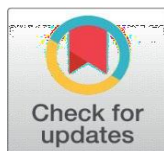
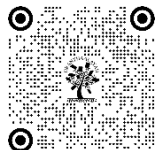


MILK ADULTERATION IN DELHI- NCR: A MYTH OR REALITY: AN ANALYSIS OF EXISTING LEGAL AND REGULATORY FRAMEWORKS IN CURBING MILK ADULTERATION

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ABSTRACT

Milk has a history of being advertised as a superfood and an essential in an average Indian's day. Over the years, the quality of milk is degrading due to mixing of any substance that is inferior in quality but promises better profits. This process is adulteration of the milk and has become quite common in India. In actuality, within the realm of food products, milk stands out as particularly susceptible to adulteration, hence posing significant health risks to consumers. Though the matters concerning the 'right to health' is immensely important India does not recognise it as a Fundamental Right. However, several judicial interpretations have considered it a part of the Article 21, Right to Life. This confers an important status to the matter to public health. Thus, the judicial interpretation serves as a supplementary component to the 'Right to Life' and the same is also considered to be of extreme importance under the Indian Constitution's (IC) Part IV. Its inclusion in Article 21 necessitates the need to curb the menace of adulteration in food products and in specific, in the milk which is undoubtedly an important source of nourishment. Thus, this research looks to analyse existing laws and policies providing for requisite standards to be maintained with respect to milk quality and the role of judiciary in protecting the right to health concerning adulterated supply of milk. There are numerous judgements wherein courts have expressed significant concern on the worrisome prevalence of such practices inside the nation and have advocated for the implementation of rigorous penalties for this transgression. Incorporating both doctrinal and an empirical component to the research, the authors via this research try to map the success of government (govt.) and other stakeholders in ensuring availability of safe milk in Delhi -NCR while emphasising on the dire need of empowering the citizens through legal sensitisation and advocating awareness in this regard. Also, this research put forth various suggestions to strengthen legal and regulatory frameworks to combat the menace of milk adulteration effectively.

Keywords: Milk Adulteration, Health, Awareness, Legal and Regulatory

1. INTRODUCTION

An old Indian tale goes, “once, a king ordered people to fill a pond with milk overnight. A man decided to pour water instead, and so did the next one, and the one after him, and so it went. In the morning, the king found only a pond full of water.” Even though this is an old children's story, the “pond” was contaminated then, is contaminated now as well with hazardous adulterants which end up diluting and making the milk unfit for the Indian population to consume.

This act of deceit rooted in greed and a disregard for the public health is perhaps as old as the human civilization itself, as are the laws directed at its control. The earliest references to anti-adulteration law and the specific fines which used to be levied on the adulterators, i.e. ‘kantakas’ can be found in Kautilya's Arthashastra, in a chapter titled ‘Kantaka Sodhana’

¹ Sunita Devi, “Kautilya on Food Adulteration” (2018) 5(4), *International Research Journal of Human Resource and Social Sciences*, 415

via various slokas ², laying out the fine for adulteration of grains, oils, salt, medicines etc. It is appalling how the act has stood the test of time with adulteration having roots in ancient civilizations and sprouting trees in contemporary era as well. In today's time, it is still a serious offence, due to which the "Prevention of Food Adulteration Act was passed in 1954." "The Food Safety and Standard Acts (2006) retracted this by consolidating eight laws"³ which governed the food sector. It also established the "Food Safety and Standards Authority (FSSAI)" as the regulator.

The FSSAI establishes and enforces standards to regulate the standard of milk along with milk products available in the market. However, despite these existing standards many research and surveys conducted till date reveals detection of various ubiquitous adulterants. For instance, in a report titled "National Milk Safety and Quality Survey 2018" compiled by the FSSAI, 12/6,432 samples of milk had presence of adulterated ingredients rendering such milk unsafe for consuming it⁴ wherein out of the total count of samples examined, six were identified as contaminated with hydrogen peroxide, three samples contained detergents, two had urea, and one contained neutralizers. Other common adulterants include benzoic acid, urea, skimmed milk powder, water, sugar, detergent etc. in the pure milk samples thereby leading us to think that the milk samples don't meet the anticipated quality standard. One significant result of the survey was the detection of Aflatoxin M1 residues exceeding the acceptable thresholds in 368/6,432 samples, accounting for 5.7% of the total samples. The introduction of aflatoxin M1 into milk occurs via feed along with fodder.⁵ According to the survey, 77/6,432 samples, which accounts for 1.2% of the total, contained antibiotic residues over the acceptable levels. The FSSAI defended the milk production to be safe even when it found Maltodextrin in 156/6432 samples along with Sugar in 78/6432 samples even though their presence raises the level of fat and solid non-fat. Similarly, according to another report by The Consumer Guidance Society of India (CGSI) which is a non-Profit Consumer Organization gave a report highlighting: Between January 2019 to December 2019 four hundred and thirteen packets of milk were sent for testing. These samples were tested for fat and non-fat solids. Out of these only 87 milk samples, i.e., 21 % complied with standard specification set by the FSSAI.⁶ Since milk holds immense importance in Indian food culture and is consumed in various forms both as a fresh fluid and as processed dairy products like khoa, along with chenna, along with paneer, along with ghee, along with butter, along with curd, along with ice cream, it remains a key focus area for surveillance by FSSAI. The FSSAI has a commendable track record of conducting surveys and surveillance programs to track the safety along with quality of various food commodities, counting milk along with milk products.

2. ADULTERANTS IN THE MILK AND THEIR IMPACT

Milk, which is a vital source for nourishment, growth and repair of the body, any adulteration in the same can pose serious threat to the health and life of the consumers. Some of the most ubiquitous adulterants inside the milk are the incorporation of water to boost milk volume and use of thickening agents like starch and flour. Ingredients like, urea, milk powder, and sugarcane are also commonly used. It also has hydrogen peroxide, ammonium sulphate, whey, sodium

² ibid, See also Kautilya Arthashastra, {2.12.32} Vilavanmuttamam dandam dadyat, which means that-

"A person selling adulterated salt should pay the highest fine for violence." and {4.2.22} Dhanyasnehaksharavanagandhabhaisjayadravyanam samvarnopadhanedvadashapano dandah. which means that "For mixing things of a similar kind with objects like grains, fats, sugars, salts, perfumes, and medicines, the fine is twelve panas"

³ There used to be eight different laws before the Food Safety and Standard Act was enacted in the year 2006. "The Vegetable Oil Products (Control) Order, 1947 being the earliest, The Prevention of Food Adulteration Act, 1954., The Fruit Products Order, 1955 and orders issued under the Essential Commodities Act, 1955, that relates to food, The Meat Food Products Order, 1973. The Edible Oils Packaging (Regulation) Order, 1998. The Solvent Extracted Oil, De oiled Meal, and Edible Flour (Control) Order, 1967." The legislation including the milk products, namely, "Milk and Milk Products Order, 1992".

⁴ National Milk Safety and Quality Survey 2018
<https://www.fssai.gov.in/upload/press_release/2019/10/5da973ffaefcfPress_Release_Milk_Survey_Report_18_10_2019.pdf>
accessed 20 January 2024

⁵ ibid

⁶ Dhairya Gajara, '79% milk in Maharashtra is adulterated: study', *The Hindu* (Mumbai, 4 March 2020)
<<https://www.thehindu.com/news/cities/mumbai/79-milk-in-state-is-adulterated-study/article30976549.ece>>
accessed 9 December 2023

carbonate, caustic soda, refined oil etc.⁷ These adulterants, preservatives and drugs in milk not only reduce the nutritional value of the milk but may also prove to be life threatening causing some or most of the following:

(A) HEALTH RISKS: various health problems like skin diseases, malfunctioning of organs, cancer, gastrointestinal disorders, heart problems, eye problems etc. can result from using adulterated milk. Addition of urea to boost the shelf life of the milk can cause digestive issues, organ damage, and even cancer if the consumption is at regular intervals. Similarly, addition of Peroxides for making the milk seem fresh and addition of detergent to give a frothy visual and white colour to milk can lead to complications in the gastrointestinal tract, including gastritis and intestinal inflammation. Melamine consumption at levels above the safety threshold can also cause infants to die from renal failure. Further, MA with starch to increase solid-not-fat (SNF) can cause diarrhoea. Carbonate and bicarbonates may also hinder normal hormone signalling which controls development and reproduction⁸. Similarly, presence of Aflatoxin M1 inside the milk straight through feed along with fodder, generated by specific fungus frequently present in agricultural crops like peanuts, along with cotton seeds etc. cause aflatoxicosis, as a repercussion there can be acute liver failure and jaundice, with symptoms like lethargy, nausea, ultimately causing death. Also, the exposure to AFM 1 from milk also causes stunting across children.⁹ The limit for Aflatoxin M1 in milk in India as specified by FSSAI should be under 0.5 ppb, i.e., one ton of milk ought not contain over 500 micrograms of Aflatoxin M1.¹⁰

(B) NUTRITIONAL DEFICIENCY: There is a lack of essential nutrients in adulterated milk leading to adverse health effects. Children who depend on milk for growth and developing stronger bones and muscles are at the receiving end.

(C) ECONOMIC LOSS: The adulterated milk is sold at a lower price than the pure milk due to which the genuine dairy farmers have to suffer. Moreover, consumers have to pay for the adulterated milk the price of the pure milk which causes financial losses to them.

3. MILK ADULTERATION (MA) IN INDIA VIZ A VIZ PUBLIC HEALTH: CONSTITUTIONAL, LEGISLATIVE AND JUDICIAL RESPONSE

(A) CONSTITUTIONAL APPROACH

India holds the distinction of being the foremost global producer of milk, contributing to over 23% of the overall global production. Additionally, India engages in the exportation of dairy goods valued at over \$200 million to various nations. It is also pertinent to note that besides being the highest milk producer, India is the largest consumer of milk as well.¹¹ Regrettably, contaminated milk poses a substantial worry in India, as there have been instances of unethical actions like water dilution, detergent contamination, and incorporation of harmful chemicals to cope up with the increasing demand of milk not only challenges the country's dairy industry's integrity but also calls for stringent regulations and enforcement measures to guarantee consumption of safe and healthy food as a step to maintain public health.¹²

In India, despite public health being a state subject under the Constitution of India, where in the chief accountability to deliver quality health care amenities to the public lies with State, the Central Govt. also plays key role in planning health

⁷ Milk Adulteration and its Control <<https://www.dairyknowledge.in/dkp/content/milk-adulteration-and-its-control-0> accssed on 18 December 2023>accessed 13 December 2023.

⁸ Himshweta and Minni Singh 'Nanosensor platforms for detection of milk adulterants' (2023) 5, *Sensors and Actuators Reports*, 100159 <<https://www.sciencedirect.com/science/article/pii/S266605392300022X>>accessed 24 December 2023

⁹ National Milk Safety and Quality Survey 2018 (n 4)

¹⁰ G. Devegowda and V. Sridhar and P.L. Sherasia, 'Aflatoxin: Prevalence and Control in Dairy Feeds and Milk' [2019] National Dairy Development Board, 4 <https://www.nddb.coop/sites/default/files/pdfs/Booklet_on_Aflatoxin.pdf > accessed 12 December 2023

¹¹ 'The silent saboteur: Unveiling the dark side of adulterated milk' <<https://www.wionews.com/entertainment/lifestyle/news-the-silent-saboteur-unveiling-the-dark-side-of-adulterated-milk-636548> >accessed 25 December 2023

¹² *ibid*

policies and programmes. Legislative policies framed under the central and the state governments can act as a boon in curbing adulteration practices.¹³

The Directive Principles of State Policy (DPSPs), talks about The policies to be followed by the State towards the health along with strength of workers, men, women and children are mentioned in the part IV of the constitution, “Directive Principles of State Policy”¹⁴. Although the DPSP cannot be enforced by the courts it bears fundamental importance in the nation’s governance, & promotion of people’s welfare by safeguarding an effective social order¹⁵. Along with this, the State is under the mandate to boost the nutritional level and living standard to boost the public health.¹⁶

In addition to these above mentioned DPSPs, some other health-related provisions can be found in the 11th and 12th Schedule of the Indian constitution, as subjects within the jurisdictions of Panchayats and Municipalities, respectively ¹⁷ Apart from constitutional provisions, adulteration of food in India finds its place under general penal laws ¹⁸and special statutes also. The 2006 Act, Food Safety and Standards consolidates the legislation related to food and aims to ensure safe and quality food for people.

(B) LEGISLATIVE RESPONSE

(i) The Food Safety and Standards Act, 2006

The Act provides for a legal framework guaranteeing food safety in India, by consolidating multiple legislations and regulatory authorities governing the food sector lacking uniformity in approach and providing for various ministries and agencies for the enforcement of laws, thereby failing to match the burgeoning evolution in terms of technology, storage, packaging etc¹⁹. Thus, to bridge the gaps left by the previous legislations in terms of defining food adulteration and the penalties for non-compliance, the FSS Act 2006 came into existence and addressed these issues by establishing a single regulatory authority, the FSSAI.²⁰ It lays down the standards for food safety, hygiene, and sanitation that food businesses must comply with²¹ and introduces innovative concepts.²² Some measures are the implementation of Audits for food safety and Food Safety Management systems. Being enthused from Codex²³, its standards equate the global level quality. Concerning the territorial application, the Act covers all of India and provides for uniform licensing/registration across the States and the Centre. According to Sections (Sec.s) 19 to 21 of the Act, it is mandated that food articles must never contain any contaminants, counting organic toxic substances, along with hormones, along with heavy metals, along with insecticides, along with pesticides, along with veterinary drug residues, along with antibiotic residues, along with solvent residues, along with pharmacological active substances, along with micro-biological counts that exceed the

¹³ Constitution of India, 1950, Sch VII, List II, Entry 6: public health and sanitation; hospitals and dispensaries and List III, Entry 18: adulteration of food stuffs and other goods

¹⁴ *ibid*, art 39 (e)

¹⁵ *ibid*, art 38 (1)

¹⁶ *ibid*, art 47

¹⁷ *Ibid*, schs XI and XII were added by the 73rd and 74th Constitutional Amendment Act of 1992 which introduced a three-tier system to our democracy in the form of the Panchayati Raj System in rural areas and Municipalities in urban areas.

¹⁸ Indian Penal Code, 1860, s 272, “Whoever adulterates any article of food or drink, so as to make such article noxious as food or drink, intending to sell such article as food or drink, or knowing it to be likely that the same will be sold as food or drink, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.”

¹⁹ Prior to 2006, food regulation in India was under the “Prevention of Food Adulteration Act, 1954 (PFA)”. The Food Safety and Standard Act 2006 repealed many previous statutes regulating numerous aspects related to food. See Footnote No.4 for details on the legislative policies relating to food safety. <<https://foodsafety.delhi.gov.in/foodsafety/frequently-asked-questions>> accessed on 28 December 2023.

²⁰ Anubha Dhulia, “Laws on Food Adulteration: A Critical Study with Special Reference to the Food Safety and Standards Act, 2006” [2010] *ILI Law Review*, 163

²¹ Pitta Issac Newton ‘Food Safety and Standards Act, 2006: “Punishment for Unsafe Food in Milk and Milk Products” (2023) 6(1) *International Journal of Law Management & Humanities*, 1950

²² *ibid*

²³ “The Codex Alimentarius is a collection of internationally recognized standards, codes of practice, guidelines, and other recommendations relating to foods, food production, and food safety. Among other functions, it is accountable for setting international standards for safety and hygiene.”

quantities stipulated by the Regulations. Chapter IX (Sec.s 48 to 67) of the Act pertains to the offences & penalties for selling food not being the nature, substance or quality necessitated, along with sub-standard food, along with misbranded food, along with food containing adulterants etc. Section 57 of the Act pertains to penalty for possessing adulterants²⁴. The Act is revolutionary for its time; however, it is also impacted by the failings which in turn led to challenges in ensuring effective regulation of the food sector and promoting consumer welfare. Some of prominent shortcomings can be seen as under:

- **Limited Scope for Monetary Redressal:** Section 65 of the Act²⁵ outlines the compensation in case of injury to the consumer, which is capped at 3 lakhs for grievous injury and 1 lakh for other injuries. The section also gives provisions for compensation in case of consumer death, which is a minimum of 5 lakhs. Further perusal of Chapter X titled “Adjudication and Food Safety Appellate Tribunal of the Act reveals that section 70 empowers the Central and also State government to establish Food Safety Appellate Tribunal(s) and section 72 makes it clear any civil court lacks jurisdiction to entertain suits of any matter wherein the Tribunal is authorised to do so by the act to adjudicate.” Further, under section 71 (6), allows appeal to the High Court only under the provisions of law and pertaining to facts. Thus, from said analysis of the above-mentioned sections it become clear that the act firstly provides inadequate amounts in compensation and then creates impediments in applicability of tortious liability through which an aggrieved party can claim an adequate sum in the increasingly inflating economy. Thus, it is apparent that scope for monetary redressal of a consumer's loss is quite limited as specified in the act, particularly in the cases of injury and grievous injury.
- **Lack of Stringent Punitive Measures:** supply of adulterated milk has become an alarming matter and its long-term implications can even become a question of life and death. In 2016, a bench consisting of the then Chief Justice T S Thakur, along with Justice R Banumathi, along with Justice U.U Lalit in the case of *Swami Achyutanand Tirth & Ors. v/s Union of India & Others*²⁶ favoured stringent punishment for any adulteration in milk and advised the Central Govt. to revisit the punitive provisions under the FSS Act along with the IPC in order to make adequate revisions to the punishment specified, so that it can serve as a deterrent.

However, the perusal of section 59 of the Act that outlines the punishment for sale, storage, distribution or import of any food unsafe for consumption by humans does not seem to be stringent enough in combatting the menace²⁷

- **Need for the existing rules’ simplification and rationalization:** Once we have laid down foundational discussions, we now need the existing rules’ simplification and rationalization along with an introduction of Information Technology (IT) to help make governance more efficient, effective and up to date.²⁸

(ii) Key Regulations

²⁴ The Food Safety and Standards Act, 2006, s 57:

“(i) “where such adulterant is not injurious to health, a penalty not exceeding two lakh rupees”;

(ii) “where such adulterant is injurious to health, a penalty not exceeding ten lakh rupees”.

²⁵ “The Food Safety and Standards Act” (n 24)

²⁶ (2016) 9 SCC 699, para 22

²⁷ “The Food Safety and Standards Act” (n 24) s 59 (i) “ where such failure or contravention does not result in injury, with imprisonment for a term which may extend to six months and also with fine which may extend to one lakh rupees (ii) where such failure or contravention results in a non-grievous injury, with imprisonment for a term which may extend to one year and also with fine which may extend to three lakh rupees (iii) where such failure or contravention results in a grievous injury, such imprisonment for a term which may extend to six years and also with fine which may extend to five lakh rupees (iv) where such failure or contravention results in death, with imprisonment for a term which shall not be less than seven years but which may extend to imprisonment for life and also with fine which shall not be less than ten lakh rupees.”

²⁸ Krishna Sarma, ‘India: Paradigm Shift in Food Regulatory Environment’ [2015] Food and Drug Law Institute <<https://www.fdi.org/2017/01/india-paradigm-shift-food-regulatory-environment/>> accessed 6 January 2024

The FSSAI provides for separate regulations pertaining to Packing and Labelling, Licensing along with Registration of Food Businesses, Laboratory and Sampling Analysis as well as Recognition and Notification of Laboratories etc.²⁹ some of them can be briefly looked into as under:

The Food Safety and Standards Regulation (FSSR) (Licensing and Registration of Food Businesses), 2011 establishes that all food businesses and operators must comply with the licensing and registration requirements as per the provisions of the FSS Act, 2006. The regulations define the obligations and procedures for obtaining licences and registrations, ensuring that food businesses adhere to food safety standards along with regulations. Similarly, *Regulations Pertaining to Laboratory Testing and Sampling Analysis 2011* encompass criteria for sampling, testing procedures, and the accreditation of laboratories to ensure the accuracy along with reliability of food testing results. Here, by defining the standards and specifications for diverse food products and food additives, they encompass parameters like permissible additives, maximum residue limits, and quality standards for different food categories to guarantee the safety along with quality of food products available in the market and thereby collectively contribute to the overarching goal of guaranteeing the safety, quality, and compliance of food products with established standards, thereby protecting consumer health and interests.

The FSSR (Food Product Standards and Food Additives), 2011 defines the standards and specifications for diverse food products along with food additives. They encompass parameters like permissible additives, maximum residue limits, and quality standards for different food categories to ensure the safety along with quality of food products available in the market. Talking about milk, the extant regulation deals with standards for different classes and designations of milk from different regions of the country, along with their milk fat content and minimum percentage of milk solids which are not fats. It also provides heat treatment of various designated milk categories. Further, under *FSSR (Recognition and Notification of Laboratories), 2018* the FSSAI has been empowered to recognise “referral food laboratory” or “notified food laboratory” as “reference laboratory”³⁰. As per Sec. 2(f) of the regulation, “notified food laboratory” is a food laboratory notified by the Food Authority as per sub-section (1) of Sec. 43. According to Section 2(g) of the regulation, “referral food laboratory” entails a food laboratory established or even recognized by notification directly by the Food Authority as per sub-Sec. (2) of Sec. 43.

In 2016, the FSSAI released standards five staple food items’ fortification: rice, along with wheat, along with salt, along with oil, along with milk. Later, those standards were replaced by *FSSR (Fortification of Foods), 2018* after consideration of objections and suggestions received by the public. These regulations define the term ‘fortification’ under section 2(b) as “deliberately increasing the content of essential micronutrients in a food so as to improve the nutritional quality of food and to provide public health benefit with minimal risk to health”. Similarly, Section 3(2) empowers the FSSAI to make mandatory fortification of foods on the basis of public health needs and section 2(h) defines ‘staple foods’ as “articles of food intended for mass consumption on a daily basis”, as per definition milk is also one such staple food.

Implementation and success of the *FSSR (Fortification of Foods), 2018* can also be seen riddled with the scope for improvement in the implementation of regulations dealing with food businesses’ licensing along with registration. The licensing along with registration regulations currently demand a simple registration with fees of Rs. 100 for dairies

²⁹ “Food Safety and Standards (Licensing and Registration of Food Businesses) Regulation, 2011 ; Food Safety and Standards (Food Products Standards and Food Additives) Regulation, 2011 ; Food Safety and Standards (Prohibition and Restriction of Sales) Regulation, 2011 ; Food Safety and Standards (Packaging and Labelling) Regulation, 2011 ; Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011 ; Food Safety and Standards (Laboratory and Sampling Analysis) Regulation, 2011 ; Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, Functional Food and Novel Food) Regulations, 2016 ; Food Safety and Standards (Food Recall Procedure) Regulation, 2017 ; Food Safety and Standards (Import) Regulation, 2017 ; Food Safety and Standards (Approval for Non-Specific Food and Food Ingredients) Regulation, 2017 ; Food Safety and Standards (Organic Food) Regulation, 2017 ; Food Safety and Standards (Alcoholic Beverages) Regulation, 2018 ; Food Safety and Standards (Fortification of Food) Regulation, 2018 ; Food Safety and Standards (Food Safety Auditing) Regulation, 2018 ; Food Safety and Standards (Recognition and Notification of Laboratories) Regulation, 2018 ; Food Safety and Standards (Advertising and Claims) Regulation, 2018 ; Food Safety and Standards (Packaging) Regulation, 2018 ; Food Safety and Standards (Recovery and Distribution of Surplus food) Regulation, 2019”

³⁰ Food Safety and Standards (Recognition and Notification of Laboratories) Regulation, 2018, s 3(1) “The Food Authority may recognise any notified food laboratory or referral food laboratory as reference laboratory for the purpose of developing methods of testing, validation, proficiency testing and training.”

producing up till 500 litres of milk every day.³¹ The lack of innovative integration with regulatory bodies, which specialise in catering to the needs of a highly unorganised industry, has not allowed dairy product traceability to grow at a desired pace in India.

Product tracking from registered dairies can be streamlined and the purpose of product traceability can be fulfilled by the incorporation of digital solutions. For instance, a blockchain platform can facilitate the dairy industry in a decentralised manner and still ensure that contaminated and adulterated products are identifiable and traceable.³²

(C) ADULTERATED MILK AND JUDICIAL APPROACH

The judiciary's part in the execution of control measures for curbing adulteration in milk is worth praising as one can come across numerous judgements wherein courts have favoured strict punishment for this offence while highlighting the great duty placed on the authorities and other officers operating under the aforementioned Acts to keep up a control system and carry out additional actions that are suitable in the given situation. These actions include educating the public about food safety along with risk, conducting surveillance on food safety, and carrying out other tracking tasks that encompass all phases of the food business.

In the *Centre for Public Interest Litigation v. Union of India* case,³³ while disposing of the writ petition, the apex court of India ie, the Supreme Court (SC) held that any food article that poses a risk to public health or safety could jeopardise the right to life protected in terms of Article 21³⁴ of the Indian Constitution. As per Article 21 read along with Article 47³⁵ of the Constitution, the States and their authorities have a primary responsibility to ensure that human life and health are adequately protected. Thus, directions were given to the FSSAI to coordinate their efforts with those of their counterparts in every State along with Union Territory and to regularly inspect and monitor the main markets for fruits and vegetables to determine whether they adhere to the standards established by the Act along with the Rules. In another landmark case of *Swami Achyutanand Tirth*³⁶, to prevent the menace of growing adulteration and sale of adulterated along with synthetic milk, the Hon'ble SC issued the following directions:

1. In order to ensure an effective execution of the FSS Act, 2006, appropriate measures shall be taken by the Union of India along with the State Government.
2. Necessary actions shall be taken by the states to notify dairy owners, along with dairy operators and individual retailers operating within the States that strict measures will be taken against them in the event that chemical adulterants like pesticides, along with caustic soda along with other chemicals are discovered inside the milk.
3. The State Food Safety Authority (SFSA) should be accountable for identifying and collecting a larger count of food samples from high-risk areas (like areas with higher concentration of small-scale food manufacturers and operators) and

³¹ Food Safety and Standards (Licensing and Registration of Food Businesses), Regulations 2011. See also Tanya Verma, 'Who Needs FSSAI Registration? Is FSSAI Registration Mandatory', (2019) Corpbiz <<https://corpbiz.io/learning/is-fssai-registration-is-mandatory/>> accessed 9 January 2024

³² The integration of blockchain technology into the supply chain management has brought trust, reliability, and accountability. See Abhirup Khanna and others, 'Blockchain-Enabled Supply Chain platform for Indian Dairy Industry: Safety and Traceability' [2022] 11(17) Foods 2716

<<https://doi.org/10.3390/foods11172716>> accessed 4 January 2024

³³ (2013) 16 SCC 279

³⁴ Constitution of India, 1950, art 21, "No person shall be deprived of his life or personal liberty except according to procedure established by law."

³⁵ *ibid*, art 47, "The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavor to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health."

³⁶ *Swami Achyutanand Tirth* (n 26)

times (like during festivals) when there is an increased likelihood of consuming contaminated milk along with milk products owing to environmental along with other factors.

4. In order to enable accurate testing, the SFSAs should also make sure that all labs have or are working on getting a NABL³⁷ certification and that there is a sufficient infrastructure for lab testing. The State Govt. is responsible for making sure that district and state food testing labs are properly stocked with technicians and testing equipment.

5. The SFSA along with District Authorities should take extra precautions while sampling milk and milk products. These precautions should include spot testing using Mobile Food Testing Vans fitted with primary testing kits for food adulteration.

6. Since 2011, a snap shot survey revealed adulteration in milk by potentially hazardous substances, counting chemicals, the FSSAI should conduct such periodic snap shot surveys at the state along with national levels to maintain consistent levels of surveillance.

7. As is done inside the State of Maharashtra, in order to stop contamination/adulteration in milk, the relevant State-level Committee supervised by the Chief Secretary or even the Secretary of the Dairy Department and the District-level Committee supervised by the District Collector must be constituted. These committees will review the work that the authorities have done to curb this menace inside the district and throughout the State.

8. To stop milk from being adulterated, the relevant State Department must establish a website which outlines the roles and duties of the food safety authorities and raises knowledge of the complaint procedures. The website will provide the Joint Commissioner's contact information, counting the Food Safety Commissioners, so that complaints can be registered there. Additionally, toll-free numbers and online complaint systems to be placed and maintained by every state.

9. As per Section 18(l)(f)³⁸, the States, along with Food Authority, and Commissioner of Food Safety are required to raise consumer awareness about FSS, along with the nature of health risks linked with consumption of adulterated milk. Additionally, they must teach school children simple techniques for identifying common food adulterants through workshops, all while considering locally developed technology advancements for example Milk Adulteration detection strips.

10. The Union of India and also State Govt.s should develop a complaint mechanism to effectively monitor instances of corruption along with unethical conduct within the Food Authorities along with their respective officers.

Further, the Court held that in order to facilitate accurate testing, SFSAs will ensure the availability of suitable infrastructure for lab testing and also that all labs have or achieve NABL certification. The State Govt. shall ensure that District and State food testing laboratories have adequate staff/ technicians and access to testing facilities.³⁹

Additionally, considering the gravity of the offence, the Hon'ble SC of India also instructed the Union of India to draft the necessary modifications to both the Act of 2006 and the IPC 1860 after looking into the modifications to Section 272 of the IPC, which were made by the States of Madhya Pradesh, Orissa, West Bengal, and Uttar Pradesh, increasing the maximum sentence to life in prison along with a fine.⁴⁰

Again in *A.P. Suryaprakasam vs. The Govt. of Tamil Nadu*⁴¹ a writ petition was filed seeking directive to the Secretary of the Govt., along with Animal Husbandry and Dairy Development Department, Govt. of Tamil Nadu, towards taking immediate action to amend IPC Sec. 272 of and boost the penalty for those who adulterate milk along with milk products to life in prison, in accordance with the ruling of the Hon'ble SC in *Swami Achyutanand Tirth*⁴² as to curb the threat posed by milk adulterators who endanger the health and safety of citizens, especially those of the infants and toddlers. It was held by the SC that the matters concerning food safety ought to be given top priority in the appropriate courts that handle these kinds of cases. The importance is linked to its direct relation with the health and lives of the common people which is protected under Article 21. Therefore, relevant courts and District Revenue Officers were directed to give urgent

³⁷ NABL stands for National Accreditation Board for Testing and Calibration Laboratories

³⁸ The Food Safety And Standards Act, 2006, s 18(l)(f).

³⁹ ibid

⁴⁰ Amit Anand Choudhary, 'Supreme Court favours life imprisonment for milk adulteration', *The Times of India* (5 August 2016)

⁴¹ 2019 SCC OnLine Mad 12838

⁴² Swami Achyutanand Tirth (n 26)

priority to the civil proceedings brought by the Act against such dealers. Also, for the effective enactment of the Food Safety and Standards Act, 2006 and the directions of the Hon'ble SC in *Swami Achyutanand Tirth*⁴³, the Hon'ble SC delivered the following directions⁴⁴:

- (i) Every district collector should send a report on a regular basis to the Commissioner of Food Safety in Chennai regarding the execution of SC's directives. The Commissioner will compile the reports and forward them to the Secretary of the Govt.'s Animal Husbandry and Dairy Development Department for approval and further instructions.
- (ii) District Superintendents of Police are instructed to provide periodic updates on criminal actions and court cases to the Director General of Police, Chennai so that appropriate action can be taken.
- (iii) It is instructed that the Director of School Education, Chennai, to continue the training for Nodal teachers and students and raise awareness through the Detect Adulteration with Rapid Test (DART), and also submit a report straight to the Secretary to the Govt., School Education Department, Govt. of Tamil Nadu.
- (iv) The relevant authorities should send the aforementioned reports once every two months.

Further, the SC directed that the above guidelines should be executed with periodic monitoring of the same. Similarly, in the *Raj Kumar V. State of Uttar Pradesh* case⁴⁵, the Hon'ble SC held that once the legislature establishes its standards, such standards must be adhered to. The Act does not make it mandatory to announce that a food item is unfit for consumption especially primary items like milk. In this instance, the only thing to decide is if the article complies with the established requirements or not. Even though it isn't injurious to health, it must be treated as an adulterated article if it doesn't meet the standards. A slightest of deviation is not be ignored from the predefined standards.

4. FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA (FSSAI) AND ITS ANTI ADULTERATION INITIATIVES

Considering the fact that milk holds immense importance in Indian food culture and is consumed in various forms both as a fresh fluid and as processed dairy products like khoa, along with chenna, along with paneer, along with ghee, along with butter, along with curd, along with ice cream, FSSAI has a commendable track record of conducting surveys and surveillance programs to track the safety along with quality of various food commodities, including milk and milk products.

It is apposite to mention that in compliance to the instruction of the Hon'ble SC of India in *Swami Achyutanand Tirth*⁴⁶ pertaining to inspecting the threat posed by milk adulterators, the FSSAI via notification dated 06 FEB 2018 5:02PM by PIB Delhi titled "**Curbing Milk Adulteration**" advised States/Union Territories (UTs) to comply with the guidelines of Hon'ble SC of India⁴⁷ along with the guarantee for effective enforcement along with employment of the FSS Act, 2006 along with Rules and Regulations made via the conduct of Information Education and Communication (IEC). Along with this, the notification talked about the constitution of State/District level Steering Committee inside the States like Karnataka, Assam, & U.P.

On 3rd March, 2023, the FSSAI issued a notice for the deployment of 168 Food Safety on Wheels (FSW) mobile food testing labs across the country to carry on the spot food testing MA and quality through the "Milk-O-Screen" system installed in the FSWs. This notice was specifically released around Holi keeping in regard the high consumption of milk and adulteration in dairy products due to the festival season.⁴⁸

⁴³ ibid

⁴⁴ A.P. Suryaprakasam (n 41)

⁴⁵ 2019 (9) SCC 427

⁴⁶ *Swami Achyutanand Tirth* (n 26)

⁴⁷ Press Information Bureau, 'Curbing Milk Adulteration' (2018) <<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1519323>> accessed 23 January 2024

⁴⁸ 'States to deploy mobile testing vans to check milk adulteration: FSSAI', <<https://www.fssai.gov.in/upload/media/statestodeployFSWvans.pdf>> accessed 10 January 2024

In the month of September, same year, the FSSAI also launched a pan-India survey to detect adulteration in milk and milk products.⁴⁹ Over 10,000 samples covering 766 districts across the nation (via organised & unorganised sectors) were collected as part of this exercise and were made subject to various test parameters like adulterants, along with normal quality, along with compositional parameters, along with contaminants, along with antibiotic residues along with microbiological indicators.⁵⁰ In this survey, the FSSAI engaged Quality Council of India (QCI), an autonomous body under the Ministry of Commerce and Industry and the NDDB (National Dairy Development Board) to conduct the survey.⁵¹ The report of the survey is yet to be published.

It is pertinent to note here that FSSAI did five rounds of surveillance on milk along with milk products since 2011 and has continuously tracked the safety along with the food's quality products and plans to continue the surveillance as per the outbreak of any food connected issues along with emerging risks.⁵²

Further, to check the level of adulteration in sweets during Diwali season in 2023, the FSSAI directed the State-level officers to boost the surveillance of sweet retailers along with manufacturers through the nation. The food safety officials at the State level were requested to conduct inspections of the shops and gather samples for the purpose of assessing their quality. In addition, they were instructed to address suppliers who did not comply with quality standards.⁵³

Along with the above-mentioned endeavours, series of initiatives are put in place by the FSSAI to improve awareness on the part of consumers and the same should be disseminated all through social media and then uploaded on the FSSAI website as general information for the public. Some of them can be seen as under:

- i. FSSAI has developed a specialized playlist titled "How to check for adulteration" on its YouTube channel. This playlist has 76 concise films that provide guidance on the process of checking for adulteration.
- ii. In order to raise public awareness regarding the methods for detecting food adulteration at the household level, the Food Safety and Standards Authority of India has released a guidebook called "DART" which is an acronym of Detect Adulteration with Rapid Test. The present manual serves as a comprehensive compilation of prevalent adulterants and pollutants that can be subjected to consumer testing.
- iii. The general populace is exposed to live demonstrations of adulteration detection through exhibitions, along with melas, along with outreach activities at various events like the AAHAR International Food & Hospitality Fair, along with Indus Food, along with India International Trade Fair, along with International Dairy Federation World Dairy Summit 2022, along with Mega Expo, and Science Book Fair 2022.
- iv. The FSSAI has launched an e-book called "Food Safety Guidebook for Teachers/Students" to offer students comprehensive instructions on how to perform various tests to detect food adulteration. The assessments are aligned with the curriculum of the specific grade level. Lesson planning was discovered to be an excellent method for enhancing students' learning.⁵⁴

⁴⁹Milk, khoya, paneer, ghee, butter, curd and ice cream

⁵⁰ Express News Service, '10,000 samples of milk, milk products to be tested for adulteration in pan-India survey: QCI, India' *The Indian Express* (Ahmedabad, 16 October, 2023) <<https://indianexpress.com/article/cities/ahmedabad/adulteration-milk-products-pan-india-survey-8985575/>> accessed 27 December 2023

⁵¹ PTI 'FSSAI begins milk & milk products' survey across 766 districts, to submit report by December' *The Hindu Businessline* (Kolkata, 18 September 2023) <<https://www.thehindubusinessline.com/news/fssai-begins-milk-milk-products-survey-across-766-districts/article67321236.ece>> accessed 5 January 2024

⁵²The Survey on Milk in 2011 and 2016, The National Milk Safety and Quality Survey 2018, PAN India Milk Products Survey, 2020 and Milk Survey, 2022. See also FSSAI to conduct PAN-India Milk & Milk Products Surveillance 2023 <https://www.fssai.gov.in/upload/uploadfiles/files/Press%20Release_Milk%20Surveillance_Final.pdf> accessed 13 January 2024

⁵³ Press Trust of India, 'FSSAI steps up surveillance on sweets to check adulteration during Diwali' (2023) Outlook <<https://business.outlookindia.com/news/fssai-steps-up-surveillance-on-sweets-to-check-adulteration-during-diwali>> accessed 20 January 2024

⁵⁴ These books are available for free in eBook format and can be easily downloaded at <https://eatrightindia.gov.in/eatrightschool/learning-books>

5. MILK ADULTERATION AWARENESS AND REMEDIAL MEASURES RECOURSE SURVEY AND TESTING OF VARIOUS MILK SAMPLES BY THE RESEARCHERS UNDER THE PROPOSED STUDY

This research has adopted doctrinal and empirical methodology to map the success of govt. and various stakeholders in ensuring obtainability of safe milk in Delhi -NCR. This was done to ensure a comprehensive research output. For the empirical study, researchers conducted a survey aiming to identify level of awareness regarding adulterations in milk and remedial measures recourse. Along with this, the researchers also collected 30 samples of milk from different areas of Delhi - NCR and got those samples tested through FFSAI approved Laboratory in Delhi.

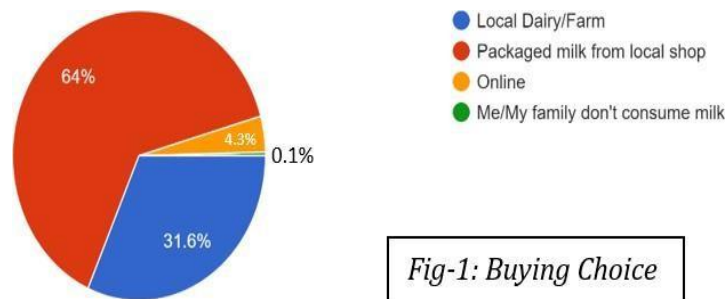
(A) KEY FINDINGS OF THE SURVEY

Keeping in mind various initiatives taken by FSSAI and the growing concern shown by the judiciary specifically in relation to milk adulteration. For this research, a survey was conducted by circulating a questionnaire containing various questions through an online modality of Google Form to which 250 people between the ages of 18 to 55 responded.

Following is the demographic representation of the responses received:

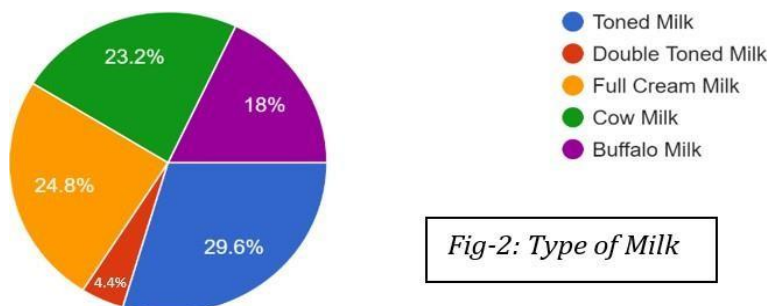
i. From where do you get your milk?

As per the data collected 64% people retorted they purchase packaged milk from local shops, 31.6% people answered about buying milk from local dairy/farm and 4.4% people retorted about purchasing milk online. This means that most people prefer purchasing packaged milk from local shops over other listed options.



ii. What Type of Milk do you buy?

According to data collected 29.6% people preferred purchasing Toned Milk, 24.8% people preferred Full Cream Milk and only 4.4% people retorted for purchase of Double Toned Milk in terms of their milk preference. Also, between cow and buffalo milk 23.2% of people preferred to purchase Cow Milk in comparison to 18% of people who preferred purchasing Buffalo milk.



iii. Do you know about the common adulterants mixed in milk? Tick ones you are familiar with?

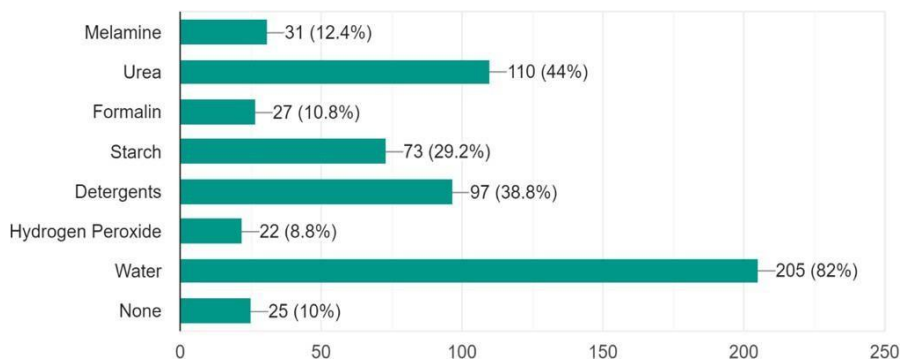


Fig-3: Awareness of common adulterants

On being given eight options with choice to select more than one option, 31(12.4%) people responded of being aware about Melamine being used as adulterant in milk, 22(8.8%) were aware about Hydrogen Peroxide being used as adulterant in milk, 27(10.8%) people responded of being aware of Formalin being used as adulterant in milk whereas in comparison Majority of people, i.e. 205(82%) were found to be aware of water being used as adulterant in milk. With respect to other adulterants like urea, starch and detergent 110(44%) were aware of urea as an adulterant in milk, 97(38.8%) were aware about use of detergent as adulterant in milk and 73(29.2%) were aware about starch as an adulterant in milk while 25 (10%) were completely unaware about above-mentioned milk adulterants.

iv. How often do you suspect that you are consuming adulterated milk?

Regarding the possibility of suspecting their milk being adulterated, 15.6%, people retorted they never suspected the milk consumed by them was adulterated whereas only 5.6% people retorted they always suspected that their milk was adulterated. On the other hand, 40.4% people retorted only sometimes they felt milk to be adulterated in comparison with 26.4% of people who retorted they rarely suspected that milk was adulterated. It was only 12% of people who retorted most of the time they suspected the milk to be adulterated. Thus, majority of the people suspected their milk to be adulterated sometimes only and not always.

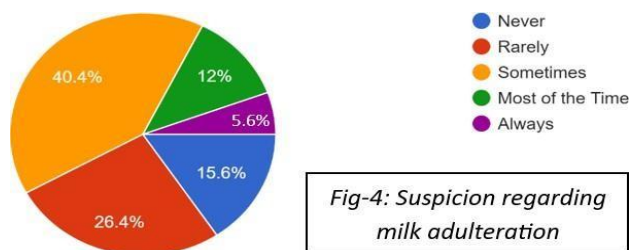


Fig-4: Suspicion regarding milk adulteration

v. Do you know that dairy animals are often given non-necessary hormone Injection to increase milk production?

Regarding awareness of the practice where the suppliers inject hormonal injections that are non-therapeutic, with the sole purpose of increasing milk production, 87.2% of people were aware of such practice while 12.8% of the people were unaware of such injection being given as a practice.

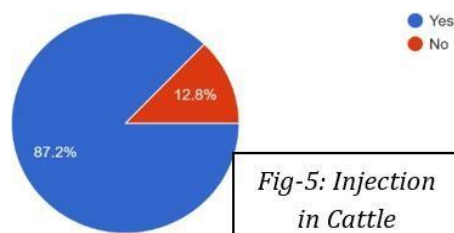


Fig-5: Injection in Cattle

vi. Do you know that some of these hormones are transmitted to the person drinking adulterated milk which lead to health issues?

On this question being corollary to the above question 72.8% of people expressed their awareness about transmission of hormones injected into animals to the human beings on drinking such milk where as 27.2 % of the people were unaware of such transmission.

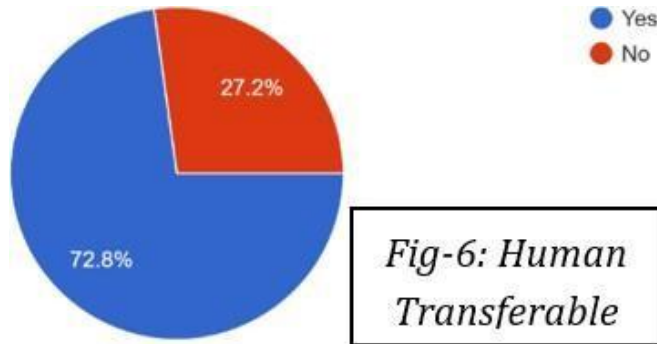


Fig-6: Human Transferable

vii. Do you know about these legal mechanisms/remedies available to consumers regarding adulteration in milk in India?

In order to assess the awareness regarding legal mechanisms/remedies available to consumers regarding adulteration in milk, on being provided with option of consumer court and FSSAI through online platform called the Food safety Connect. 20.4% of the people retorted of being aware about Consumer Court as redressal forum including online complaint with FSSAI as a legal mechanism against such adulteration while 12% of people were aware of online portal complaint on the FSSAI website. It is relevant to annotate that only 45% of people were aware of both mechanisms while 22.4 % of the people were not aware about either of the legal mechanism available against adulterations found in the milk.

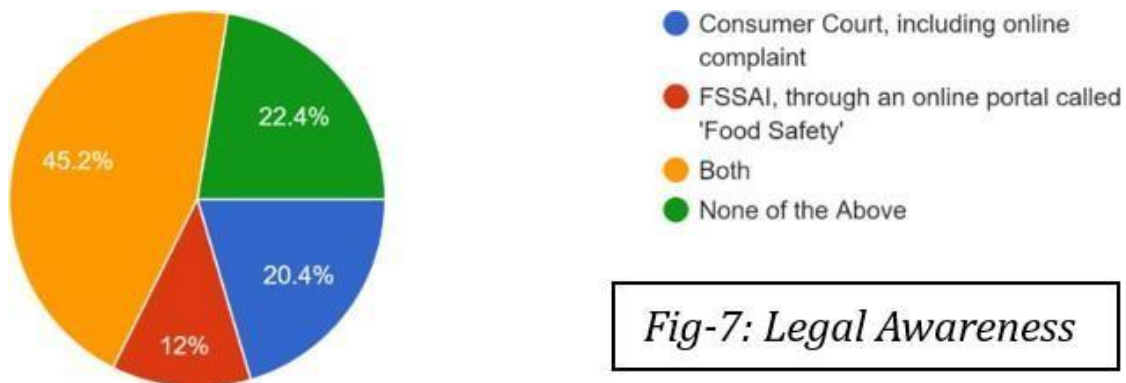


Fig-7: Legal Awareness

viii. Have you ever filed a complaint in the above-mentioned forums on suspecting that the supplier has given adulterated milk?

With respect to exercise of the above-mentioned remedies 1.6% of the people retorted they filed an online complaint either in Consumer Court or the FSSAI online Portal while 98.4% of the people retorted despite being sceptical of milk quality, they never filed any complaint. This data undoubtedly hints at lack of motivation to curb this menace on the part of public, despite having knowledge of such redressals since majority of the people never accessed that option.

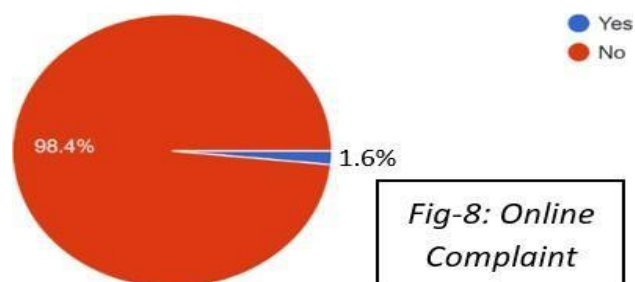


Fig-8: Online Complaint

ix. Do you know that adulteration of milk is a criminal offence under Section 272, IPC and is punishable with 6 months of imprisonment and/ or fine?

Majority of people i.e. 59.6% were discovered to be unaware of the Sec. 272, IPC, which makes adulteration a non-cognizable offence and provide, the individual in question may be subject to imprisonment for a duration of up to six months, or alternatively, a fine of a maximum of one thousand rupees, or even with both whereas 40.4 % of people retorted they were aware about same.

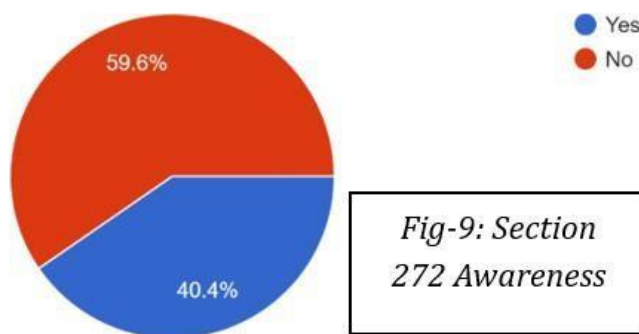


Fig-9: Section 272 Awareness

x. Do you know about any of the following techniques to check adulteration in milk at home? Tick all that apply

On being provided with simple milk quality test home parameters to gauge the awareness of the people, wherein majority of people i.e., 139(55.6%) out of 250 had no idea about any of these techniques. 102(40.8%) people retorted they knew how to check water in milk, 38(15.2%) people retorted they knew how to check detergent in milk while 36(14.4%) people retorted they knew how to check starch in milk. It is pertinent to note here, checking of urea as an adulterant was known to the least count of people only i.e., 19(7.6%) out of 250 people. Therefore, the above collected data very clearly indicated lack of awareness about conducting simple milk quality test at home.

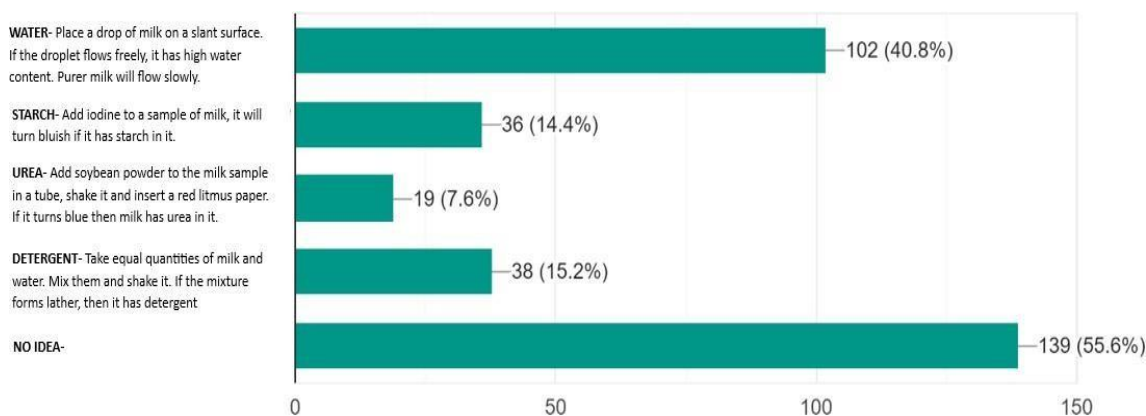


Fig-10: Milk testing at home

xi. Have you ever suspected adulteration in the milk and used home remedies to test it?

With respect to data collected regarding actual testing of adulteration through Detection Methodology at Household Level. Only 17.6% of people were found to have done such tests at house hold level while 82.4% of the people retorted they have not yet done any such test at household level. Thus, unawareness on their part about commonly publicized methods of testing adulterants in the milk available at the website of FSSAI could be seen as one of the major reasons of their not trying their hand ever on this despite of suspecting adulteration in milk sometimes.

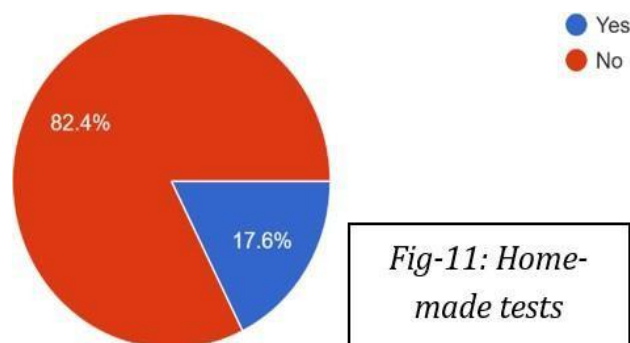


Fig-11: Home-made tests

xii. Do you know that the milk sample you have can be tested at Food Safety and Standards Authority of India approved Laboratories?

Again, on examining their awareness about getting MA tested through Research Laboratories approved by the FSSAI. Only 30.8% of the people were found to be aware of such labs, while 69.2% of the people were found to be totally unaware of the same

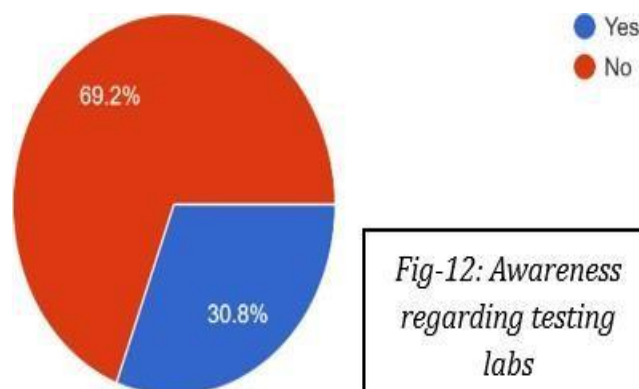


Fig-12: Awareness regarding testing labs

(B) TESTING OF MILK SAMPLES BY FSSAI APPROVED LABORATORY

As mentioned supra, to assess the success of various measures/initiatives taken so far by FSSAI in compliance to Food Safety Act, 2006 and stringent guidelines /direction was delivered by the Supreme Court of India to curb the menace of the adulteration in milk, researchers collected 30 milk samples from different areas in Delhi and NCR (Gurgaon, Ghaziabad, Noida). Both the unpasteurised (loose samples) and pasteurised milk samples (Packed) were collected from the vendor/ milk collection centre. Samples of milk included mixed milk (cow and buffalo), cow milk, buffalo milk, standardised milk, along with toned milk, along with double toned milk, along with skimmed milk along with full cream milk (please refer to table (a)). These samples were labeled and were tested by one of the FSSAI approved Laboratory in Delhi. The testing was done to check the presence of any or more of the adulterants like, neutralizers, urea, detergents, skimmed milk powder and Aflatoxin -MI etc. kindly see table (a) in this regard

Serial No.	Sample Source	Area of Source	Marked As
1	Paras Full cream	Central Delhi	S.01

2	Ananda A2 Milk Full cream	Central Delhi	S.02
3	Mother Dairy Token	South Delhi	S.03
4	Dinesh Dairy (Buffalo)	South Delhi	S.04
5	Amul Gold Full cream	South Delhi	S.05
6	Mother Dairy Token	Noida	S.06
7	Rupa Dairy Mixed Milk (Buffalo & Cow)	East Delhi	S.07
8	Mother Dairy Fit Life Double Toned Milk	East Delhi	S.08
9	Humpy A2 Desi Cow's Milk (Full cream)	East Delhi	S.09
10	Heritage Gold Full cream	East Delhi	S.10
11	Laxmi Dairy Full cream	North Delhi	S.11
12	Nestle a (+) Toned Milk	North Delhi	S.12
13	Tyagi Dairy (Buffalo)	North Delhi	S.13
14	Mother Dairy Toned Milk	North Delhi	S.14
15	Just Milk (Toned Milk)	West Delhi	S.15
16	Amul Moti (Toned) (Shelf life- 90 Days)	West Delhi	S.16
17	Amul Lactose Free Milk	West Delhi	S.17
18	Mother Dairy Cow Milk (Pasteurized, Homogenized Cow Milk)	Noida	S.18
19	Go Dairy Milk (Double Toned Milk)	Greater Noida	S.19
20	Shri Ram Dairy (Buffalo Milk)	Greater Noida	S.20
21	Amul Taaza Milky Milk (Pasteurized Toned Milk)	Greater Noida	S.21
22	Mother Dairy (Full Cream)	Gurugram	S.22
23	Country Delight Buffalo Milk (Pasteurized Milk)	Gurugram	S.23
24	Amul Taaza Milky Milk (Pasteurized Toned Milk)	Gurugram	S.24
25	Babita Dairy Milk (Buffalo Milk)	Gurugram	S.25
26	Namaste India (Pasteurized Toned Milk)	Ghaziabad	S.26
27	Patanjali Cow Milk	Ghaziabad	S.27
28	Sagar Skimmed Milk	Ghaziabad	S.28
29	Madhusudan Full cream Milk	Ghaziabad	S.29
30	Bharat Dairy Milk (Buffalo Milk)	Ghaziabad	S.30

Table (a)

RESULTS

On the basis of reports received from the testing Lab for those 30 samples of milk, the results for urea, detergent, neutralizers and Aflatoxin and skimmed milk powder are compiled in the following manner. Please refer to (Table(b))

S. No.	Sample Source	Area/ Source	Marked As	PRESENCE OF ADULTERANTS				
				Urea	Detergent	Neutralizer	Skimmed Milk Powder	Aflatoxin M1
1	Paras Full cream	Central Delhi	S.01	Negative	Negative	Negative	Negative	Negative
2	Ananda A2 Milk Full cream	Central Delhi	S.02	Negative	Negative	Negative	Negative	Negative
3	Mother Dairy Token	South Delhi	S.03	Negative	Negative	Negative	Negative	Negative
4	Dinesh Dairy (Buffalo)	South Delhi	S.04	Negative	Negative	Negative	Negative	Negative
5	Amul Gold Full cream	South Delhi	S.05	Negative	Negative	Negative	Negative	Negative
6	Mother Dairy Token	Noida	S.06	Negative	Negative	Negative	Negative	Negative
7	Rupa Dairy Mixed Milk (Buffalo & Cow)	East Delhi	S.07	Negative	Negative	Negative	Negative	Negative
8	Mother Dairy Fit Life Double Toned Milk	East Delhi	S.08	Negative	Negative	Negative	Negative	Negative
9	Humpy A2 Desi Cow's Milk (Full cream)	East Delhi	S.09	Negative	Negative	Negative	Negative	Negative
10	Heritage Gold Full cream	East Delhi	S.10	Negative	Negative	Negative	Negative	Negative
11	Laxmi Dairy Full cream	North Delhi	S.11	Negative	Negative	Negative	Negative	Negative
12	Nestle a(+) Toned Milk	North Delhi	S.12	Negative	Negative	Negative	Negative	Negative
13	Tyagi Dairy (Buffalo)	North Delhi	S.13	Negative	Negative	Negative	Negative	Negative
14	Mother Dairy Toned Milk	North Delhi	S.14	Negative	Negative	Negative	Negative	Negative
15	Just Milk (Toned Milk)	West Delhi	S.15	Negative	Negative	Negative	Negative	Negative
16	Amul Moti (Toned) (Shelf life- 90 Days)	West Delhi	S.16	Negative	Negative	Negative	Negative	Negative
17	Amul Lactose Free Milk	West Delhi	S.17	Negative	Negative	Negative	Negative	Negative
18	Mother Dairy Cow Milk (Pasteurized, Homogenized Cow Milk)	Noida	S.18	Negative	Negative	Negative	Negative	Negative
19	Go Dairy Milk (Double Toned Milk)	Greater Noida	S.19	Negative	Negative	Negative	Negative	Negative
20	Shri Ram Dairy (Buffalo Milk)	Greater Noida	S.20	Negative	Negative	Negative	Negative	Negative
21	Amul Taaza Milky Milk (Pasteurized Toned Milk)	Greater Noida	S.21	Negative	Negative	Negative	Negative	Negative

22	Mother Dairy Full Cream Milk	Gurugram	S.22	Negative	Negative	Negative	Negative	Negative
23	Country Delight Buffalo Milk (Pasteurized Milk)	Gurugram	S.23	Negative	Negative	Negative	Negative	Negative
24	Amul Taaza Milky Milk (Pasteurized Toned Milk)	Gurugram	S.24	Negative	Negative	Negative	Negative	Negative
25	Babita Dairy Milk (Buffalo Milk)	Gurugram	S.25	Negative	Negative	Negative	Negative	Negative
26	Namaste India (Pasteurized Toned Milk)	Ghaziabad	S.26	Negative	Negative	Negative	Negative	Negative
27	Patanjali Cow Milk	Ghaziabad	S.27	Negative	Negative	Negative	Negative	Negative
28	Sagar Skimmed Milk	Ghaziabad	S.28	Negative	Negative	Negative	Positive	Negative
29	Madhusudan Full cream Milk	Ghaziabad	S.29	Negative	Negative	Negative	Negative	Negative
30	Bharat Dairy Milk (Buffalo Milk)	Ghaziabad	S.30	Negative	Negative	Negative	Negative	Negative

Table(b)

All the samples were found to be safe for consumption as non-contained any of the above-mentioned adulterants except one sample that tested positive for “skimmed milk powder”. However, due to limitation of funds and high costs of testing of milk samples through FSSAI approved labs, various other adulterants, which are occasionally also discovered in milk⁵⁵, could not be conducted.

VI. KEY FINDINGS OF THE RESEARCH UNDERTAKEN AND SUGGESTIONS PROPOSED

The research undertaken by the researchers undoubtedly reveals great news about supply of safe unadulterated milk for consumers and dispels the myth that milk in Delhi -NCR is largely adulterated. Indeed, the directions given by the apex court in the case of Swami *Achyutanand Tirth*⁵⁶ and various steps taken at Centre and State level in compliance of the same to curb circulation of adulterated milk are worth appreciating. Further an important role played by the Food Safety and Standards Authority of India in undertaking a number of steps for example, Food Safety on Wheels (FSW), it is a mobile food testing, that is established across the country to carry “on the spot” food testing, milk adulteration and quality test through the “Milk-O-Screen” system installed in the FSWs and PAN India surveys to detect adulteration in milk and milk products exemplify its commitment towards the objectives with which it was formed. During normal times the supply of adulterated milk is almost negligible owing its credence to the effective legal, judicial, and regulatory initiatives. However, the possibility of adulteration with milk during festivals to meet the requisite demands cannot be overlooked which in turn requires intensified efforts for surveillance and stringent anti adulterant measures to be implemented during that time in particular.

Since the research conducted by the researchers also did not reveal sufficient level of awareness and sensitisation on the people’s part regarding adulteration in milk and various recourses available, hence, it becomes very essential to create awareness at the most elementary level amongst the consumers not only about the ubiquitous adulterants that can be assorted with milk and simple remedies to test the spotting such adulterants at household level as available on the FSSAI website as well as on the internet but also of various legal recourses available to them to lessen the risk to health as well to combat this socio-economic crime. They need to be sensitised to understand that right to safe food/right to health is their basic inherent human right and is a meaningful extension of their exercise of right to life which no one should be

⁵⁵ Hydrogen peroxide, soda, sugar, glucose etc. and contaminants like mycotoxins and antibiotics etc.

⁵⁶ Swami Achyutanand Tirth (n 26)

allowed to violate. The suppliers and vendors of the milk and various milk products too can be sensitised regarding maintenance of standards as prescribed by national laws and policies. Media platforms like, WhatsApp, Instagram, Facebook, and verified helpline numbers can be instrumental in spreading awareness. Some suggestive measures are listed below which can be followed for a zero-tolerance adulterated milk:

1. The feasibility of getting milk samples tested through the labs approved by the Food Safety and Standards Authority of India can drop the cost of testing of milk samples for the general public. The supplier can be put under consumer surveillance if there is a feasibility of authorised testing labs.
2. Free Veterinary Medicine and advice should be made readily available to the farmers so that the reliance of the cattle keepers on their self-medication and informal sources is reduced.
3. Administration of non-therapeutic antibiotics and hormones to the animals should be strictly prohibited.
4. There should be free distribution of primary milk testing kits for adulteration in every household once or twice in a year. It will definitely empower the citizens to become agents of govt. agencies in enforcing the quality of food.
5. Further, there is a need to enhance the punitive action for the offence of mixing adulterants with the milk. It is pertinent to note that under the new Bhartiya Nyaya Sanhita (BNS), 2023 (to be enforced from July 1, 2024) section 274⁵⁷ dealing with food adulteration or drink intended for sale, the amount of Fine has been boosted from one to five thousand rupees
6. Enforcing measures to cover whistle blowers who report cases of contamination, will also encourage people to come forward with the information.
7. Conducting random / surprise examinations at dairy granges, recycling shops, and retail outlets will surely discourage contamination and secure effective compliance with the existing norms.
8. Safeguarding the public health against milk adulteration can be achieved to its maximum if these suggestions are implemented in true letter and spirit.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

None.

⁵⁷ Bhartiya Nyaya Sanhita, 2023, s 274.