

**GOVERNMENT OF INDIA
MINISTRY OF HEALTH AND FAMILY WELFARE
DEPARTMENT OF HEALTH RESEARCH**

**LOK SABHA
UNSTARRED QUESTION NO. 2021
TO BE ANSWERED ON 21ST DECEMBER, 2018**

DEVICE TO DETECT MELAMINE IN MILK

2021. SHRI PONGULETI SRINIVASA REDDY:

Will the Minister of **HEALTH AND FAMILY WELFARE** be pleased to state:

(a) whether researchers at the Indian Institute of Science, Bengaluru has developed a new handheld device to detect melamine in milk; and

(b) if so, the details and findings thereof?

**ANSWER
THE MINISTER OF STATE IN THE MINISTRY OF HEALTH AND
FAMILY WELFARE
(SMT. ANUPRIYA PATEL)**

(a) & (b): Yes. A highly sensitive, selective, and rapid interference green synthesis-based determination of potential milk adulterant melamine has been developed by IISc researchers. Melamine is a nitrogenous compound added to milk for mimicking proteins, consumption of which leads to kidney stones and renal failures. Melamine interacts with ascorbic acid through strong hydrogen-bonding interactions, thus resulting in an interference/interruption in the formation of silver nanoparticles which was confirmed by UV-Vis spectroscopy and Transmission Electron Microscopy. The corresponding benchmark validations for melamine spiked milk samples were performed using High Performance Liquid Chromatography. This interference in the formation of silver nanoparticles resulted in colour change that varies with concentration of melamine, thereby enabling in-situ rapid sensing of melamine from milk to a lower limit of 0.1 ppm with a linear correlation coefficient of 0.9908.