

Efforts of DRDO in nation's fight against COVID-19

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Defence Research and Development Organisation (DRDO) has been tracking the spread of Coronavirus (COVID-19) since the world media started reporting its devastating impact in China's Wuhan Province. The DRDO took a call in first week of March 2020 to enhance efforts to create counter measures to stop the spread of the disease in India. By then, the number of affected people in India had already crossed 30. It also started focusing on creating mass supply solutions of critical medical requirements, if COVID-19 becomes a crisis. As a result of focused approach, at present DRDO is ready with four different items ready to be deployed in 'War against Corona'.

Hand sanitizer

Hand sanitizer being the basic instrument against spread of COVID-19 that has now been developed in-house at DRDO. By 3rd week of March, it was produced in sizable quantities and distributed to major offices and establishment within the capital. Approximately 4,000 litres of hand sanitizer has been provided to Indian Armed forces, Armed Forces Medical Corps, Defence Security Corps, 1,500 litres to Ministry of Defence, 300 litres to Parliament, and 500 litres to various security establishments and high offices to address sanitization issue at first to keep administration work without fear of contamination.

In the present scenario, Delhi Police (DP) is serving by managing law and order situation, hence to keep them safe at this point of time, DRDO has provided 20,000 three ply masks and 1,000 litres of hand sanitizers. In addition, DRDO has distributed hand sanitizers to DP at about 40 nakas all around Delhi.

The DRDO is ready to provide more hand sanitizers in large quantities to the concerned. Initially a DRDO lab, Defence Research & Development Establishment (DRDE), Gwalior has produced approximately 20,000 litres to cater initial requirements of its employees and government offices/ministries. In the meantime, DRDO identified a vendor with the WHO formulation with M/s Gwalior Alco Brew Pvt Ltd, Gwalior (DRDE Gwalior is providing technical support; scientists are positioned with the company to check the quality). Total capacity is 20,000 to 30,000 litres per day in 200-500 ml bottles. The cost is less than Rs 120/litre (including GST).

Ventilators

Since COVID-19 affects pulmonary functions, keeping in mind the futuristic requirement, Society for Biomedical Technology (SBMT) programme of DRDO has been modified to cater to the current situation. Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bangalore (a DRDO lab) has identified a vendor (M/s Scanray Tech Pvt Ltd, Mysore) to produce critical care ventilator. It has been created by using existing technologies like breath regulators, pressure/flow sensors, etc. Presently, innovation is on to create 'Multi patient ventilator' wherein several patient can be supported by a single ventilator. This innovation is expected to be available within a week. Around 5,000 ventilators will be produced in the first month and 10,000 subsequently. The DRDO has identified local alternatives to supply of critical components. Already Secretary (Pharmaceuticals) has identified nine companies for design transfer to produce and Mr Anand Mahindra for fabrication of components. Each ventilator unit will cost around Rs four lakh.

N99 masks

Five layer N99 masks with two layers of nano mesh are very advanced. These are one of the critical times to stop spread of Corona. Its production vendors are M/s Venus Industries Mumbai, M/s IMTEC Kolkata. Capacity is 10,000 N99 masks per day. Material for these are sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

Body Suits

Body suit is critical requirement for doctors, medical staff, sanitations workers, etc so that they are not contracted by COVID-19 during their work. Earlier, DRDO had developed this body suit for medical & paramedical staff to manage & evacuate the casualties in the event of radiological emergencies, which right now is converted as a full body suit to stop contamination. The suit is washable and has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found suitable for the cause. M/s Frontier Protective Wear Pvt Ltd Kolkata, transfer of technology holder that is already working with Ministry of Textiles, and M/s Medikit Pvt Ltd Mumbai are producing 10,000 suits per day with some works continuity problems. Each suit costs Rs 7,000.

ABB/SS/Nampi/KA/DK/Savvy

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