FAQS

1: What does "GRAS" mean? and what is the Criteria for GRAS status?

"GRAS" ,**G**enerally **R**ecognized **A**s **S**afe. Under sections 201(s) and 409 of the Federal Food, Drug, and Cosmetic Act (the Act), did not require approval from government.

Criteria for GRAS status?

Under 21 CFR 170.30(c) and 170.3(f), general recognition of safety through experience based on common use in foods requires a substantial history of consumption for food use by a significant number of consumers.

2: If Butter, Vanaspati or Margarine is added, write to detect?

Test: Take about one teaspoon full of melted sample of butter with equal quantity of concentrated Hydrochloric acid (HCL) in a stoppered test tube and a pinch of sugar. Shake for one minute and let it for five minutes. Appearance of crimson colour in lower (acid) of Vanaspati or Margarine.

The test is specific for seasame oil which is compulsorily added to Vanaspati and Mrgarine. Some coal tar colours also give a positive test. If the test is positive i.e. red colour develops only by adding strong Hydrochloric acid (without adding crystals of sugar) then the sample is adulterated with coal tar dye. If the crimson or red colour develops after adding and shaking with sugar, then alone Vanaspati or Margarine is present.

3: Explain the detection methods of the fallowings?

a) Chilli powder added artificial colours

Test:Sprinkle the chilli powder on a glass of water. Artificial colorants descend as coloured streaks.

b). Chilli powder added water soluble coal tar colours

Test: Water soluble artificial colour can be detected by sprinkling a small quantity of chillies or turmeric powder on the surface of water contained in a glass tumbler. The water soluble colour will immediately start descending in colour streaks.

4: Asafoetida (Hing) added, Soap stone or other earthy materialis were detected?

Shake little portion of the sample with water and allow to settle. Soap stone or other earthy mailer will settle down at the bottom.

In compounded asafoetida due to presence of starch, a slight turbid solution may be produced. However, this will settle down after keeping.

5: If Green chilli and green vegetables- Green peas- Artificially coloured how to seperate? Green chilli and green vegetables- malachite green is added.

Test: Take a cotton piece soaked in liquid paraffin and rub the outer green surface of a small part of green vegetable. If the cotton turns, green, we can say the vegetable is adulterated with malachite green.

Green peas- Artificially coloured

Test:Take a little amount of green peas in a 250 ml beaker add water to it and mix well. Let it stand for half an hour. Clear separation of colour in water indicates adulteration.

6: Detecte the , a)Vegetable oil adulterated with Castor oil

b). Honey added with sugar/jaggery

a)Vegetable oil adulterated with Castor oil

Test: Take 1 ml. of oil in a clean dry test tube. Add 10 ml. Of acidified petroleum ether. Shake vigorously for 2 minutes. Add 1 drop of Ammonium Molybdate reagent. The formation of turbidity indicates presence of Castor oil in the sample.

b).Honey added with sugar/jaggery

Test: Fiehe's Test: Add 5 ml. Of solvent ether to 5 ml. Of honey. Shake well and decant the ether layer in a petri dish. Evaporate completely by blowing the ether layer. Add 2 to 3 ml. Of resorcinol (1 gm. Of resorcinol resublimed in 5 ml. Of conc. HCl.) Appearance of cherry red colour indicates presence of sugar/jaggery.

7: Whar are Chemical contaminants and how they are ransported to the environment?

Chemical contaminants can be found as organic and inorganic molecules in products used day to day by almost everybody. These include plastics, resins, pharmaceuticals, disinfectants, deodorants, detergents, petroleum products, pesticides and biocides. For many of these substances accumulation into aquatic environments can cause environmental problems. Chemical contaminants are often transported by water as it flows across the land, roads, and other impermeable surfaces. With little prior treatment, many of these contaminants may eventually discharge into waterways.

8: Give three examples of Chemical contaminants and how it effects our health?

These are the contaminents aded to the foodsand they causes various Diseases;1: Lead- chromate, added to Turmeric whole and powdered, mixed spices.Diseases or Health Effects : Anemia, abortion, paralysis, brain damage

2: Methanol- Alcoholic liquors.

Diseases or Health Effects: Blurred vision, blindness, death

3: Arsenic- Arsenic Fruits such as apples sprayed sprayed Diseases or Health Effects : Dizziness, chills, cramps, over with lead arsenate Dizziness, chills, cramps, paralysis, death

9: If the BHA and BHT-were added beyond safe limit Oils and fats ,what will happened?

BHA and BHT- beyond safe limit Oils and fats

Diseases or Health Effects :Allergy, liver damage, increase in serum chloresterol etc. 32 Monosodium glutamate(flour) (beyond safe limit)- Chinese food, meat and meat products Brain damage, mental retardation in infants.

10: What is the chemical colour added to turmatic powder and how to detect?

Turmeric powder generaly mixed with ,metanil yellow artificial colour to atract the people.

Test:Take a tea spoon full of turmeric powder in a test tube. Add a few drops of concentrated Hydrochloric acid. Instant appearance of pink colour which disappears on dilution with water shows the presence of turmeric If the colour persists, metanil yellow (an artificial colour) a now permitted coal tar colour is present.

11: Write notes on Fungal Contaminant?

Fungal Contaminant

Fungi are ubiquitous plant pathogens that are major spoilage agents of foods and feedstuffs. The infection of plants by various fungi not only results in reduction in crop yield and quality with significant economic losses but also contamination of grains with poisonous fungal secondary metabolites called mycotoxins. The ingestion of such mycotoxin-contaminated grains by animals and human beings has public health significance, because these toxins are capable of causing diseases in man and animals.

12:What are ochratoxins? and How do they affect human health?

Ochratoxins are a small group of chemically related toxic fungal metabolites (mycotoxins) produced by certain moulds of the genera *Aspergillus* and *Penicillium* growing on a wide range of raw food commodities. Some ochratoxins are potent toxins and their presence in food is undesirable.

How do they affect human health?

OTA is a potent nephrotoxin and causes both acute and chronic effects in the kidneys of all mammalian species tested. The sensitivity of different species varies, but a level of $200 \ \mu g/kg$ in feed over three months is sufficient to cause acute damage to the kidneys of pigs and rats. There are no documented cases of acute OTA toxicity in humans.

13:What is patulin? and its toxic effects?

Patulin is a toxic fungal metabolite (mycotoxin) produced by certain moulds of the genera *Penicillium,Aspergillus* and *Byssochlamys* growing on various food commodities, especially fruit. Patulin exhibits a number of toxic effects in animals and its presence in food is undesirable.

Chemically, patulin is a polyketide lactone. It is a relatively small molecule ($C_7H_6O_4$) and is soluble in water.

<u>Contaminated foods</u>: Patulin occurs most often in apples that have been spoiled by mould growth, or in products made from spoiled apples, such as apple juice, pies and conserves. It has also been found in other fruits, including pears and grapes, in vegetables and in cereal grains and cheese.

a)How does it affect human health?

Most of the information on the toxicity of patulin is derived from animal studies and there is little or no experimental, or epidemiological, data on acute or chronic toxicity in humans. At relatively high doses, patulin is acutely toxic in mice and rats, causing gastrointestinal lesions, distension and haemorrhage in the stomach and small intestine.

14: What is Aacrylamide?:

Some chemicals realesed during cooking or heating related chemicals, such as acrylamide and other chemical contaminants in food such as benzene, dioxins,cet.

Aacrylamide?: Acrylamide is a chemical that can form in some foods during high-temperature cooking processes, such as frying, roasting, and baking. Acrylamide in food forms from sugars and an amino acid that are naturally present in food; it does not come from food packaging or the environment.

How does acrylamide form in food**?:** Acrylamide forms from sugars and an amino acid (asparagine) during certain types of high-temperature cooking, such as frying, roasting, and baking.

15: what is Fiehe's Test? If Honey added with sugar/jaggery how will you detect?

Honey added with sugar/jaggery

Test: Fiehe's Test: Add 5 ml. Of solvent ether to 5 ml. Of honey. Shake well and decant the ether layer in a petri dish. Evaporate completely by blowing the ether layer. Add 2 to 3 ml. Of resorcinol (1 gm. Of resorcinol resublimed in 5 ml. Of conc. HCl.) Appearance of cherry red colour indicates presence of sugar/jaggery.