ANNEXURE

Annexure-1 BIS and AGMARK

1. There are few other existing and closely related food laws, namely

   (a) Bureau of Indian Standards (BIS)

   (b) AGMARK

2. The certification of these food laws in certain food products is mandatory even after a license or registration under Food Safety & Standards Act, 2006 i.e. BIS and AGMARK certification has been made compulsory vide Food Safety and Standards (Prohibition and Restriction on Sales) Regulation 2011, for some food products.

3. Bureau of Indian Standards (BIS)

BIS is the National Standard Body of India established under the BIS Act 1986 for the harmonious development of the activities of standardization, marking and quality certification of goods and for matters connected therewith or incidental there to.

4. Food Products where BIS Certification is Mandatory:

There are few food products which are under mandatory BIS certification along with a license or registration under Food Safety & Standards Act, 2006. The products are enlisted below:

S. No.	IS No.	Product
1.	IS 15757	Follow-up formula -complimentary foods
2.	IS 11536	Processed cereal based complementary foods
3.	IS 1165	Milk-powder
4.	IS 1166	Condensed milk, partly skimmed and skimmed condensed milk
5.	IS 12176	Sweetened ultra high temperature treated condensed milk
6.	IS 13334 (Part 1)	Skimmed milk-powder, standard grade
7.	IS 13334 (Part 2)	Skimmed milk-powder, extra grade
8.	IS 14543	Packaged Drinking Water (Other than Packaged Natural Mineral Water)
9.	IS 13428	Packaged Natural Mineral Water
10.	IS 1656	Milk-cereal based weaning foods
11	IS 3470	Hexane, Food grade

Note: BIS has published two Indian Standards for Packaged Drinking Water namely IS 13428 for Packaged Natural Mineral Water and IS 14543 for Packaged Drinking Water (Other Than Packaged Natural Mineral Water). Both the products are under mandatory certification.

5. It is mandatory for the Food Business Operators to print the BIS logo along with license number on the primary packaging material along with FSSAI logo and FSSAI license/ registration number.

BIS Logo

CML NO .....

6. Food Packaging Materials where BIS Specification is Mandatory:

As per Food Safety & Standards (Packaging & Labelling) Regulations, 2011, the containers made of plastic materials should conform to the following Indian Standards Specification, used as appliances or receptacles for packing or storing whether partly or wholly, food articles namely : —

(a) IS : 10146 (Specification for Polyethylene in contact with foodstuffs);

(b) IS : 10142 (Specification for Styrene Polymers in contactwith foodstuffs);

(c) IS : 10151 (Specification for Polyvinyl Chloride (PVC), in contact with foodstuffs);

(d) IS : 10910 (Specification for Polypropylene in contact with foodstuffs);

(e) IS : 11434 (Specification for Ionomer Resins in contact with foodstuffs);

(f) IS: 11704 Specification for Ethylene Acrylic Acid (EAA) copolymer.

(g) IS: 12252 - Specification for Poly alkyleneterephathalates (PET).

(h) IS: 12247 - Specification for Nylon 6 Polymer;

(I) IS: 13601 - Ethylene Vinyl Acetate (EVA);

(j) IS: 13576 - Ethylene Metha Acrylic Acid (EMAA);

7. The metal containers used for preparation, packaging and storage of food should conform to the following Indian Standards Specification:

(a) IS:20 specification for Cast Aluminium & Aluminium Alloy for utensils or

(b) IS:21 specification for Wrought Aluminium and Aluminium Alloy for utensils.

8. AGMARK

AGMARK is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India. The AGMARK is legally enforced in India by the Agricultural Produce (Grading and Marking) Act of 1937 (and amended in 1986). The present AGMARK standards cover quality guidelines for 213 different commodities spanning a variety of

pulses, cereals, essential oils, vegetable oils, fruits and vegetables, ghee, whole spices, ground spices, ghee, butter, vegetable oils, mustard oil, honey, food grains (wheat)/ wheat products (atta, suii, and maida), gram flour, soyabean seed, benoal gram, ginger, oil cake, essential oil, oils and fats, animal casings, meat and food products and semi-processed products like vermicelli.

AGMARK is a Quality Certification Mark as a third party guarantee to certified quality, which assures that the products conforms to the standards laid down by the Government of India is called Agmark Certification. It is basically a voluntary certification for various agricultural food products but for some products it has been made compulsory vide Food Safety and Standards (Prohibition and Restriction on Sales) Regulation 2011. AGMARK certification assures that the product containing the Agmark is good in terms of quality and produced in hygienic condition thereby fit for human consumption. It is useful both for consumers and producers, marketers and traders. Food products where AGMARK been made mandatory, along with a license or registration under Food Safety & Standards Act, 2006. The products are enlisted below:

S.No.	Product
1.	Blended Edible Veqetable Oils
2.	Fat Spread

AGMARK Certification logo

It is mandatory for the Food Business Operators to print the AGMARK logo along with certification number on the primary packaging material along with FSSAI logo and FSSAI license/ registration number on food items where AGMARK certification is mandatory.

Annexure-II - Common adulterants and Quick Tests for detection of these adulterants

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Oils and Fats	Argemone oil	Take some quantity of oil in a test tube. Add equal quantity of concentrated Nitric acid and shake carefully. Red to reddish brown color in lower (acid) layer would indicate the presence of Argemone oil.	
Milk	Water	The presence of water can be by putting a drop of milk on a polished slanting surface. The drop of pure milk either or flows lowly leaving a white trail behind it, whereas milk adulterated water will flow immediately without leaving a mark.	
Milk	Starch	Add a few drops of tincture of Iodine or Iodine solution. Formation of blue colour indicates the presence of starch.	Iodine solution is easily available in the medical stores.
Milk	Urea	Take a teaspoon of milk in a test tube. Add ½ teaspoon of soybean or arhar powder. Mix up the contents thoroughly by shaking the test tube. After 5 minutes, dip a red litmus paper in it. Remove the paper after ½ a minute. A change in colour from red to blue indicates the presence of urea in the milk.	
Milk	Vanaspati	Take 3 ml of milk in a test tube. Add 10 drops of hydrochloric acid. Mix up one teaspoonful of sugar. After 5 minutes, examine the mixture. The red colouration indicates the presence of vanaspati in the milk.	
Milk	Formalin	Take 10 ml of milk in a tests tube and add 5 ml of con sulphuric acid from the sides of the wall without shaking. If a violet or blue ring appears at the intersection of two layers then it shows presence of formalin.	Formalin enhances the life of milk and thus is added for preservation purpose.
Milk	Synthetic milk	Synthetic milk has a bitter after taste, gives a soapy feeling on rubbing between the fingers and turns yellowish on heating.	

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Milk	Synthetic milk - test for protein	The milk can easily be tested by Urease strips (available in the Medical stores) because Synthetic milk is devoid of protein. Also change of the urease strips indicates synthetic milk.	
Milk	Test for Glucose/inverted sugar	Milk does not contain glucose /invert sugar, if test for glucose with urease strip found positive. It means milk is adulterated.	If it is made synthetically by adding while colour water paint. Oils, alkali, urea and detergent etc. Glucose/ inverted sugar syrup is added in milk to increase the consistency and test.
Ghee, cottage cheese, condensed milk, khoa, milk powder etc.,	Coal Tar Dyes	Add 5 ml of dil. H2SO4 or conc. HCL to one teaspoon full of melted sample in a test tube. Shake well. Pink colour (in case of H2SO4) or crimson colour (in case of HCl) indicates coal tar dyes. If HCl does not give colour dilute it with water to get the colour.	
Sweet Curd	Vanaspati	Take 1 teaspoon full of curd in a test tube. Add 10 drops of hydrochloric acid. Mix up the contents shaking the test tube gently. After 5 minutes, examine the mixture. The red colouration indicates the presence of Vanaspati in the curd.	
Rabdi	Blotting paper	Take a teaspoon of rabri in a test tube. Add 3 ml of hydrochloric acid and 3 ml of distilled water. Stir the content with a glass rod. Remove the rod and examine. Presence of fine fibres to the glass rod will indicate the presence of blotting paper in rabri.	
Khoa and its products	Starch	Boil a small quantity of sample with some water, cool and add a few drops of Iodine solution. Formation of blue colour indicates the presence of starch.	
Chhana or Paneer	Starch	Boil a small quantity of sample with some water, cool and add a few drops of Iodine solution. Formation of blue colour indicates the presence of starch.	

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Ghee	Vanaspathy or Margarine	Take about one tea spoon full of melted sample of Ghee with equal quantity of concentrated Hydrochloric acid in a stoppered test tube and add to it 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 Margarine. 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.
Ghee	Mashed Potatoes, Sweet Potatoes and other starches.	The presence of mashed potatoes and sweet potatoes in a sample of ghee can easily be detected by adding a few drops of Iodine, which is brownish in colour turns to blue if mashed potatoes/sweet potatoes/other starches are present.	
Butter	Vanaspati or Margarine	Take about one teaspoon full of melted sample of butter with equal quantity of concentrated Hydrochloric acid in a stoppered test tube and add to it 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.
Edible oil	Prohibited colour	Take 20 drops of the edible oil in each of the four test tubes. Make 3 different solutions, mixing up 1 part of distilled water, 3 parts of distilled water and 4 parts of distilled water. Add 2 ml of each solution in each of the test tubes and add 2 ml of hydrochloric acid in the mixture of any tube, indicates the presence of prohibited colour in the edible oil.	

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Coconut oil	Any other oil	Place a small bottle of oil in refrigerator. Coconut oil solidifies leaving the adulterant as a Separate layer.	
Whole spices	Dirt, dust, straw, insect, damaged seeds, other seeds, rodent hair and excrete	These can be examined visually	
Black pepper	Papaya seeds	Papaya seeds can be separated out from pepper as they are shrunken, oval in shape and greenish brown or brownish black in colour.	
Black pepper	Light black pepper	Float the sample of black pepper in alcohol (rectified spirit). The black pepper berries sink while the papaya seeds and light black pepper float.	
Black pepper	Coated with mineral oil	Black pepper coated with mineral oil gives Kerosene like smell.	
Cloves	Volatile oil extracted (exhausted cloves)	Exhausted cloves can be identified by its small size and shrunken appearance. The characteristic pungent of genuine cloves is less pronounced in exhausted cloves.	
Mustard seed	Argemone seed	Mustard seeds have a smooth surface Theargemone seed have grainy and rough surface and are black and hence can be separated out by close examination. When Mustard seed is pressed inside it is yellow while for Argemone seed it is white.	Use magnifying glass for identification
Powdered spices	Added starch	Add a few drops of tincture of Iodine or Iodine solution. Indication of blue colour shows the presence of starch.	Iodine test for added starch is not applicable for turmeric powder
Turmeric powder	Coloured saw dust	Add a tea spoon full of turmeric powder in a glass of water. Natural turmeric powder leaves light yellow colour while settling down. Adulterated turmeric powder will leave a strong yellow colour in water while settling down.	Detection of artificial colour.

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Turmeric powder	Chalk powder or yellow soap stone powder	Take a small quantity of turmeric powder in a test tube containing small quantity of water. Add a few drops of concentrated Hydrochloric acid, effervescence (give off bubbles) will indicate the presence of chalk or yellow soap stone powder .	
Turmeric powder	Chalk powder or yellow soap stone powder	Take a tea spoon full of chillies powder in a glass of water. Coloured water extract will show the presence of artificial colour. Any grittiness that may be felt on rubbing the sediment at the bottom of glass confirms the presence of brick powder/sand, soapy and smooth touch of the white residue at the bottom indicates the presence of soap stone. To a little powder of chilli add small amount of concentrated HCl and mix to the consistency of paste, dip the rear end of the match stick into the paste and hold over the flame, brick red flame colour due to the presence of calcium slats in brick powder.	This test is only for earthy material
Chillies powder	Artificial colours	Sprinkle the chilli powder on a glass of water. Artificial colorants descend as coloured streaks.	
Chillies powder	Water soluble coal tar colour	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.	
Asafoetida (Hing)	Soap stone or other earthy material	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.
Asafoetida (Hing)	Starch	Add tincture of iodine, appearance of blue colour shows the presence of starch.	Compound of asafoetida contains starch which is declared on the label. This test is not applicable for compound asafoetida.

Name of Food Article	Adulterant	Simple Method for Detection of Common Adulterants	Remarks
Asafoetida (Hing)	Foreign resin	Burn on a spoon, if the sample burns like camphor, it indicates the sample is pure.	Pure hing burns like aromatic camphor
Spices	Powdered bran and saw dust	Sprinkle on water surface. Powdered bran and sawdust float on the surface.	
Cinnamon	Cassia bark	Cinnamon barks are very thin and can be rolled. It can be rolled around a pencil or pen. It has a distinct smell. Whereas cassia ark comprise of several layers in between the rough outer and inner most smooth layers. On examination of the ark loosely, a clear distinction can be made.	
Cumin seeds	Grass seeds coloured with charcoal dust	Rub the cumin seeds on palms. If palms turn black adulteration is indicated.	
Green chilli and green vegetables.	Malachite green	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	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.	
Saffron	Dried tendrils of maize cob	Genuine saffron will not break easily like artificial. Artificial saffron is prepared by soaking maize cob in sugar and colouring it with coal tar colour. The colour dissolves in water if artificially coloured. A bit of pure saffron when allowed to dissolved in water will continue to give its saffron colour so long as it lasts.	

Annexure-III – Suggestive Annual Surveillance Plan

SUGGESTIVE ANUAL SURVEILLANCE PLAN

S. No.	State specific	Consumption as per level of processing	State specific	Jan to March	April to June	Jul to Sep	Oct	Dec - Jan
1	Andaman & Nicobar		Sea food, spices and condiments, sea food					Sea food including fresh water fish
2	Andhra Pradesh and Telangana	*	spices and condiments along with all types of food items	Cereals and cereal products, seasonal fruits and vegetables, spices and condiments	Pulses, milk, curd, dairy products	Poultry/meat	Cereals and cereal products, dairy products, seasonal fruits and vegetables, edible fats and oils, spices and condiments	Seasonal fruits and vegetables, edible fats and oils, Sea food including fresh water fish, spices and condiments
3	Arunachal Pradesh		All type of food items			Meat/poultry/ eggs		
4	Assam		Tea, coffee				Cereals and cereal products, dairy products, seasonal fruits and vegetables, spices and condiments	Cereals and cereal products, dairy products, seasonal fruits and vegetables, Sea food including fresh water fish, spices and condiments
5	Bihar		All type of food items	Seasonal fruits and vegetables	Cereals and cereal products, milk, curd, chaach		Dairy products i.e. paneer, khoa etc, seasonal fruits and vegetables	Seasonal fruits and vegetables, Sea food including fresh water fish, spices and condiments