

BIOILLUMINATI

(OCTOBER 2020)

SPECIAL ISSUES ON COVID-19



DEPARTMENT OF LIFE SCIENCE

&

STUDENT UNIT OF MICROBIOLOGISTS SOCIETY

Sri Sathya Sai College For Women, Bhopal

"The secret of crisis management is not good vs. bad, it's preventing the bad from getting worse"

NEWS LETTER OF LIFE SCIENCE
(OCTOBER-2020)

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Sale of 'immunity-boosting' plants increases in Covid-19 time



With a lot of stress being given to raise immunity levels to fight COVID 19 infection, the sale of immunity boosting plants has upped manifold in the past few months. Some of the nurseries in the city are over selling these immunity boosting plants over ornamental ones which till now had formed the major chunk of the earnings of these nurseries.

Shyamji Patel, who runs a plant nursery in Manduadih area in Varanasi, says, “More than 50 percent of the customers who come to buy plants now want herbal ones. Among these, Giloy and Ashwagandha tops the list. In fact, we have run out of stock of Ashwagandha saplings as the demand is so high. Ever since concoction or kadha of these herbs is being promoted from various platforms to keep the virus at bay, people are planting them in their homes.



A senior staff at Chandra Shekhar Azad Park (Company Bagh), Prayagraj, “We sell at least 100 saplings of Ashwagandha plants everyday. Earlier our focus was mainly on ornamental and fruit plants but off late we have also started focusing on medicinal plants as well due to the increased demand. Other medicinal plants like giloy, neem, aloe vera, said to improve the general health conditions, also have a lot of buyers.”

Covid-19 RT-PCR Test

The Covid-19 RT-PCR test is a real time reverse transcription polymerase chain reaction for the qualitative detection of nucleic acid from SARS-CoV-2. Samples are collected from individual suspected of Covid-19 by the HCP. Testing is limited to the centre for Esoteric PCR is only for use under food and drug Administration Emergency use authority.

The Pixel by Lab Corp Covid-19 Test Home Collection Kit is composed of a shipping box, pre- returned envelope, directions, collection material and biohazard. The test can run in a single plex or multiplexed format into a single reaction and amplification set up.



Instruments used with test

The Covid-19 RT-PCR test is to be used with the Roche MagNA Pure-96 using MagNA pure 96DNA and viral NA Small Volume kit and Applied Biosystems Quant Studio 7 flex instrument in a single plex format. The Covid-19 RT-PCR test can also be used with the CERES nanosciences and nanotrap virus capture kit.

Pooling is conducted on the Tecan Evo 200 liquid handling instrument. All pooling of sample is performed before sample extraction.

Covid-19 RT-PCR test controls - Positive, Negative & Internal:

Negative [no templet control]-negative for all targets detected [Ct not detected].

Positive [COVID-19-N-P]-positive for all targets detected [Ct<38].

Internal extraction [Hs-RPP30]-negative for SARS-CoV-2 targets [Ct not detected], positive for RNase P target [Ct<40].

Negative extraction [NEC]-negative for SARS-CoV-2 targets [Ct not detected], positive for RNase P target [Ct<40].

Corona Virus, ICMR Bharat Biotech development for Indian Covid-19 Vaccine

The Indian Council for Medical Research (ICMR) on Saturday announced a research collaboration with Hyderabad-based Bharat Biotech International Ltd (BBIL) to develop a COVID-19 vaccine.

The ICMR said in a statement that it had transferred the virus strain isolated at the National Institute of Virology, Pune (an ICMR institute) to BBIL.



Fully indigenous“...Work on vaccine development has been initiated between the two partners. ICMR-NIV will provide continuous support to BBIL for vaccine development. ICMR and BBIL will seek fast-track approvals to expedite vaccine development, subsequent animal studies and clinical evaluation of the candidate vaccine, which will be fully indigenous to India,” the ICMR statement said.No further details were available on whether any pre-clinical studies were done or the basis for which this appeared to be a promising step forward for successfully developing a vaccine. Chairman and Managing Director of Bharat Biotech Dr. Krishna Ella said in a statement: “We are very proud to participate in this project of national importance with ICMR and NIV. We will do everything to make this program successful in our nation endeavour to combat COVID-19 pandemic.” Saturday’s announcement is BBIL’s third stated initiative in developing a COVID-19 vaccine. On April 20, the Department of Biotechnology had announced funding support to the company to develop a vaccine candidate utilising the inactivated rabies vector platform. On April 3, the company had said it was working on 'CoroFlu' a one-drop COVID-19 nasal vaccine built on a flu vaccine “backbone” that had proven to be safe in humans. For developing that vaccine, BBIL was part of an international collaboration of virologists at the University of Wisconsin, Madison, and vaccine companies FluGen. Head of Business Development at Bharat Biotech Raches Ella had then said: “Bharat Biotech will manufacture the vaccine, conduct clinical trials and prepare to produce almost 300 million doses of vaccine for global distribution. Under the collaboration agreement, FluGen will transfer its existing manufacturing processes to Bharat Biotech to enable the company to scale up production and produce the vaccine for clinical trials”.

Bats and Humans : Emerging Diseases

We keep hearing about bat-borne viruses, outstanding in their virulence and destructive powers. Bats are responsible for some of the most fear-inducing zoonotic viruses — those that spread from animals to humans — in recent memory, Ebola, SARS, Marburg, Nipah and more have been traced to mammal. Most recently, some scientists have laid the blame for the coronavirus epidemic on the furry, winged creatures. What makes them such hotbeds of deadly disease?

There high-functioning immune system response thwarts invading viruses, driving them to adapt more rapidly than they would in other hosts. This tends to produce viruses far deadlier than the pathogens found in other creatures. So when one of them does leap to humans, the consequences are often alarming.



Their robust defenses mean that bat cells have effectively walled themselves off from viruses. But that doesn't mean the viruses disappear. Instead, they linger, existing within the bat for perhaps its entire life and replicating at a speed not seen in other species. Thus were born some of the fiercest diseases of our time. When these bat-hardened strains spill over into human populations, they often wreak more harm on our bodies than those from other sources.

Even as researchers acknowledges bats' threat to public health, they are careful not to demonize the creatures. It is noted that outbreaks of diseases originating in bats seem to be growing more common as humans encroach upon their habitat, stressing the animals and causing them to shed more saliva, urine and feces, which contain viruses. It argued that conservation could benefit both our species and bats at one stroke.

Did You Know?

An artificial intelligence (AI) model may be able to rule out COVID-19 infection among people arriving at the hospital, before the results of virus swab tests are ready.

Drinking alcohol DOES NOT protect you against Covid-19 and can be dangerous.

People with type A blood may be more susceptible to infection.

COVID-19 is NOT transmitted through houseflies and mosquitoes.

Studies show that hydroxychloroquine does not have clinical benefits in treating COVID-19.

India's first COVID-19 vaccine Covaxin to launch in Q2 2021.

Adding Pepper and Ginger to meals DOES NOT prevent or cure COVID-19.

The prolonged use of medical masks when worn properly, DOES NOT cause CO₂ intoxication nor oxygen deficiency.



Posters prepared by students on “Wildlife Conservation”