

## **PPP in defence sector need of the hour: Jayaraman**

Public Private Partnership(PPP) in defence sector is the need of the hour, DRDL Director, K Jayaraman said.

Participating in a two-day conference on Make in India: DRDL (DRDO) CII Industry Meet on Opportunities and Challenges for SMEs in the Defence Sector jointly organised by Confederation of Indian Industry (CII) Telangana and DRDL here, Dr Jayaraman in his keynote address, emphasised the need for a closer interaction and constant engagement between the defence organisations and the SME sector.

The Director touched upon some of the ongoing DRDOs missile projects Aakash, Ashtra, Brahmos, besides others and expressed the need to involve private sector, especially from the SME segment to develop various components, including critical engineering and composite technologies.

Dr Jayaraman mentioned that the defence organisations have immense requirements in the areas of precision, engineering, electronics manufacturing, electronics sub systems, RF seeker technologies, besides many others and were looking for more SME players to cater the growing procurement needs.

He also highlighted that defence components are getting exported, which goes to prove that the defence manufacturers from the private sector do meet the high quality standards in international markets.

## **Suspect detergent in milk? DRDO's test kit will tell you in minutes**

*More than two thirds of the milk in India does not meet the food safety standards.*

India is today the world's largest producer of milk thanks to the white revolution. Yet more than two thirds of the milk in India does not meet the food safety standards. Adulteration of milk is rampant, a startling six per cent of the samples tested in 2015 by the Ministry of Health had presence of 'detergents' in them confirming that 'synthetic milk' is a huge problem.

For a lay person trying to differentiate between contaminated and pure milk is a tall order and only specific chemical tests can reveal the truth. Contaminated milk can be a huge health hazard especially when it has been laced with urea, detergents and other toxic chemicals. With the festival of Holi round the corner, it is time to be alert about the dangers of milk contamination.

Now a cheap milk testing kit has been developed by the Defence Food Research Laboratory (DFRL) in Mysuru, which is a part of the gigantic Defence Research and Development

Organisation (DRDO). This kit, which even an untrained person can use at home, helps within minutes detect contamination of six common adulterants in milk.

Recently as part of another initiative, Union Minister for Science & Technology and Earth Sciences Harsh Vardhan unveiled another dedicated system for the detection of adulteration and analysis of milk, developed by Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani.

According to Vardhan, "The gravity of the situation had been such that the National Institute for Transforming India (NITI Aayog) identified the problem of detecting adulteration in the milk within three minutes at Rs 4 or less, as one of the grand challenge areas being considered under the 'Atal Innovation Mission'.

In this backdrop, Vardhan appreciated the initiative of CSIR for developing and deploying this technology solution, 'Ksheer-Scanner', which instantaneously detects the above- identified adulterants in milk. It is a low-cost portable system with user-friendly features. It enables detection of contaminants in just 40-45 seconds at the per sample cost of less than 50 paise.

Earlier, Union Agriculture and Farmers Welfare Minister Radha Mohan Singh while speaking at National Dairy Research Institute, Karnal, Haryana said, "India stands first on global milk product scenario. Milk production has been increased from 137.68 million tonne in 2013-14 to 146.31 million tonne in 2014-15. For the first time there is a record enhancement of milk production as 6.3 per cent whereas on international scenario there is only an increment of 2.2 percent enhancement of milk production." This is a spectacular achievement for the country which in 1950 was producing a mere 17 million tonnes of milk. An almost nine-fold increase in milk production in a little over 60 years. However, what is most embarrassing for the country is a 2015 admission by Union Minister for Health & Family Welfare J P Nadda that "the Food Safety and Standards Authority of India (FSSAI) had conducted a nationwide survey on milk adulteration in 2011. A total of 1791 samples were drawn from 33 states and were tested in the government laboratories. 68.4 per cent of the samples were found to be non-conforming to the prescribed standards. Out of these, in 46.8 per cent samples, milk found to be sub-standard in respect of fat and solid not fat (SNF) contents. Another 44.69 per cent of the samples (548) in respect of skim milk powder were found to be non-conforming to the prescribed standards where presence of glucose was detected in 477 samples. A total of 103 samples (5.75 per cent) were found to be adulterated with detergents."

"Milk adulteration is particularly high during the festival season, when the demand peaks but production cannot be increased," explains M C Pandey, a scientist at the DFRL who has helped develop the milk testing kit.

The kit developed by the defence institute uses just a few chemicals and strips of paper dipped in a different chemical. A change in colour of the milk or a change in colour of the paper indicates the presence of a contaminant. When detergents are present in the milk the colour of test turns to green, yellow or blue and Pandey says the test can detect as low a value as 0.5 per cent of the contaminant. Especially in north India, a lot of milk during the festival season is made using detergents and urea. Called 'synthetic milk', it resembles milk but can be very harmful.

Every day washing powder and refined oil are mixed and then diluted to make it look and have the consistency of real milk. Scientists at this nondescript lab in Mysuru developed the kit at a mere cost of Rs 9 lakh and the box containing 320 strips for testing 8 different contaminants with

the cost of each test strip coming to just about Rs 2. Pandey says all the other milk-testing kits require sophisticated laboratory settings but this simple strip based test helps Indian soldiers test supplies of fresh milk even at remote locations. Occasionally to make milk look fresh, some 'neutralisers' are added using the strip test the contaminated milk becomes pink in colour. If the milk contains urea the test becomes yellow. The technology for the milk testing kit has been transferred to a private company Pearl Corporation says Pandey who says the DRDO sold the technology at a royalty of Rs 1.25 crore annually, this according to him marks the success of this technology. Pandey explains this kit should be very helpful to plug ingress of contaminated milk at source. He suggests if such tests become common then milk when it is collected by suppliers at the level of the households could be tested and if found contaminated it should be rejected right at the doorstep of a small dairy supplier. Rather than a large consignment of milk being rejected for contamination at the level of a milk plant, where hundreds of tons of milk gets collected for further processing. Singh says, "Dairy plays an important role in agriculture domain of the country with the 3.9 per cent contribution to the national gross product. It is not only a substantial source of livelihood but also most credible basis to ensure the national food requirement. It is the repercussion of the growth in dairying that the growth rate of agricultural sector has been 4 per cent unabatedly.

"Today we have been able to provide on an average 302 gm per person per day milk in the country which is more than the minimum required recommended by the WHO." So even as India feels proud of being the number one producer of milk in the world having outpaced US, China and Brazil, the large-scale contamination of milk remains a big blemish for the White Revolution. Towards that Nadda says "the menace of food adulteration and particularly milk adulteration needs to be eliminated."

*The Hindu*  
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## **Defence organisations looking for more SMEs suppliers**

Defence organisations towards meeting their growing procurement needs in areas such as precision engineering are looking for more SME (small and medium enterprises) suppliers.

Electronics manufacturing and sub systems, RF seeker technologies besides precision engineering are areas where the requirements are immense, according to K.Jayaraman, Director, Defence Research and Development Laboratory (DRDL). He was addressing a two day 'Make in India: DRDL (DRDO) – CII industry meet on opportunities and challenges for SMEs in the defence sector' that opened in Hyderabad on Monday.

Listing some of DRDO's ongoing missile projects, he expressed the need to involve private sector, especially SMEs, to develop various components, including critical engineering components and composite technologies. Towards this, Dr. Jayaraman emphasised the need for constant engagement between the defence organisations and SME sector.

Chairperson of CII Telangana Vanitha Datla said it was imperative for Indian firms, especially SMEs, to integrate themselves into the supply chains of national defence majors to help reduce dependence on foreign supplies and gain a foothold in the market.

Convenor of CII Telangana's MSME Panel Mahesh Desai urged defence organisations like DRDO to mentor and enhance the potential of SMEs, a press release on the meet said.