

06-05-2024

Maximum Residue Limits (MRL)

Why in News?

- The Centre has clarified that India has one of the most stringent standards of Maximum Residue Limits (MRLs) in the world and MRLs of pesticides are fixed differently for different food commodities based on their risk assessments.

Pesticide	Chemical group	Use	MRL in Tomato ^a	MRL in Cucumber ^a
Acephate	Acephate	Insecticide	1.0	1.0
Biphenyl	Aromatic hydrocarbon	Fungicide	NS	NS
Carbendazim	Benzimidazole	Fungicide	0.5	0.05
Chlorothalonil	Chloronitrile	Fungicide	5.0	3.0
Cypermethrins	Pyrethroid	Insecticide	0.2	0.07
Diazinon	Organophosphorus	Insecticide	0.5	0.1
Difenoconazole	Azole	Fungicide	0.6	0.2
Dimetomorph	Morpholine	Fungicide	1.0	1.0
Endosulfan	Organochlorine	Insecticide	0.5	1.0
Imidacloprid	Neonicotinoid	Insecticide	0.5	1.0
Indoxacarb	Oxadiazine	Insecticide	0.5	0.5
Malathion	Organophosphate	Insecticide	0.5	0.2
Methoxyfenozide	Diacylhydrazine	Insecticide	2.0	0.3
Metaxyl	Phenylamideacylalanine	Fungicide	0.5	0.5
Paraquat	Bipyridylum	Herbicide	0.05	0.05
Pyrethrin	Natural pyrethrin	Insecticide	0.05	0.05
Spinosad	Spinosyn	Insecticide	0.3	0.2
Tebuconazole	Azole	Fungicide	0.7	0.15
Triadimefon	Azole	Fungicide	1.0	1.0
Warfarin	Coumarin anticoagulant	Rodenticide	NS ^b	NS

^a According to Codex Alimentarius Commission (FAO/WHO, 2013).

^b NS means MRL has not been established.

Scientific Panel on Pesticides Residues of FSSAI examines the data received through the Central Insecticide Board and Registration Committee. It recommends the MRLs after performing risk assessment considering the dietary consumption of the Indian population and health concerns with respect to all age groups.

- The total number of pesticides registered by the Central Insecticide Board and Registration Committee in India is more than 295 out of which 139 pesticides are registered for use in spices.
- The MRLs are dynamic in nature and regularly revised based on scientific data. This practice is aligned with global standards and ensures that MRL revisions are made on a scientifically valid basis, reflecting the latest findings and international norms.

More About the News

- The maximum residue limit (MRL) is the maximum allowed concentration of a residue in a food product obtained from an animal that has received a veterinary medicine or that has been exposed to a biocidal product for use in animal husbandry.
- The Agriculture Ministry said in a statement that media reports claiming that the Food Safety and Standards Authority of India (FSSAI) allows 10 times more pesticide residue in herbs and spices are false and malicious.
- Pesticides are regulated by the Ministry of Agriculture through the Central Insecticide Board and Registration Committee constituted under the Insecticide Act, 1968.
- The Agriculture Ministry said that the

Largest ever global delegation to witness India's General Election

Why in the News?

- In keeping with the tradition of the Election Commission of India (ECI) to foster a culture of transparency and reiterate its commitment to high standards of electoral practices amidst the democratic nations, 75 delegates representing 23 countries are in India to witness the Indian General Elections as part of the International Election Visitors' Programme (IEVP).

More About the News

- The Chief Election Commissioner Shri Rajiv Kumar while addressing the delegates, remarked that the contribution of the Indian electoral space and work done by the Election Commission of India, holds a



significant portion of the world democratic space.

- In terms of process and capacity it generates, what can be legitimately called, 'democratic surpluses' is of a huge significance in the otherwise growing concerns of shrinkage of or decline of democratic spaces worldwide.
- The Indian elections space is unique, as neither electoral registration is compulsory nor voting is mandatory.
- Therefore, the ECI is required to operate in an entirely persuasive space, inviting the citizens to volunteer to become part of electoral roll and, thereafter, through systematic voter awareness programme, to motivate them to exercise their franchise.
- Commenting on the scale of the electoral exercise in India, he said that a 970 million strong electorate will be welcomed by over 15 million polling personnel at over 1 million Polling Stations spread across the country.
- The diversity of the nation's electorate can be witnessed in its full expression by the visiting delegates at the Polling Stations.
- India is a country of festivals and invited the delegates to experience the festival of democracy first-hand.
- The credibility of the processes that Election Commission (EC) undertakes is validated through the sheer turnout at elections and

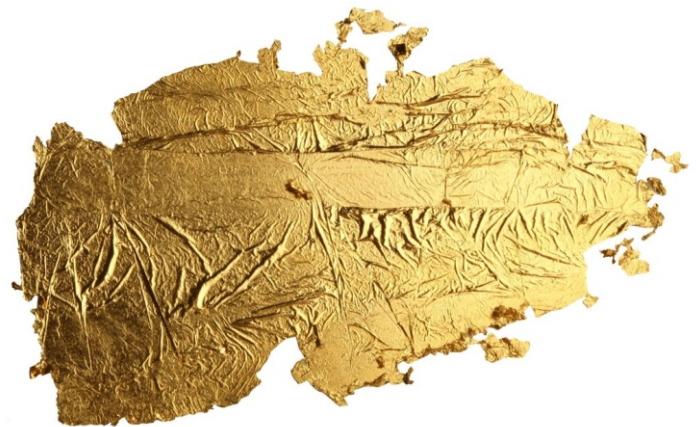
the near saturation of electoral rolls in terms of Elector-population ratio.

- The delegates will split into groups to visit six states-Maharashtra, Goa, Gujarat, Karnataka, Madhya Pradesh, and Uttar Pradesh to observe polls and related preparedness in various constituencies.

Goldene

Why in the News?

- For the first time, researchers have created a free-standing sheet of gold that is only one atom thick. This makes gold the first metal to be formulated into (freestanding) 2D sheets - opening up a host of exciting possibilities for the future.



More About the News

- Creating 'goldene', as the one-atom thick material has been named, was not easy for the scientists behind the development, from Sweden's Linköping University. It is

not that such 2D materials have not been created before.

- Since the 2004 development of graphene, the atom-thin material made of carbon, scientists have identified hundreds of 2D materials.
- However, coming up with atom-thin metallic sheets has been a challenge, due to metals' tendency to cluster together to make nanoparticles instead.
- To create goldene, researchers first sandwiched an atomic monolayer of silicon between layers of titanium carbide.
- When they deposited gold on top of this sandwich structure, the gold atoms diffused into the material and replaced the silicon atoms, forming a trapped monolayer of gold atoms.
- These sheets of goldene are roughly 100 nanometres thick (a nanometre is a billionth of a metre), approximately 400 times thinner than the thinnest commercially available gold leaf.
- Developing goldene is not for the purposes of scientific curiosity alone - far from it. Scientists believe that the super thin, super light material can potentially revolutionise the electronics industry.
- Goldene holds promise as a great catalyst because it's much more economically viable than thicker, three-dimensional gold.
- Moreover, the technique used by the scientists to create goldene can, in theory, also be applicable to other metallic objects.

Artificial General Intelligence (AGI)

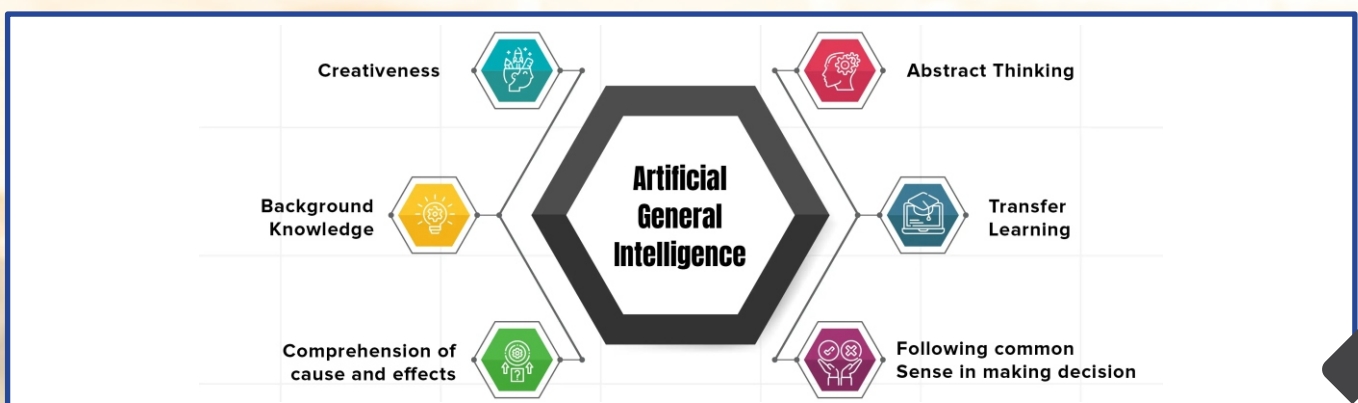
Why in the News?

- In a recent interview, Sam Altman, CEO of OpenAI, expressed his commitment to

invest billions of dollars towards the development of Artificial General Intelligence (AGI).

More About the News

- AGI refers to a machine or a software that can perform any intellectual task that a human can do. This includes reasoning, common sense, abstract thinking, background knowledge, transfer learning, ability to differentiate between cause and effect, etc.
- AGI aims to emulate human cognitive abilities such that it allows it to do unfamiliar tasks, learn from new experiences, and apply its knowledge in new ways.
- Narrow AI is designed to perform specific tasks such as image recognition, translation, or even playing games like chess-at which it can outdo humans, but it remains limited to its set parameters. On the other hand, AGI envisions a broader, more generalized form of intelligence, not confined to any particular task (like humans).
- The idea of AGI first emerged in the 20th century with a paper written by Alan Turing, widely considered to be the father of theoretical computer science and artificial intelligence.
- In theory, AGI has innumerable positive implications. For instance, in healthcare, it can redefine diagnostics, treatment planning, and personalized medicine by integrating and analyzing vast datasets, far beyond the capabilities of humans.
- Despite the promise AGI holds, it continues to fuel widespread apprehensions, due to a number of reasons. For instance, the



humongous amount of computational power required to develop AGI systems raises concerns about its impact on the environment, both due to the energy consumption and generation of e-waste.

- AGI could also lead to a significant loss of employment, and widespread socio-economic disparity, where power would be concentrated in the hands of those who control the AGI.
- It could introduce new security vulnerabilities, the kind we have not even thought about yet, and its development could outrun the ability of governments and international bodies to come up with suitable regulations.

- And if humans were to become dependent on AGI, it might even lead to the loss of basic human skills and capabilities.



प्रयास
IAS ACADEMY

EXCLUSIVE BATCH FOR
70th BPSC MAINS

COMMENCING FROM
15th MAY 2024

upto **50% OFF***



ADMISSION OPEN

हिंदी माध्यम | ENGLISH MEDIUM