

Dairy and Food Process & Products Technology
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Lecture - 15
Hygiene and Other Controls in India

So, we finished in the last class about the FPO that is the typical food product controlling agency right? So, this is under this class there is Dairy and Food Process and Products Technology. So, we are now we will be discussing about the also other factors like hygiene one of the major factor in the quality control or laws governing the food laws. So, there this hygiene and many other factors are associated directly or indirectly to benefit the consumer in terms of the safety and security of the product developed right?

So, FPO is one such organization, AGMARK is one such organization who are given, who authority to certify the product, to certify the process, to certify the manufacturing practice, so all are under that right?

(Refer Slide Time: 01:44)

In order to maintain hygienic production and quality standards FPO has laid down following minimum requirements :

- Location and surroundings of the factory
- Sanitary and hygienic conditions of premises
- Personnel hygiene
- Portability of water
- Machinery & Equipment with installed capacity
- Quality control facility & Technical staff
- Product Standards
- Limits for preservatives & other additives

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So, let us look into that what are the laid down norms about the hygiene right? So, in order to maintain hygienic production and quality standards, FPO that is Food Products Order has laid down following minimum requirements what are they? They are like this; location and surroundings of the factory.

Now imagine you have a food product manufacturing unit in some locality, where the surrounding is so obnoxious, it is so unhygienic, that lot of odd materials which are otherwise very bad, they are associated all around. Then; obviously, may be directly or indirectly it will affect the quality of the finished product from that particular industry.

So, that is why the sanitary and hygienic conditions of the premises are very important. So, that is what the minimum requirement laid down by the FPO. Then personal hygiene; the people who are working in there, their hygiene also has directly or indirectly affected.

Nowadays, if you go to some food industries, since the laws have become or standards have become so, stringent that you will see that most of the people who are handling, who are directly associated with the production line, they are production or control line. So, they I win in even handling also; so they are all taking the personal hygiene, personal care such that the contamination or any kind of impurity from the external source can be minimized. So, the law or standard has to encompass the personal hygiene of the people work working right.

Portability of water; this is again a major drawback of our system, that water which is being supplied to the industry, that the industry has to get it clarified or get it purified, so that it becomes according to the standard or it becomes portable. Portable water should be given to the industry such that, the main focus of the industry is not getting diverted or there is no chance of getting contaminated or getting exploited by the water quality into the product being developed.

So, this is; these are the factors or these are the scenarios which again in the beginning we said policy that policy makers; they should look into that the water supplied to the company, industry is potable water. The industry whether likes or does not; they have or it has to take that potable water and use that potable water, there is no scope that the water will not be portable.

So, if we live it on to the industry in majority of the cases, because of the human humanness of the people that it may or may not be adhere to. So, the portability if it is not there, that will certainly incur some or other kind of quality deterioration into the product right? Then machinery and equipment, with installed capacity; in many cases it has been found that the company X is permitted with machine buying either import or

local, whatever it be, that the certification or permission was given for such and such quantity may be Y kg per hour right?

And the capacity of the machine handling this has to be minimum Y kg per hour, but in many cases this is seen that this is less than Y kg. I am not saying in all the cases in many cases or some cases this is like that. So, the controlling body has to keep eye, has to keep an eye that the machines which are online, which are handling, which are manufacturing the product; that should be at for with the capacity approved or specified right? Quality control and facility and technical staff; again in typical, in particular, in our country, this word that the quality control facility and technical staff; this in most of the cases I say except some very big organizations or multi or those are multinationals.

I am not saying of question that local locals are also not doing; many of them might be doing, but it is also true many of them do not have any quality control or quality assessment space or places and the required equipped or knowledgeable persons who are handling them. In most of the cases, it is seen; if requirement is food technologist, then this is being done by the maybe some chemist or maybe some even lower graded people. And who do not have that much vision about the both quality as well as the impact of the laws. So, this is another weak point of the in the in our country typically; industry level that, how the quality is being assessed or is being controlled by the people associated with them right.

In majority of the cases, the people concerned are not up to the standard or up to the desired level of knowledgeable; so this is another weakness. Product standards; now product standards; obviously, the company who is manufacturing the product will claim that the standard is such and such. Now this FPO as we said is one such organization will certify that yes; the company which has given.

And the standard of the product is claimed by the company and certified by this FPO or similar kind of agencies like AGMARK etcetera right. Then limits for preservatives and other additives. In many case as I we said; the personnel; who are handling or controlling the quality, then in means if they are not at par with the requirement with that with the standard, with the required qualification, then what will happen? We will not understand he or she will not understand the meaning of the limit of the preservatives right?

Limit of the preservative how much is test be a preservative as the other day we said say sodium benzoate. So, how much sodium benzoate has to be given? What is the; what is the standard? What is the accessible limit? What is the approved limit? If this is not known, then how the person will control? How the person will manufacture the standard quality?

Because it is also not advisable, though if the preservative is at par with the approve standard that can be used as much as I wish or the processor wishes; this is based on the standard laid down by the controlling agencies and that cannot violate that quantity. If it is 200 ppm cannot be more than 200 ppm; if it is 20 ppm cannot be more than 20 pmm right.

If it is lower than that nothing like that right and by the by as earlier we have come across that may be jam jelly marmalade came into as fruits and vegetables product right as such jam jellifying marmalades they are high sugar; high sugar or high acid food right? So, high sugar, high acid food it itself is acts itself acts as preservative right? There is as such no need for addition of any preservative, but again it is not only the responsibility of the manufacturer or the standard making agencies; it is also responsibility of the consumer, how consumer is handling that? If you just keep your eye open you will see, that those bottles of jam jelly or marmalade or things like that.

When they are opened and handled in mass; typically in mess or in hostels and in big places like that much community much people who are handling it, you will see that they are not properly handled. Now if they are not properly handled if somebody is using with a spoon, having some water and that water is going into this, then there will be some local extra additional water available. So; obviously, the basic principle will be lost and that may become vulnerable for the organisms to invent and spoil or degrade the product.

So, this is also the consumer who has to understand; who has it is not only the responsibility of the law making people or implementing people or the producer. It is also consumer, who has also to know and who was also to avoid by certain rules and regulations right. I gave the right example that, when it is in mass scale being used that jam jelly marmalade those containers; some people are reusing which some spoon, which has lot of moisture and that moisture is going into the product and intern is affecting the quality.

So, who is responsible for that? Is it that manufacturer or is it the controlling body? It is also the consumer who has to come for or so he has to be educated. So, limit for this preservation and other additives that also has to be known both to the manufacturer in this we are talking; we are talking about the implementing agencies, law implementing agencies like FPO.

So, there people must be knowing it, as well the producer there people must be knowing in; as well I also appeal that the consumer also should keep in mind that has to be handled, that has to be taken in the right way; such that it does not unnecessarily introduced some or other source of getting contamination or getting infected or becoming proven to be infected right?

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Food Products Order (FPO) - What are the food products?

- Non fruit beverages, syrups and sherbets
- Vinegar, whether brewed or non-fruit
- Pickles
- Dehydrated fruits and vegetables
- Squashes, crushes cordials, barley water, barreled juice, and ready to serve beverages, fruit nectars or any other beverages containing fruit juices or fruit pulp
- Jams, jellies and marmalades
- Tomato products, ketchup and sauces
- Preserves, candied and crystallized fruit and peel

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So, if that be true, then let us look into that FPO what are the food products other than those? Non fruit beverages, syrups and servers, then vinegar, whether brewed or non fruit; whatever be, pickles, dehydrated fruits and vegetables squashes, crushes, cordials, barley water, barreled juice and ready to serve beverages, fruit nectars again the nectars right? Fruit nectars or any other be beverages containing fruit juices or fruit pulp.

Now in many countries, it may be that fruit juice meaning absolutely fruit juice; pure fruit juice nothing else is there, but nectar is such a thing, where it allows it permits to add required quantity of may be water right? Required quantity of other materials mostly water; so some dilution is also possible in nectars. So, the moment you are adding

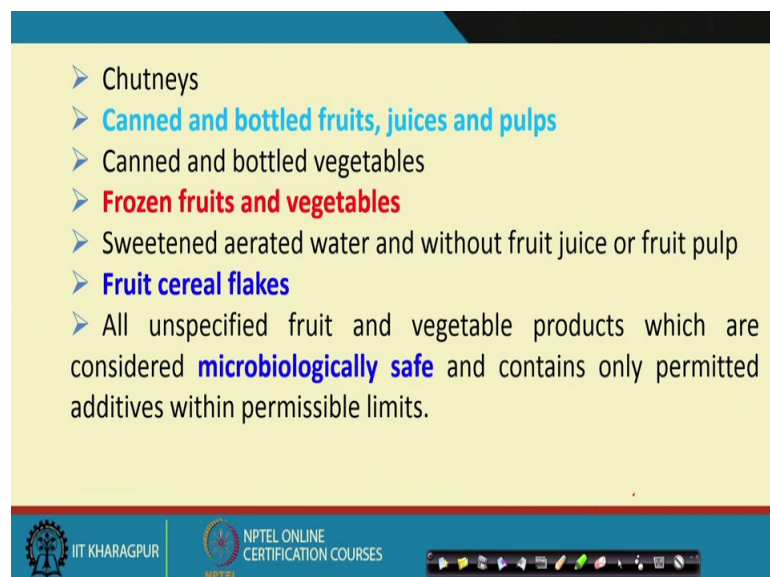
externally, then it becomes your responsibility. Because the manufacture has manufacturer has given you the according to the mandate, according to the guide, according to the laws, according to the order, according to the act it is given.

But you being the consumer, you being the ultimate user, you also do have responsibilities that are we should maintain according to the, that is why in earlier class we said that awareness program or the awareness of the laws and its implementation or if it is not what are the losses, what are the other things which may be phased that should be discussed or there should be known right?

So, other than these jams jelly and marmalades that also come under it. Tomato products, ketchup, sauces, they also come under it. Preserves candied and crystallized fruit and peel; these now preserves this mean that things which are kept for extended life; that is what is the preserve. That the thing which is kept for extended life maybe some preservative is added to it, but the whole thing is called preserve.

Candied and crystallized most of the candies are crystallized right? And fruit peel in many cases like in marmalade; marmalade fruit peel is used. For example, orange peel; orange peel is used for marmalade. So, and that is called orange marmalade and there, this peel when it is being prepared; the way it is being prepared, the way it is preserved; so all these must be act in accordance with the laws in accordance with the guidelines framed by these organizations like FPO right?

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- Chutneys
- **Canned and bottled fruits, juices and pulps**
- Canned and bottled vegetables
- **Frozen fruits and vegetables**
- Sweetened aerated water and without fruit juice or fruit pulp
- **Fruit cereal flakes**
- All unspecified fruit and vegetable products which are considered **microbiologically safe** and contains only permitted additives within permissible limits.

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Then other products which come under the umbrella of this FPO are chutneys, canned and bottled fruit juice, pulps, canned and bottled vegetables, frozen fruits and vegetables, sweetened aerated water and without fruit juice or fruit pulp, fruit cereal flakes, all unspecified fruit and vegetable products, which are considered microbiologically safe and contains only permitted additives within permissible limits.

So, these all come under the FPO under the umbrella of FPO; Food Products Order right?

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Each container in which any fruit product is packed shall specify a **code number** indicating the lot or the **date of manufacture** of such fruit product.

No person can carry on the business of a manufacturer except under and in accordance with the terms of an **effective license** granted to him under this Order (FPO) in **Form B** and shall not use the License number on labels of non-fruit products. **FPO mark** should be printed on the label with **license number**.

The labels shall not contain any **statement, claim**, design or device which is **false** or misleading in any particular concerning the fruit products contained in the package or concerning the **quantity** or the **nutritive value** or in relation to the place of origin of the said fruit products.

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Now, each container in which any fruit product is packed shall specify a code number, indicating the lot or the date of manufacture of such fruit product. As we said this I just showed you. So, here you see that, this product is having the date of manufacture, some number, lot number, batch number, data of manufacture.

And nowadays it is mandatory that it is; if it is a sealed product, then there must be also the date of expiry. The date of expiry is must if it is sealed product right; so, I just showed you one product, just available in canteen. So, from there I brought it and yes there it is the data of manufacturer, that thus the permit permitting or authorizing agency that is also the name is there or certifying agency that name is also there.

So, these things are part of the whole. No person can carry on the business of a manufacturer except under and in accordance with the terms of an effective license

granted to him under the order of FPO. In form B and shall not use the license number on labels of non-fruit products. So, you have a license of food products; may be short some other thing; that is the that is supposed to be made of the fruit, but if you are doing a non-fruit and using the same license, that is not permitted, that is not acceptable.

So, that is against the law; against the order, so that should be kept in mind. FPO mark should be printed on the level with license number. The labels shall not contain any statement, claim, design or device, which is false or misleading in any particular concerning the fruit products; contained in the package or concerning the quantity or the nutritive value or in relation to the place of origin of the said food product right.

So, this things we have to keep in mind that whichever is the entrepreneur that; if suppose a product is being manufactured at a place A; of a of our country and when it is going to be sold in a place like B, for some more other reason, A and B are not in good humor, then unnecessarily the product will suffer for some more other reason from the place it was manufactured date, to the place being consumed at B.

To avoid that this has become a mandatory that the where it is being manufactured, there should not be a part of it right a misleading. That as falls or misleading in any particular concerning the fruit products, contained in the package or concerning the quantity or the nutritive value or in relation to the place of origin of the same fruit products right. So, this should not contain in the manufacture in the shell in the container right?

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Meat Food Products Order (MFPO), 1973 : -
Objective:-

- To regulate production and sale of meat food products through licensing of manufacturers, enforce sanitary and hygienic conditions prescribed for production of wholesome meat food products, exercise strict quality control at all stages of production of meat food products, fish products including chilled poultry etc.
- **Danger** - Meat & Meat Products are highly perishable in nature and can transmit diseases from animals to human-beings.
- **Exclusion** - consumption on the spot like a restaurant, hotel, boarding house, snack bar, eating house or any other similar establishment.

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Then meat products order or meat food products order or MFPO, 1973, the objective was to regulate production and sale of meat food products through licensing of manufacturers. Enforce sanitary and hygienic conditions, prescribed for production of whole sub meat, food products, exercise strict quality control at all stages of production of meat food products fish products including chilled poultry etcetera

And the danger is that if the MFPO is not implemented, then the danger is that the meat and meat products bring highly perishable in nature. And can transmit diseases from animals to human being; this if it is not adhere to, if the laws and orders are not adhere to; then the contamination from the animal to the human being chance is very high; so, that is that danger part.

Some exclusions are there definitely; if it is being consumed in restaurants, hotels, boarding. Houses etcetera then this can be excluded. The reason being they are supposed to take care lot of care such that this kind of contamination is not there.

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Milk and Milk Product order (MMPO) :-
Objective :- To maintain and increase the supply of liquid milk of desired quality in the interest of the general public and also for regulating the production, processing and distribution of milk and milk products.
Who will come under this act?:- Any person / dairy plant handling more than 10,000 liters per day of milk or 500 MT of milk solids (MSNF) per annum needs to be registered with the Registering Authority appointed by the Central Government.
The registration number shall either be exhibited prominently on the side label of any container or be embossed, punched or printed prominently thereon.

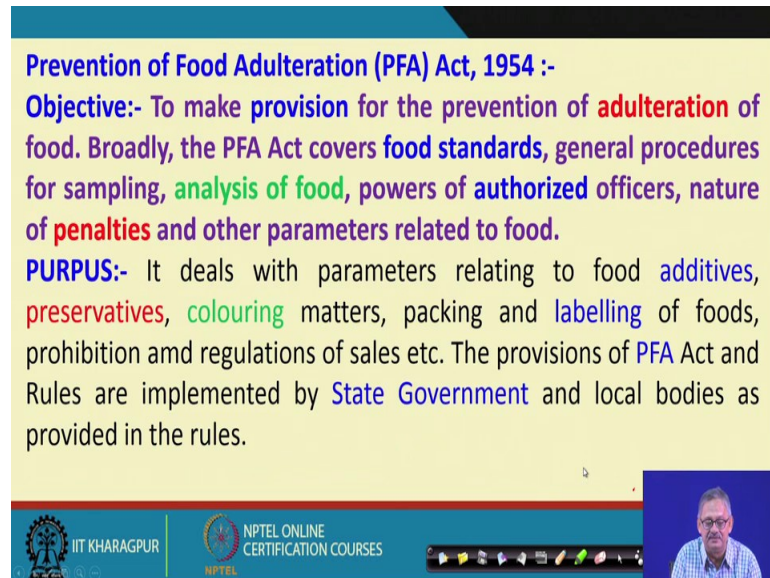
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Milk and Milk Product order; MMPO is their objective is to maintain increased the supplier liquid milk of desired quality in the interest of the general public and also, for regulating the production processing and distribution of milk and milk product.

Who can come under this act? Any person dairy plant handling more than 10000 liters per day of milk or 500 metric ton MT; MT is for metric ton. Of course, this ton has

different connotations. Milk solids that MSNF; 500 metric ton of milk solids, MSNF per annum; needs to be registered with the registration authority appointed by the Central Government. The registration number shall either be exhibited prominently on the side label of the container or be embossed, punched or printed predominantly thereon or prominently thereon.

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Prevention of Food Adulteration (PFA) Act, 1954 :-
Objective:- To make provision for the prevention of adulteration of food. Broadly, the PFA Act covers food standards, general procedures for sampling, analysis of food, powers of authorized officers, nature of penalties and other parameters related to food.
PURPUS:- It deals with parameters relating to food additives, preservatives, colouring matters, packing and labelling of foods, prohibition and regulations of sales etc. The provisions of PFA Act and Rules are implemented by State Government and local bodies as provided in the rules.

Prevention of Food and Adulteration Act or PFA, 1954; the objective was to make provision our time is almost over I am just going through it is like this, that the objective is to make provision for the prevention of an adulteration of food.

Broadly the PFA act covers food standards, general procedures for sampling, analysis of food, powers of authorized officers, nature of penalties and other parameters related to food is being controlled by the PFA or Prevention of Food Adulteration. Purpose is it deals with parameters relating to food additives, preservatives, coloring matters, packaging labeling of foods; prohibition and regulation of sales etcetera. The provisions of PFA Act and rules are implemented and by State Government and local bodies as provided in the rules ok.

Hopefully, we have come to the end and we thank you for the attending the class.

Thank you.