative to the conventional urea.

About IFFCO Nano Urea-

- According to IFFCO it is the World's 1st Nano Urea Liquid.
- IFFCO will start the production of Nano Urea Liquid by June 2021 and commercial rollout will start sooner.
- It has been developed to replace conventional urea and it can curtail the requirement of the same by at least 50%.
- Nano Urea contains 40,000 ppm of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- IFFCO has priced Nano Urea at Rs 240 per 500 ml bottle for the farmers, which is 10% cheaper than the cost of a bag of conventional Urea.
- Conventional urea is effective 30-40 per cent in delivering nitrogen to plants, while the effectiveness of the Nano Urea Liquid is over 80 per cent.
- It will be primarily available to farmers through its cooperative sales and marketing channel apart from its sale on IFFCO's e-commerce platform.
- It increases the production with improved nutritional quality and also gives a huge positive impact on the quality of underground water.

About IFFCO:

- It is a **multi-state cooperative society** engaged in the business of manufacturing and marketing of fertilisers.
- It is headquartered in **New Delhi, India**.
- It was **started in 1967** with 57 member cooperatives.
- Today it is the **biggest cooperative in the world** with around 35,000 member cooperatives reaching over 50 million Indian farmers.
- With around 19% market share in the Urea and around 29% market share in complex fertilisers, IFFCO is **India's largest fertiliser manufacturer**.

28. National Agriculture Geo Hub

In news- Ministry of Agriculture signed the MoU with four institutions to promote digital services related to agriculture.

Key updates-

- The Ministry of Agriculture and Farmers Welfare had constituted a Task Force and a Working Group of Experts under the Chairmanship of Sanjay Agarwal, and Co-Chairmanship of J. Satyanarayana.
- It has prepared a Consultation Paper on India Ecosystem Architecture (IndEA) Digital Ecosystem of Agriculture (IDEA) with a view to keep farmers at the centre of agro-ecology by promoting free digital technologies.
- In this backdrop, Ministry of Agriculture has signed the MoU with following institutions:
 1. Patanjali Organic Research Institute
 2. Amazon Web Services (AWS)
 3. ESRI India Pvt. Ltd.
 4. Agribazaar India Pvt. Ltd
- The MoUs have been signed for pilot project using Kisan Database as adhaar within a period of one year:
- With ESRI MoU is for setting up and launching of "National Agriculture Geo Hub".
- With Amazon Web Services for creation of digital services and innovation ecosystem linked with digital agriculture in the agricultural value chain.
- Agribazaar to collaborate with the Department of Agriculture for a pilot project in 3 States (Uttar Pradesh, Madhya Pradesh, Rajasthan) to promote digital agriculture.
- An MoU has been signed with Patanjali for agricultural management and farmer service in 3 districts (Haridwar- Uttarakhand, Hamirpur- Uttar Pradesh and Morena- Madhya Pradesh).

29. Green gold collection for bamboo products

In news- The Green Gold Collection, a dedicated window for bamboo products was launched by the Union Minister of State for Agriculture.

About Green Gold Collection window-

- This window is the result of collaborative work between the National Bamboo Mission and the Government e-Marketplace (GeM).
- The dedicated window will provide an electronic platform for the small manufacturers and niche sellers thereby vastly increasing their reach to attract buyers and at the same time will provide niche products from trusted sources to the buyers.
- It showcases a range of exquisitely handcrafted bamboo and bamboo products, handicrafts, disposals and office utility products on the GeM portal.
- It aims to provide bamboo artisans, weavers and entrepreneurs in rural areas with market access to Government buyers.
- This initiative seeks to promote the adoption and use of bamboo products among Government buyers and usher a sustainable rural economy for an Atmanirbhar Bharat.

Bamboo-Green Gold-

- Green Gold, as bamboo is often known, is found everywhere in India.
- It is one of those rare, naturally-occurring resources agnostic to climatic conditions, soil conditions and precipitation levels available in 136 species.

- **India is the second-largest bamboo growing country** in the world.
- The Indian Forest (Amendment) Ordinance of 2017 that re-classified bamboo as a grass, has opened doors to its widespread cultivation and encouraged many bamboo manufacturing organisations to mainstream their products.
- **Bamboo is highly malleable and can be used to make products that, at present, are made of plastic.**

30. Fortified Rice Bran Oil

In news- Recently, Government of India's NAFED launched Fortified Rice Bran Oil to boost healthy living.

Key updates-

- This Rice bran oil will be marketed by NAFED (National Agricultural Cooperative Marketing Federation of India Ltd).
- A MoU has been signed between NAFED and FCI for the production and marketing of fortified rice kernels.
- The oil will be fortified and will be ensured that it will contain additional nutrients and vitamins.

What is an ideal cooking oil?

An ideal cooking oil is one which has a high smoke point which means that it starts giving out volatile and toxic compounds and smoke or fumes only at a higher temperature. **Cooking oil should also be rich in unsaturated fatty acids like mono-and polyunsaturated fatty acids** and low on saturated fatty acids. Oil which contains unsaturated fatty acids are liquid at room temperature and turn solid when chilled.

Rice bran oil-

- Rice bran oil is made from the hard outer covering of rice called rice husk or chaff and is darker in colour.
- It is rich in unsaturated fatty acids.
- It has lipid lowering properties and reduces cholesterol absorption.
- It is also known to be rich in oryzanol which lowers the plasma non-HDL level and increases plasma HDL levels.
- High smoking quality makes this oil ideal for all types of cooking from stir-frying and deep-frying.
- It is also used in cosmetics because of its moisturising properties.
- It also acts as a booster and reduces the risk of cancer due to the high amount of Vitamin E it contains.
- According to the FSSAI, fortified oil can help a person fulfil 25-30% of the recommended dietary intake for vitamins A and D.

31. Jalgaon banana

In news- Recently a consignment of GI certified 'Jalgaon banana' was exported to Dubai.

About Jalgaon banana-

- Jalgaon district of Maharashtra is a banana cluster identified under Agri Export Policy.
- The banana is fibre and mineral rich.
- In 2016, it got GI certification which was registered with Nisargraja Krishi Vigyan Kendra (KVK) Jalgaon.
- Jalgaon is known as the 'banana hub' of Maharashtra and accounts for about 50 per cent of the State's 90,000 hectares of banana plantation.
- India is the world's leading producer of bananas with a share of around 25% in total output.

- Andhra Pradesh, Gujarat, Tamil Nadu, Maharashtra, Kerala, Uttar Pradesh, Bihar and Madhya Pradesh contribute more than 70% of the country's banana production.
- According to the Ministry of Commerce, India's banana export has been rising sharply because of the adoption of farm practices in line with global standards.

32. Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) scheme

In news- Union Minister for Agriculture & Farmers Welfare, Narendra Singh Tomar addressed the 3rd edition of the **Northern Zone Food Processing Summit** organized by the Confederation of Indian Industry (CII) through video conference.

About Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME)-

- The Ministry of Food Processing Industry (MoFPI) launched the PMFME scheme under the Atma Nirbhar Bharat Abhiyan.
- The aim is to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector.
- The scheme to be implemented over a period of five years from 2020-21 to 2024-25 with a total outlay of Rs.10,000 crore.
- The scheme has a special focus on supporting Groups engaged in Agri-food processing such as Farmer Producer Organizations (FPOs), Self Help Groups (SHGs) and Producers Cooperatives along their entire value chain.
- The PMFME scheme **support in terms of:**
 1. Food processing entrepreneurs through credit-linked capital subsidy @35% of the eligible project cost with a maximum ceiling of Rs.10 lakh per unit.
 2. Seed capital @ Rs. 40,000/- per SHG member for working capital and purchase of small tools.
 3. Credit linked grant of 35% for capital investment to FPOs/ SHGs/ producer cooperatives.
 4. Support for marketing & branding to micro-units.
 5. Support for common infrastructure and handholding support to SHGs, FPOs and Producer Cooperatives.
 6. Providing Capacity building and training support to increase the capabilities of the enterprises and upgradation of skills of workers.

33. Miyazaki mangoes

In news- A couple in Madhya Pradesh has grown the world's costliest mango in their orchard in Jabalpur.

About Miyazaki Mango-

- The Miyazaki mango is a type of "Irwin" mangoes known for their unique ruby red colour.
- It is different from the yellow "pelican mango" that is widely grown in Southeast Asia.
- The Miyazaki mangoes have the second largest production in Japan after Okinawa.
- Christened Taiyo no Tamago (Egg of the Sun), the ruby-hued fruit originally was grown in southern Japan's Miyazaki Prefecture in 1984.
- The saplings require warm weather and long hours of sunshine before they grow into a full-sized tree that is also known as Taiyo-no-Tamago in Miyazaki, Japan.
- The mango is over 350 grams in weight and has a 15% or higher sugar content.

- It is rich in antioxidants and contains beta-carotene and folic acid, which is great for people that need help with tired eyes.
- They are grown during the peak harvest between April and August.
- Miyazaki mangoes are said to be one of the most expensive breeds of mangoes in the world.
- They were sold at Rs. 2.70 lakh per kilogram in the international market last year.

Varieties of Mangoes in India-

Alphonso(Hapus) – Ratnagiri, Badami – Karnataka (Known as Alphonso of Karnataka), Chaunsa – Bihar and Uttar Pradesh, Langra – Bihar and Uttar Pradesh, Dasherri – Malihabad, Uttar Pradesh, Kesar – Saurashtra, Gujarat, Mulgoba – Tamil Nadu, Himsagar – West Bengal, Benishan Mango – Banganapalli, Andhra Pradesh, Imam Pasand – South India

Mango & its significance-

- Mangifera indica is the National Fruit of India
- Its juicy fruit is a rich source of Vitamins A, C and D.
- The poet Kalidasa sang in its praises.
- Alexander savoured its taste, as did the Chinese pilgrim Hieun Tsang.
- Mughal emperor Akbar planted 100,000 mango trees in Darbhanga, Bihar at a place now known as Lakhi Bagh.

34. Matera declaration

In news- It was adopted at the '**G-20 Foreign and Development Ministers' Meeting** in Matera, Italy.

About the declaration-

- The G20 ministers recognised that poverty alleviation, food security and sustainable food systems, are key to ending hunger, encouraging social cohesion and community development and promoting overall inclusive economic growth and sustainable development.
- They also called for implementing effective actions for the empowerment of women and youth in the rural-urban continuum.
- The declaration underlined the need for increasing catalytic investments for food security, nutrition, and sustainable food systems and territorial development, as part of the substantial COVID-19 emergency funding.
- It stressed on accelerating the adaptation of agriculture and food systems to climate change.
- The declaration emphasised on keeping international food trade open and strengthening global, regional and local diversified value chains for safe, fresh and nutritious food, as well as promoting a science-based holistic One Health approach.
- It has called upon the international community to step up efforts to build inclusive and resilient food chains and ensure adequate nutrition for all, in line with the "Zero Hunger" goal set for 2030.
- The Declaration reflects the Indian concern on issues like the welfare of small and medium farmers.
- It helps in promoting local food cultures and recognising agri-diversity.

35. Harit Dhara

In news- An Indian Council of Agricultural Research (ICAR) institute has developed an **anti-methanogenic feed supplement** 'Harit Dhara'.

Key updates-

- Methane's global warming potential is 25 times that of carbon dioxide (CO₂) over 100 years, making it a more potent greenhouse gas.
- Methane is produced by animals having rumen, where the plant material they eat like cellulose, fibre, starch and sugars gets fermented or broken down by microorganisms prior to further digestion and nutrient absorption.
- Carbohydrate fermentation leads to production of CO₂ and hydrogen that are used as substrates by archaea, the microbes in the rumen which produce methane.
- This gas is then released through these animals' flatulence, when they belch, or through their manure.
- Tropical plants containing tannins – bitter and astringent chemical compounds are known to suppress or remove protozoa from the rumen.
- Harit Dhara has been prepared using condensed and hydrolysable tannin-rich plant-based sources which acts by decreasing the population of protozoa microbes in the rumen.
- It also changes the composition of the volatile fatty acids that are the end-products of rumen fermentation (along with hydrogen and CO₂).
- An average lactating cow or buffalo in India emits around 200 litres of methane per day.
- Feeding Harit Dhara not only **cuts down their methane emissions by 17-20%**, but also results in **higher milk production and body weight gain**.

36. Bhalia wheat

In news- The first shipment of Geographical Indication (GI) certified Bhalia variety of wheat was exported today to Kenya and Sri Lanka from Gujarat.

About Bhalia wheat-

- Bhalia Wheat, also known as Daudkhani Wheat, is a type of long grain Wheat cultivated in the Bhal region of Gujarat.
- The Bhal region of Gujarat includes Ahmedabad, Anand, Kheda, Bhavanagar, Surendranagar, Bharuch districts.
- The GI certified wheat has high protein content and is sweet in taste.
- Bhalia Wheat is rich in Gluten, a type of amino acid.
- It has a high amount of carotene and has low absorption of water.
- The unique characteristic of the wheat variety is that it is grown only in the rainfed condition without irrigation and cultivated in around two lakh hectares of agricultural land in Gujarat.
- They are widely used for preparing semolina which is used for making pasta, macaroni, pizza, spaghetti, vermicelli, noodles etc.
- Gujarat Wheat-1, a variety of Bhalia Wheat, is popular in Gujarat
- It received GI certification in July, 2011.
- The registered proprietor of GI certification is Anand Agricultural University, Gujarat

37. India's first 'Monk fruit' cultivation

In news- The 'monk fruit' from China was introduced for field trials in Himachal Pradesh by the Palampur-based CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT) in Kullu.

Key updates-

- This crop at present is cultivated only in China.

- CSIR-IHBT imported the seeds from China and did in-house cultivation.
- Fifty seedlings were planted in the fields of progressive farmer Manav Khullar from Raison village for field trials and CSIR-IHBT signed a 'Material Transfer Agreement' with him.
- The economic benefits of the new crop are estimated to be between Rs 3 lakh to Rs 3.5 lakh per hectare.
- It is a perennial crop having a life span ranging between four to five years and its fruiting starts eight to nine months after germination.
- The plant grows in mountainous areas with an annual mean temperature of about 16–20 °C and humid conditions.
- It gets its name from the Buddhist monks who first used it.
- As Seed germination rate of monk fruit is slow and low, the seed germination technique has been developed to increase the germination rate and reduce the germination time.
- It is known now throughout the world for its intensely sweet taste, and it has been used as a non-caloric natural sweetener.
- The sweet taste results primarily from the content of a group of glycosides known as mogrosides, and the extracted mixture of mogrosides is about 300 times sweeter than sucrose or cane sugar.
- The purified mogroside, has been approved as a high-intensity sweetening agent in Japan and is generally recognized as safe (GRAS) non-nutritive sweetener, flavour enhancer, and food ingredient in the USA.

38. Pandit Deen Dayal Upadhyay Unnat Krishi Shiksha Yojana (PDDUUKSY)

In news- So far, 108 training programmes have been organized for the awareness of the farmers regarding the operation under this scheme.

About PDDUUKSY scheme-

- It was launched in 2016 to develop human resources in organic farming, natural farming and cow based economy for environmental sustenance and soil health.
- The scheme was launched under the Ministry of Agriculture and Farmers Welfare and implemented by the Education Division of ICAR.
- It was started with the establishment of 100 centres.
- The initiative is envisioned to transform rural development processes by partnering with knowledge institutions.

Its objectives are-

- To build skilled Human Resource at village level relevant to national needs towards organic farming and sustainable agriculture.
- Provide rural India with professional support in the field of Organic Farming/Natural Farming/Rural Economy/Sustainable Agriculture.
- To extend other activities of Pandit Deen Dayal Upadhyay Unnat Krishi Shiksha Yojana at village level through these established centres.

The designated Centers may select the farmers for this initiative, subject to the conditions that:

- The farmers must be assessed in terms of their interest in organic farming, natural farming and cow-based economy prior to their selection.
- Priority must be attached to the farmers who are currently practising organic farming, natural farming or cow-based economy.
- Farmers of all communities must be given fair representation.
- The selection shouldn't involve any gender discrimination.

39. Mahila Kisan Sashaktikaran Pariyojana (MKSP)

In news- Recently, the Union Minister of Agriculture and Farmers Welfare mentioned about the assistance given to women farmers under Mahila Kisan Sashaktikaran Pariyojana (MKSP).

About Mahila Kisan Sashaktikaran Pariyojana (MKSP)

- The Ministry of Rural Development started this scheme to provide facilities to women farmers.
- It is a sub-component of Deendayal Antyodaya Yojana- National Rural Livelihood Mission (DAY –NRLM), which is under implementation since 2011.
- The primary objective of MKSP is to empower women by making systematic investments to enhance their participation and create sustainable livelihood for rural women.
- The focus of MKSP is on capacitating smallholders to adopt sustainable climate resilient agro-ecology and eventually create a pool of skilled community professionals.
- It aims to strengthen smallholder agriculture through promotion of Community Managed Sustainable Agriculture (CMSA), Non Pesticide Management (NPM), Zero Budget Natural Farming (ZBNF), Pashu-Sakhi model for doorstep animal care services, Sustainable regeneration and harvesting of Non-Timber Forest Produce.
- The Ministry of Rural Development (MoRD) provides 75% (90% for North East and hill states) to the project and the balance is to be contributed by the respective state governments or any other donor agencies, national and international.
- The program is being implemented by NRLM in partnership with State Departments/CSO as implementing partners.

Strategy of MKSP's Project Implementing Agency (PIA)	Use of locally adopted, farmer led technologies & practices
	Enlist support of Self Help Groups, NGOs, Farmers groups, Farmer Schools etc.
	Using Community Mobilization among women to spread information of sustainable agricultural methods.
	Capacity building through hand holding, formal vocational courses etc
	Focus on poorest of poor & Vulnerable women belonging to SC/ST, minority, landless and primitive tribal groups
	Priority to Women-headed households, women group engaged in agricultural and allied activities,
	Have a participatory approach and Bottom up planning

Themes under MKSP are:

- Sustainable Agriculture
- Non-Timber Forest Produce
- Livestock
- Fisheries