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Ms. Sumiti Ahuja, Assistant Professor, Faculty of Law, University of Delhi,

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Dr. Navtika Singh Nautiyal presently working as an Assistant Professor in School of law, Forensic Justice and Policy studies at National Forensic Sciences University, Gandhinagar, Gujarat. She has 9 years of Teaching and Research Experience. She has completed her Philosophy of Doctorate in 'Intercountry adoption laws from Uttranchal University, Dehradun' and LLM from Indian Law Institute, New Delhi.

Dr. Rinu Saraswat



Associate Professor at School of Law, Apex University, Jaipur,
M.A, LL.M, Ph.D,

Dr. Rinu have 5 yrs of teaching experience in renowned institutions like Jagannath University and Apex University. Participated in more than 20 national and international seminars and conferences and 5 workshops and training programmes.

Dr. Nitesh Saraswat

E.MBA, LL.M, Ph.D, PGDSAPM

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More than 25 Publications in renowned National and International Journals and has authored a Text book on Cr.P.C and Juvenile Delinquency law.



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BBA. LL.B. (Hons.) (Amity University, Rajasthan); LL. M. (UPES, Dehradun) (Nottingham Trent University, UK); Ph.D. Candidate (G.D. Goenka University)

Subhrajit did his LL.M. in Sports Law, from Nottingham Trent University of United Kingdoms, with international scholarship provided by university; he has also completed another LL.M. in Energy Law from University of Petroleum and Energy Studies, India. He did his B.B.A.LL.B. (Hons.) focussing on International Trade Law.

ABOUT US

WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal provided dedicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

FOOD ADULTERATION IN FRUIT JUICES

AUTHORED BY - HARINIE R R

Abstract:

Here in this article we will be seeing about food adulteration. Food adulteration being one of the common problems that we face in this modern world. Food is the basic necessity for every human being. The food that we consume is that which gives immunity or strength to our body to function our metabolic systems and keep us active throughout the days, but all the food that we consume are now being adulterated. Here we will discuss about what is food adulteration and how it is done and also various types and methods by which it is done and also the major impact of food adulteration in fruit juices which plays an important in role in the daily life of the youngsters. We have dealt with the major problems and ingredients that is used I fruit juices which we think is fresh with no added preservatives and give to our child. We also come across the various methods in which food adulteration can be avoided at our home itself and also the ways in which we can be healthy although being a part of the food adulterated society.

Introduction

India being ranked the second largest county that has been affected by the higher death rate due to poor diet according to the recent article published in the year 2019. India is a country where people are consuming less than a recommended quantity of 400 grams of fruits and vegetables. The youngsters as an alternative are consuming cheap and low quality snacks and other substitutes in their diet. This is harming their body in many ways. Those foods which they consumes as an alternative is mostly adulterated. Here we are going to mainly see on the adulteration done in juice which is playing a vital role in the teenage or youngsters daily diet.

What is adulteration?

If we see the general meaning of the word adulteration “means adding any substance to anything to make its quality poor”. The substance added may be anything that is hazardous to health or human life. Adulteration is intentional by removing substances to food or altering the existing natural properties of food knowingly. Adulteration is actually a legal offense but when it fails to meet the required standard prescribed by the government then it is said to have been adulterated.

Food Adulteration:

Food adulteration is an act of adding or mixing of poor quality ingredients which are harmful, substandard or useless or unnecessary in nature to the food. The act of spoiling the true nature of the particular food item or reducing its quality is considered as food adulteration.

What is adulterant?

Adulterant means any material which is used for making the food unsafe or sub-standard or misbranded or containing extraneous matter. Any substance that lower the quality of the food that we consume when anything is added to it then it is called as adulterant. Adulterants are found in many forms and in various qualities that affect the quality of the food and makes it poor. Even though some adulterants are not harmful in nature, they have the ability to reduce the nutritious value of the food or product.

Some examples of food adulteration:

Food adulteration is happening in our day to day life which has become a part of our routine, some of the examples are:

- *Mixing of milk with water.
- *Mixing of pulses with sand particles, pebbles.
- *Mixing oil with chemical substances or cheaper oils.
- *Mixing of papaya seeds with peppercorns.
- *Mixing of poor quality fruits and vegetables with good ones.
- *Mixing of chicory and tamarind seed powder to coffee powder.
- *Adding chalk powder, washing soda, urea to sugar.
- *Mixing sawdust, redbrick powder to chilly powder etc.

These are some common adulterations done in food.

Why is food adulteration done?

The process of contaminating food or reducing the quality of the food products or ingredients has become a common act in developing countries.

For example: if we add water to milk and dilute it, it increases its quantity and starch powder is often added to increase its solid content. Now this is done for many reasons in the country.

First and foremost is to make maximum profit from food items by having a fewer investment or less product.

Next the lack of proper knowledge of food consumption leads people to adulterate food without knowing the seriousness of its effects.

To increase food demand for a rapid growing populations is also a reason why this is being done.

In order to imitate some other product adulteration is done.

This is most commonly practiced as a part of business strategy.

Types of food adulterations:

There are four different types of food adulteration:

First one being Intentional Adulteration, here substance that look similar to the food product is being added to it in order to increase its weight and gain more profit. For example, mixing of sand, pebbles, mud, stone, chalk powder etc.

Second method is Incidental Adulteration which happens due to negligence while handling the food or food products. Like residues of pesticides in grains, larvae growth, presence of dropping of rodents etc.

Third method is Metallic Adulteration, here they add metallic materials into food like lead, mercury, etc. this is either done accidentally or even intentionally.

Fourth and final method is Packing Hazard, in this method the packing materials in which the food is packed also interfere and mix with the elements of the food leading to packaging hazard.

Methods of food adulteration:

Food adulteration is not only by adding or mixing but also various other methods of food adulteration is done they are as follows:

Mixing: mixing of sand, stone, dust, clay, mud, and pebbles along with food particles.

Substituting: some of the healthy elements are being replaced by cheaper and low quality

ingredients which may change the nutritional value of the food and may even cause a health hazard.

Using decomposed food: this method includes mixing of decomposed food with the healthy ones. Goods which have damage or inferior in nature are also considered to be adulterated.

Additions of toxic substances: food adulteration also includes the mixing of toxic substances to food in order to increase the profit and improvise their sales. For example, addition of wax layer to the apples to make them look bright and fresh for longer period also is a method of adulteration.

Misbranding: changes made in the manufacturing dates, expiry dates, list of ingredients or even misleading ingredients derivatives and so on. For example, advertising as there are real fruits in the particular juice or jam but what they have is all preservatives which are not fresh this is also a method of adulteration.

Artificial ripening: By addition of various chemicals to the fruits vegetables which speed up the process of ripening in them is also considered to be food adulteration. For example, during the season of summer sometimes the mangoes will not ripe accordingly but the demand for mangoes will increase during summer as it is considered as the seasonal fruit. So what farmers do is they ripen mango with the help of carbide for meeting the commercial demand in the market against supply.

Fruit juice adulteration:

Fruit juice as its name itself has an attraction to it, most people tend to buy all the packaged fruit juices thinking that it is healthy to children or even elders. As the world is modernized and people are becoming busy day by day the conscious of a healthy diet has been a major drawback in our life. Here comes the marketing strategy of fresh fruit juice being sold which saves tones of time and is also a healthier option compared to the sodas out there in the market. Now if we see that these fruit juices are claimed to be made with fresh and good quality ingredients but in fact they are also being adulterated. Among all the juices out there apple and orange juice have the high market value as it is considered to be highly nutritious so this is also where the chance of adulteration and fraud is comparatively high. Apart from these pomegranate and berry based juices also have a high market and has gained a reputation as it has got its name for curing diseases like

cancer and cardiovascular diseases. The most frequent way in which these fruit juices are being adulterated are they are diluted with water, adding of more sugar, pulp wash and other addictive preservatives are being added. Also metanil yellow which is a dye is also being used in fruit juices which gives an artificial bright yellow to the juice. In orange juice there was a detection of adulteration with mandarin juice and also grapefruit juice is also used for adulteration. Also in other juices like grape, apple, pear, peach, strawberry, and mandarin there is found to be an adulteration of discrimination of fruit juices.

Consequences of consuming adulterated fruit juices:

There are azo dyes which are being used as coloring agent in food and pharmaceutical products. These azo dyes contain metanil which brings the pH of a bright yellow color. This is considered as a sensitive indicator of the environmental chemicals. Like metanil yellow and carmoisine are two azo dyes which are used at a high rate in order to increase the visual appearance and consumer validity of foods and food products and attract the consumers. Though these may be attractive they have an adverse effect in the health of the consumers who buy the products. These food additives are known to increase the chromosomal abnormalities with increase in dosage and concentration while the time duration of treatment. It is also found that these dyes have an adverse effect causing metabolic disorder in those who consume. Research has also discovered that the usage of food dye and preservatives also causes different types of cancer. Metanil is known as illegal food dye worldwide. Also usage of this dye has been found to cause damage in different key internal tissues. These dyes are highly carcinogenic in nature that has the ability to cause cancer. Also many studies say that the use of food coloring has many causes like hyperactivity including ADHD. And there may also be a change in the behavior of the child like increase in irritability and depression. Also breathing problems like hives and asthma can also occur. They may also have a growth of tumor which may later lead to cancer.

Methods of prevention of food adulteration:

Food adulteration cannot be stopped as a whole as it is being a part of the business strategy in the global market. But we as consumers knowing that there is abundance of products that are being adulterated we have to take measure to avoid these adulterated food in our day to day life. There are few preventive measures that we can take they are as follows,

- Avoid bright or dark colored junk or any processed foods,
- Thoroughly clean and store all the grains and food products,

- Wash the fruits and vegetables before using them.
- Check the dates, ingredients and seal before buying milk, oil etc.
- We have to ensure that the products we buy has FSSAI validated label on it, along with its license number and all the ingredients used in it etc.
- We have to make sure that the products we buy are of good quality, by checking the cheaper price most people tend to buy the products which are inferior in quality.

These are some of the easy ways in which we can prevent food adulteration in our homes.

Conclusion:

Therefore food adulteration has become a part of our lives. This cannot be removed permanently from the society as the world is evolving around the big profit making companies which have used to produce products that are being adulterated and also may youngsters have also been addicted to the taste of these products. Thus we can take few preventive measures in order to overcome this. Also the government has also make various measure to keep food adulteration in control by imposing various laws and framing new rules and regulations for the companies which produce the food which are being adulterated. Adulteration can be done but only to certain extend when it turns in to a primary strategy for profit making then it will affect those who purchases that products.