Executive Summary on National Survey on Milk Adulteration

The National Survey on Milk Adulteration 2011 (snap shot survey) was conducted by the Food Safety and Standards Authority of India to ascertain the quality of milk and identify different type of adulteration in the liquid milk throughout the country. The survey was carried out by the Regional Offices of the FSSAI located at Chennai (Southern Region), Mumbai (Western Region), Delhi (Northern Region), Guwahati, (North Eastern Region) and Kolkata (Eastern Region) with the following objectives:

1. To identify the common adulterants in milk in rural and urban areas of different states.
2. To find out the non conforming samples in loose and packed milk.

The samples were collected randomly and analysed from 33 states namely Andhra Pradesh (75), Arunachal Pradesh (25), Assam (109), Bihar (75), Chhattisgarh (19), Chandigarh (25), Delhi (71), Dadra & Nagar Haveli (12), Daman & Diu (25), Goa (24), Gujarat (100), Haryana (109), Himachal Pradesh (27), Jammu & Kashmir (18), Jharkhand (25), Karnataka (51), Kerala (50), Madhya Pradesh (61), Maharashtra (126), Manipur (25), Meghalaya (26), Mizoram (25), Nagaland (22), Orissa (50), Puducherry (25), Punjab (109), Rajasthan (103), Sikkim (18), Tamil Nadu (74), Tripura (25), Uttarakhand (26), Uttar Pradesh (136), West Bengal (100) totalling to a sample size of 1791.

The samples were sent to the govt. laboratories namely, Department of Food and Drug testing, Government of Puducherry, Central Food Laboratory, Pune, Food Reasearch and Standardisation Laboratory, Ghaziabad, State Public Health Laboratory, Guwahati and Central Food Laboratory, Kolkata for analysis. The following parameters were analysed such as Fat (%), SNF (%), Neutralizers, Acidity, Hydrogen Peroxide, Sugar, Starch, Glucose, Urea, Salt, Detergent, Skimmed milk powder, and Vegetable fat to ascertain the presence of adulterant.

The total conforming samples to the FSSA standards were 565 (31.5%). The total non-conforming samples were found to be 1226 (68.4%).

The non-conformity of samples in rural areas were 381(31%) out of which 64 (16.7%) were packet samples and 317 (83.2%) were loose samples respectively and in urban area the total non confirming samples were 845 (68.9%) out of which 282 (33.4%) were packed and 563 (66.6%) were loose samples.

The deviations were found highest on account of Fat and SNF content in 574 samples (46.8%) of the total non–conformity, which includes 147 samples with detergent and two samples with neutralizers respectively. Detergent was also found in 103 samples (8.4%). Perhaps the reason may be dilution of milk with water. The second highest parameter of non conformity was the Skim Milk Powder (SMP) in 548 samples (44.69%) which includes presence of glucose in 477 samples. Glucose would have been added to milk probably to enhance SNF. The presence of Skim Milk Powder indicates the reconstitution of milk powder.

The non-conforming sample in the descending order of percentage with respect to the total sample collected in different states were as follows: Bihar (100%), Chhattisgarh (100%), Daman and Diu (100%), Jharkhand (100%), Orissa (100%), West Bengal (100%), Mizoram (!00%), Manipur (96%), Meghalaya (96%), Tripura (92%), Gujarat (89%), Sikkim (89%), Uttrakhand (88%), Uttar Pradesh (88%), Nagaland (86%), Jammu & Kashmir (83%), Punjab (81%), Rajasthan (76%) Delhi (70%), Haryana (70%), Arunachal Pradesh (68%), Maharashtra (65%), Himachal Pradesh (59%), Dadra and Nagar Haveli (58%), Assam (55%), Chandigarh (48%), Madhya Pradesh (48%), Kerala (28%), Karnataka (22%), Tamil Nadu (12%), and Andhra Pradesh (6.7%).

All the samples in Goa and Puducherry conformed to the standards.

Conclusion

(1) The study indicates that addition of water to milk is most common adulterant. Addition of water not only reduces the nutritional value of milk but contaminated water may also pose health risk to the consumers.

(2) It also shows that powdered milk is reconstituted to meet the demand of milk supply. All state /UT enforcement authorities may specifically check whether the declaration of new FSSAI rules is being complied to.

(3) The study also indicated the presence of detergent in some cases. Consumption of milk with detergent may cause health hazards and indicates lack of hygiene and sanitation in the milk handling.