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INDIA SCIENCE AND INNOVATION WEEKLY

Ask the right questions, and nature will open the door to her secrets.

- Dr. C.V. Raman, The Nobel Prize in Physics 1930

Scientists develop new drought tolerant chickpea variety

A group of Scientists from National Institute of Plant Genome Research, University of Hyderabad and Indian Institute of Pulses Research has raised a genetically modified chickpea variety with high drought tolerance and high iron and zinc content in seeds by reducing the level of a plant growth substance called cytokinin in the root. Through the use of an enzyme, called cytokinin oxidase 6 (CKX6), cytokinin levels were reduced, thus increasing the root length and enabling the plant to acquire more nutrients from the soil.

Ayurveda to help boost immunity against COVID-19

Herbal products-manufacturer AIMIL Pharma, is offering immunity enhancer ayurvedic herbal drug called Fifatrol, to help in the production of interferons (proteins) and antibodies to generate an immune response against viruses and increase the rate of phagocytosis to destroy microorganisms.

NIV Pune release India's first microscopy image of COVID-19

Scientist from National Institute of Virology (Pune) released the first images of the virus responsible for COVID-19 using a transmission electron microscope (TEM). The well-preserved virus, 75 nm in size, showed patchy stain pooling on the surface and a distinct envelope projection ending in round 'peplomeric' structures.

IIT Bombay app to track quarantined carriers

Indian Institute of Technology (IIT) Bombay has developed a mobile application, called Corontine, that can track suspected COVID-19 carriers who jump quarantine. An alert is sent to the user if he/she leaves a quarantined zone marked by a geo-fence.

IMTECH takes up sample testing for COVID

Council of Scientific and Industrial Research-Institute of Microbial Technology (CSIR-IMTECH) has stepped up to take up Covid-19 sample testing. This is in line with the directives issued by the Principal Scientific Adviser (PSA) to the Government of India and the advisory issued by the Indian Council of Medical Research (ICMR) to operationalise Covid-19 testing by laboratories under CSIR and other labs affiliated to Department of Science and Technology (DST), Department of Biotechnology (DBT) and Department of Atomic Energy (DAE). The lab has the requisite infrastructure including Biosafety Level (BSL)-3 facility as the labs are advised to take all appropriate biosafety and bio-security precautions before testing. A newly constructed BSL-2+ virology lab equipped with Reverse Transcription Polymerase Chain Reaction (RT-PCR) equipment has also been established.

Indigenous manufacturing of bulk drugs approved by Union Cabinet

As part of its multi-pronged response to the medical emergency situation prevailing in the country due to COVID-19 lockdown for an extended period, the Union Cabinet has approved a special package for Bulk Drugs Parks promotion schemes. This package will help to finance common infrastructural facilities and production-linked incentive schemes for the manufacture of Key Starting Materials (KSMs), drug intermediates and active pharmaceutical ingredients (APIs) in the country. In consultation with industry experts on essential APIs, the organic chemistry and chemical engineering scientists of the National Chemical Laboratory (NCL) analysed the structures of chemical intermediates and the state of readiness for employing synthetic routes, which are scalable and economical. Self-sufficiency in drug supply chain for India means indigenous processes and platform technology to produce these important KSMs.

DRDO develops bio-suits based on sealants used in submarine

The Defence Research and Development Organisation (DRDO) has manufactured a bio-suit for medical professionals to combat COVID-19 using a special sealant based on the sealant used in submarine applications. The sealant can be used as an alternative to seam sealing tape. The bio suits used presently are prepared using the special glue for seam sealing by an industry partner and has cleared the test at Southern India Textile Research Association (SITRA) Coimbatore. DRDO and its industry partner can produce up to 7,000 suits a day.

Special Update: CSIR-Institute of Microbial Technology (IMTech)

The Chandigarh-based CSIR-Institute of Microbial Technology (IMTech) was established in 1984. Its team of scientists have cutting edge R&D expertise in the areas of: Cloning & expression of recombinant/engineered proteins & their scale-up, Understanding/manipulating proteins and their engineering, Protein structure determination through X-ray crystallography, Molecular microbiology of pathogens especially with respect to drug resistance & vaccine development, Immunology of infectious diseases, Yeast Genetics, Screening of microorganisms for novel enzymatic activities and strain improvement, Bioinformatics & high end computational biology, Microbial taxonomy and metagenomics, and allied areas like technology and business management and intellectual property protection.

Further details can be found at: <https://www.imtech.res.in/about/about-imtech>