

Episode 10

Packaged Indian Food

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Characters

Father

Manav : Son

<i>Sound of washing utensils...crashing of utensils also...</i>	
Manav (<i>to himself</i>)	Oh...ho...my hands have become so slippery...these utensils just keep slipping out of my hands.
Father	Manav...what did you break?
Manav (<i>in an irritating tone</i>)	Nothing, daddy... till now...why did the maid have to sprain her ankle today only...just when mummy had to go...
Father	At least she prepared our breakfast...And she will not be coming for the next two days, my dear.
Manav (<i>still more irritated</i>)	What...??
Father	Yes, son...she just called up to say that the sprain was bad and so she would not be coming for the next two days.
Manav	Daddy...I am sure mother must have asked her to take a few days off...
Father (<i>Laughing</i>)	Why would she do that...? Doesn't the maid take off-days when your mummy is here?
Manav	Okay...but then I don't have to wash the utensils...
Father	So...now you realize how much work mummy has to do when the maid does not turn up...and when she asks you for some help you keep making irritating excuses...
Manav	But then why don't you wash the utensils...why have you asked me to do this job?
Father	Fine, you do the sweeping and mopping and I will do the utensils...
Manav	No...no...no...my dear daddy...I was just joking.
Father (<i>laughing</i>)	It's good that you still have some humour left...
Manav	Daddy...I am done with the utensils...
Father	Okay...then come and help me with the sweeping...
Manav	No...no...no...just two more cups left...
<i>Both father and son laugh</i>	
Manav	Daddy... I have already started feeling so hungry...what are we going to have for lunch, daddy?
Father	Shahi paneer and vegetable biryani...
Manav	Come on daddy...this is such a bad time to crack such jokes...
Father	I am not joking, son...
Manav	So, are we ordering from somewhere?

Father	No...we will make it here...you and me...
Manav <i>in a complaining tone</i>)	Okay...so now you will make me cut onions...
Father	<i>(Laughing)</i> No, yaar...okay I am also done, now come on let's wash our hands properly with soap and then we will start preparing lunch.
Manav	Oh no...now if we start preparing lunch it will take us...
Father	...just five minutes...now don't stand there with a grumpy look on your face...wash your hands, put the plates and glass on the table and sit quietly.
<i>Sound of washing hands...and father working in kitchen, sound of utensils being picked up and stove being lit...chair being pulled back...</i>	
Manav	Oh...super daddy is going to make food super fast...let's see...
Father	Here you are...shahi paneer and vegetable biryani...
Manav	What...!!! Daddy...oh...now I get it...you must have ordered it beforehand and quietly kept it in the kitchen...isn't it...you are so clever daddy...
Father	No sir...I did not do anything of the sort...here it is, see...packets of ready-to-eat shahi paneer and vegetable biryani.
Manav	In these packets?? Don't make fun of me daddy...this looks like it has been cooked in the kitchen...and that too fresh...
Father	Well, it has definitely been cooked in the kitchen...but somewhere else...it is not fresh...
Manav	...ummm...but it is tasty daddy...
Father	Yes, it is...
Manav	...and the biryani looks so yummy...how do they do it daddy?
Father	Well, basically there are two technologies involved here...one is processing of food and the other is packaging.
Manav	Must be latest technologies, isn't it?
Father	Well, not exactly...food processing has been practised from prehistoric ages...you see slaughtering, fermenting, sun drying, preserving with salt, all are different ways of processing food so that it can be kept for sometime...even various types of cooking such as roasting, smoking, steaming, and salt-preservation...
Manav	Just like mummy prepares pickles...
Father	Exactly...generally vinegar is used to make the pickles because it is an acid solution that kills most bacteria...
Manav	...and then we tightly close the bottle so that air and moisture don't enter...
Father	Yes, even today basically the process is the same...
Manav	What...vinegar is added and then...
Father	No...no... now several other technologies have been developed to preserve food items in almost fresh state for a long time...like spray drying, freeze drying or ultra heat treatment. The basic requirements are that moisture should be removed and bacteria should be killed.

Manav	Okay...so basically the food is dehydrated...
Father	Right...it is dehydrated, but temperature, moisture and oxygen affect the shelf-life of the dehydrated food also...
Manav	How?
Father	Well, high moisture affects the crispiness of the food making it soggy. Likewise, oxygen causes oxidation which could lead to a bad smell or spoiling of taste of the food.
Manav	Okay...but all this can be avoided by proper packaging, isn't it?
Father	Yes, to a large extent...by the way keep eating your food otherwise it will get cold...
Manav	I am eating daddy...this vegetable biryani is so yummy...should we get a packet of malai kofta for dinner?
Father	No...no...for dinner we will make fresh rice and dal...we should not have too much of packaged food when we can make fresh food. This afternoon I made because we were both tired with all the cleaning up.
Manav	Ummm (<i>in a complaining tone</i>)...okay fine...(after thinking for a while) ...but daddy you said packaging protects the food from getting stale...so the packaging material should be really strong...
Father	Yes, the packaging material should be strong enough to resist any shock and vibration during transportation. It should also not be too heavy, besides it should not be costly making the food item highly priced. Of course, it has to be clean and hygienic as well.
Manav	This means that the best packaing materials are metals cans and plastic containers?
Father	Uhh...yes, because they are air-tight and light proof and prevent the entry of moisture and oxygen.
Manav	And they are also easy to handle during transportation...
Father	Yes...but not all types of food items can be packaged in cans and plastic containers. So manufacturers also use semi-rigid packs like carton and bag-in-box which maintains the freshness of the product till it is opened.
Manav	Daddy...mummy uses aluminium foil to pack your lunch...so aluminium foil can also be used as a packaging material?
Father	Of course...several other materials like metallised polyester, low density polyethylene, jute bags etc are used as packaging materials.
Manav	So after packaging these food items stay fresh for a long time, isn't it? For example...this packet says (<i>reading from the packet</i>) "fresh before six months from date of packaging".
Father	Yes...the shelf life will depend on several factors like the type of food product, type of processing done and the type of packaging used.
<i>Phone rings, Manav's mother is on the line.</i>	
Manav	I am fine mummy...how is nanaji now?...studies...mummy I was washing utensils and dusting everything for more than an hour...no,

	she came in the morning and then sprained her ankle and went away...well, we are having shahi paneer and biryani...yes, we made it...not joking mummy...first we dehydrated it, then we freeze dried it to increase its shelf life... <i>(laughing)</i> ...hahaha...I will tell you when come back...okay bye mummy. <i>(Turning to his father)</i> I totally confused her... <i>(both laugh)</i> ... But daddy, isn't milk powder that is given to babies also a type of processed food?
Father	Yes it is...and you know during the 1950s all the baby milk food was imported. So India requested some multinationals to set up manufacturing facility here but they turned it down on the pretext that India did not have enough cow's milk and that the buffalo milk has too much fat and so could not be easily digestible for babies.
Manav	Then what did india do?
Father	Well, scientists of the Central Food Technological Research Institute or CFTRI, which is a laboratory of the Council of Scientific and Industrial Research, developed a process to manufacture baby food from buffalo milk itself.
Manav	That's great! And the milk was easily digestible for babies?
Father	Yes, it had excellent digestibility. In fact, it was the first infant food formula based on buffalo milk in the entire world. It successfully broke the monopoly of multinationals.
Manav	Great work by CFTRI scientists!
Father	Indeed, Amul baby food based on the institute's technology became a household word in India and basis for the flourishing baby food industry in the country. This achievement alone saved foreign exchange worth crores of rupees for our country.
Manav	Oh...so you are talking about Amul...
Father	Yes...indeed...not only that, CFTRI scientists have also developed several food processing formulations for foods such as spices, potato chips, fish cutlets, biryani mix and so on...

Voice Over

The Central Food Technological Research Institute or CFTRI was born out of the realization that the key to the country's food security lay in utilizing science & technology to conserve & preserve and process & distribute the available food resources. Today, the CFTRI exclusively deals in foods and food processing, and is today a major international player in this sector. It has developed post-harvest technologies for efficient protection, conservation and processing of agricultural produce with focus on developing export-oriented value-added products from horticultural and plantation crops. CFTRI scientists have developed food supplements like Energy Food, Indian Multipurpose Food, Miltone, Bal Ahar and several weaning foods, which have been the most preferred foods in relief activities throughout the developing world. It has also come up with formulations of convenience mixes for preparing traditional Indian snacks; flavour concentrates for manufacturing aerated beverages such as orange, lime and cola, the indigenous technology became popular in India with the cola drink "Double Seven"; simple processes for increasing shelf-life of fruits and vegetables; enhancement of the market and export value of coffee, tea, spices and other plantation produce. CFTRI has also come up durable packaging that increases the shelf life of food products and is also inexpensive. For example, use of agricultural waste products like pigeon pea twigs and fibreboards, reusable fish containers and cushioned containers for eggs. The plastic pouches used for packing milk and edible oil are also based on CFTRI technology.

Manav	Oh...I did not know that the packaged milk that we take everyday has been made possible by CFTRI. CFTRI scientists are doing a great job.
Father	Yes indeed...but there is another organisation called the Defence Food Research Laboratory or DFRL under the Defence Research and Development Organisation that is working to provide convenient food packets for soldiers working in very difficult areas.
Manav	Yes daddy...I always wonder how our soldiers who are living on mountains or in places like the Siachen Glacier get their food. I am sure there are many such places where it is not possible for soldiers to cook food.
Father	Yes there are many soldiers posted in extremely difficult areas where not only cooking food but also providing food items on a regular basis is difficult.
Manav	Yes daddy...many areas are completely buried under snow for the entire year...there are also far-flung mountainous regions with extremely hostile weather and hardly any transportation facilities...so what happens to the food requirements of the soldiers posted there?
Father	That is exactly what the DFRL has been working on. They have indigenously developed technologies to produce many ready-to-eat, quick and instant foods with longer shelf life.

Voice Over

The Defence Food Research Laboratory or DFRL was established in Mysore on 28th December 1961 under the DRDO to fulfill the food requirements of the Indian Army, Navy, Air Force and paramilitary services. Their aim is to design and engineer lightweight, convenient packed food with longer shelf life under varying climatic conditions. Scientists at DFRL have come up with several solutions such as chapaties, potato parathas, and mutton pickles that stay fresh for 6 months, high-protein snacks, fruit bars and instant carrot halwa mix that stay good for 9 months, chicken pulao, fruit juice powder, precooked dehydrated dal and curries, instant khichadi, kheer, basmati rice and upma mix with a shelf life of as long as one year. In a latest development DFRL has come up with a technology by which a variety of vegetables like cauliflower, cabbage, beetroot, potato, sweet potato, sponge gourd, radish, and French beans are preserved without any thermal treatment making them safe from microorganisms and thus giving them a shelf life of 14 to 28 days. It has also developed a biodegradable packaging material for package food as its products are often used in high altitude areas like Himalayas and where the packaging material may cause environmental pollution.

Manav	So that means the Indian soldier is quite well provided for as far as the meal requirements are concerned.
Father	Yes indeed. You see, soldiers wherever they are require more of healthy nutrition. And when they move on to inhospitable terrains where survival itself is difficult then their food requirements become very specialized.
Manav	True, and if a soldier in such a place is not sure about the next meal how can he concentrate on securing the country's borders and keep a sharp look out.
Father	Yes...you know the DFRL has developed a ration pack that can be consumed readily after little warming. The pack consists of chapaties, sooji halwa, vegetable pulao, potato peas curry, chocolate bar and tea. Items like spoon, tissue paper, matchbox, specially designed foldable stove and fuel tablets for warming the food are also included. The ration stays fresh for one year.
Manav	Interesting...so the soldier does not need a proper kitchen to cook food...everything is provided... but daddy supposing for some reason the stove does not work...then...
Father	DFRL has an answer for that too...they have developed a self-heating ready-to-eat food packet. This has three compartments—one for food, the other containing a special liquid and the last containing a powder. By connecting the liquid and the powder compartments, heat is generated due to chemical action, which is transferred to the food compartment and the food is ready to eat in a few minutes.
Manav	How very interesting.
Father	Similarly, they have developed an operational ration pack for tanks and armoured vehicles where soldiers may have to survive in closed

	conditions for two-three days. The first and second day ration packs weight 2 kg each and provide 4000 calories while the third day ration weighs 1.5 kg and provides 3000 calories.
Manav	The same difficult situation is with those soldiers who are at high altitudes like Siachen and Kargil, isn't it daddy?
Father	Yes...and they have peculiar problems too...for instance, they suffer from acidity and feel their stomach always full. So they lose appetite, lose weight and face health problems. So scientists at DFRL have come up with appetizer foods and drinks that can be consumed 30 minutes before a meal to improve appetite.
Manav	Oh...one must appreciate the tough conditions in which our soldiers had to fight during the Kargil war.
Father	Yes, and you know...DFRL processed and supplied 50,000 survival rations and 30,000 ready-to-eat meal packets to the Army during the Kargil operation at a very short notice of only 48 hours.
Manav	But daddy, the technologies that DFRL has developed can be used for other operations also?
Father	Yes indeed...DFRL has also supplied pack rations for Antarctica expeditions, several mountaineering and rowing expeditions and their processed food has also come in handy during natural calamities like Latur and Gujarat earthquakes, Malpa and Chamoli landslides and the Orissa cyclone.
Manav	What about people like us?
Father	Yes...many of the defence technologies related to processed food and packaging have been transferred to the civilian sector too.
Manav	Daddy...such great food today and even more important, very interesting information you have given me.
Father	Yes...and now my dear friend...let's get ready to wash the utensils once again...
Manav	<i>(Loudly)</i> No problems, Sir...if the soldiers can survive in such harsh conditions, I can also survive 2-3 days without our official cook... <i>(in a requesting tone)</i> ...but daddy...let's have malai kofta for dinner...please...
Father	<i>(Laughing)</i> We will see about that...now let's get to work.