## CSIR-NEERI develops multi-fuel stove to curb indoor pollution

#### **CSIR-NEERI**



To check indoor air pollution caused by the use of solid biomass fuels and conventional cook stoves in the rural areas, CSIR- National Environmental Engineering Research Institute (NEERI) has developed a multi-fuel improved cook stove — "NEERDHUR". It is known for high thermal efficiency, reduced fuel consumption, less emissions, reduced cooking time, safety and portability.

Dr Rakesh Kumar, Director, CSIR-NEERI, said the Institute has sought willingness from potential entrepreneurs and startups for obtaining licences for the transfer of knowhow related to NEERDHUR for its commercial exploitation.

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8th November, 2016 Page: 2

# IICT alternative to fight multi-drug resistant TB

### **CSIR-IICT**

For a majority of Indians, getting access to efficacious and effective medication for serious and severe ailments has always proved to be beyond their reach due to the high price tags attached to essential drugs.

Monetary inability of the patients to afford treatment has resulted in diseases persisting for prolonged periods and at times aggravating to chronic and lethal proportions.

In a breakthrough that could infuse hope and cure for those afflicted with tuberculosis, Hyderabad-based CSIR-Indian Institute of Chemical Technology (CSIR-IICT) has undertaken the process development of a new drug, that could be the answer not just in terms of affordability, but also in breaking the barriers of resistance in the bacteria that inflicts the disease.

This is a crucial effort in Indian context, considering the fact that till date this is the only drug which has the potency of decimating the multi-drug-resistant (MDR) tuberculosis bacilli.

The drug, Bedaquiline, which acts against drug resistant TB bacillus was developed by Jansen (J&J), USA. CSIR-IICT was funded under the CSIR initiative on the Fast Track Translational (FTT) Projects to develop affordable drugs.

The project led by Dr. S. Chandrasekhar, Director, CSIR-IICT and his team, have taken up the assignment with an objective of developing alternative routes for the production of the TB drug to make the medicine available at an affordable price.



This will not only benefit the Indian patients, but also help those in African and other countries afflicted with TB. In an exclusive interaction with The Hans India, Dr. G. V. M. Sharma, Chief Scientist, and his senior colleague Dr. Prathama Mainkar, Sr. Principal Scientist, explained that the treatment of Tuberculosis has become a challenge because of the disease causing pathogen assuming multi-drug-resistant (MDR) character in the patients, consequently resulting in most of the drugs used in its treatment becoming ineffective and redundant.

Dr. Sharma informed that the TB drug under development by the CSIR-IICT team has been approved by the United States Food and Drug Administration (USFDA) – one of the premier global drug certification organizations.

"Presently, after 60 years, there is only one drug approved by FDA for TB treatment, that has the capability or potency to break through these defenses, but it is too costly and unaffordable for a majority of those suffering from Tuberculosis the world over."

According to Dr.Sharma, CSIR-IICT will approach the identified Pharma industry for the demonstration and commercialization after completion of the lab scale process. Elucidating on how the Institute will be able to produce the drug at a cheaper price, Dr. Sharma informed that production costs could be decreased through cutting down on the number of operations, modifying the reagents and simplifying the protocols.

He also informed that in addition to the TB drug, CSIR-IICT is working on two more drugs under the FTT initiative, wherein, the processes have to be completed in 12-18 months time. According to the World Health Organisation (WHO) India has over 28 lakh TB patients, with around 64,000 of the cases suspected to be multi-drug-resistant (MDR).

## After Delhi, thick smog descends over Lucknow

### **CSIR-IITR**



The air quality in the Uttar Pradesh capital and nearby areas was said to be "alarmingly bad" and polluted for a second straight day on Monday, officials said.

According to a study by the Indian Institute of Toxicology Research (IITR), Central Pollution Control Board (CPCB) and UP Pollution Control Board, the air quality index of Lucknow was eight times poisonous than the permissible limit.

IITR Director Alok Dhawan said the city's air quality was in bad shape and the situation warranted immediate and urgent attention. People need to be careful of the bad air, he added.

The air quality index, if it crosses 50, becomes hazardous for human health. It stood at 440 in Lucknow on Monday. The visibility through the day was bad as a thick smog hung in the air.

The air quality index was particularly worse in areas like Nishatganj, Aliganj, Old High Court premises near Qaiserbagh and Lalbagh.



As the smog became thick in the evening, people preferred staying indoors.

Official sources say the Lucknow district administration was contemplating declaring closing schools, as in Delhi, if the situation did not improve in the next 24 hours.