HOW TO REDUCE WASTE IN FOOD MANUFACTURING

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Abstract - Every year, food manufacturing units waste food up to 30% that needs discarding or intended to be discarded—which can be utilizable again under alternative ways. Usually,readymade food meals end up excessive food waste because of the specified quantity or food is now compromised due to mechanical fault. Some foods have organic residues which cannot be re-useable so they have to be discarded. This issue has been given a voice, at some part of the world it is heard and considered as an issue and at some part of the world no one bothers to even talk about it.\

Keywords - Waste Management, Manufacturing, Food processing, Packaging.

I. INTRODUCTION

Food waste is discarded food or food that contains residues that cannot be utilizable anymore. It happens in all the process of food production, processing, packaging and at consumer end so basically, food waste is everywhere from food manufacturing facilities to consumer ends. Food retailers, food consumers all are part of food waste—billion pounds of food is being wasted every year around the world where a first grader is eating half of its lunch, Maria from that small town doesn't like beans so she threw it away daily at lunch. In farm food is being picked but Arthur didn't like few blemished apples, he threw them in bin instead of giving them away or even selling them out. Sometimes, we don't like a certain food which becomes a food waste— it happens with all sorts of reasons. The food manufacturing sector is working hard to resolve this issue yet; a lot is needed to be done. They have achieved some results so far but that's not enough.

II. CAUSES OF FOOD WASTE

There is a variety of waste being produced at food manufacturing factories in the form water waste, solid waste etc. There are other forms of waste produced at these facilities but we will stick to food waste. There are basically different kinds of food waste which we are intentionally and unintentionally generating. In developed countries, food about 120lb per person per year is being squandered while in under developed countries, it is being lost at food production.

2.1Production

In developing and advanced countries which functions either commercial or industrial agriculture—food waste can occur at most stages and in abundant. The amount of food wastage is unknown but is highly significant as compared to the food being wasted in under developed countries. It occurs during the production. There could be many reasons of food wastage such as fault of machinery, residues that cannot be reused, blemished food or excessive food that is still in less quantity I-e; edges of cookie dough, bread crumbs etc. Some food is lost due to wrong temperature. At farms, sometimes, natural disaster happens and food is wasted such as storms and heavy rain. Some crops cannot withstand the pressure of heavy rain and storm so, food is lost in that way. Pest infections is also one of the cause because if primarily measures are not taken before hand—can cause great damage to crops. There is also a possibility where a harvester cannot descry between a ripe and immature crap resulting in food waste because a harvester will not leave a crop there (which can be used as fertilizer) — Economics factors can also cause great damage to food such as regulation and quality standards.

2.2Food Processing

Food loss continues to happen after the initial stage because in food processing there are different factors which are involved in food wastage such as environmental and economical. Environmental factors are those factors which are totally natural because some countries have different weather conditions as compared to other one. In some countries, temperature rises from 30 degrees to 50-60 degrees that contributes the food loss because some food cannot be stored at such high temperature.—which results in generation of pests and bacteria hence the food loss. Humidity is also one major factor that bequeaths the food loss.

2.3Retailing

Packaging protects food from damage when food is being transported from warehousesto retailers. It helps in preserving freshness when arrived but sometimes, food got contaminated as the retailer cannot identify the expired food albeit the date being mentioned on it. This leads to misunderstanding at the consumer end because he will probably throw food away because food is not fresh or how bad it looks. Mishaps also contribute in food loss because of strict quality regulation at retailer's end. Any finished product looking slightly blotch will be discarded off immediately although the food is still edible.

III. CONSUMPTION

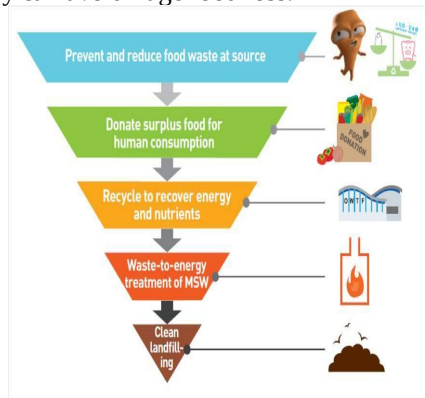
Food in tremendous amount is discarded at consumer end because of discoloration, over cooked or decayed. Sometimes, it is burnt or it is left for too

long so inedible; sometimes, no one is willing to eat leftovers or food is stored for inappropriate time which makes it inedible due to decomposition, redundant buying of food, over preparation and reluctant to consume leftovers are the prime factors of food wastage. Consumers always want fresh food on the table and they do not compromise over this which why leftovers, excessive food is always discarded off.



IV. SOLUTIONS

According to the Food Waste Alliance it is estimated that up to 30% of food go wasted which also includes organic residues such as carrot or potato peels because these skins cannot be used in any way— it has to be discarded off or else it will decompose and will be a home to microorganisms which we are unaware of. Food waste is a now becoming a huge issue when the undeveloped areas are already deprived of basic necessity such as having meal three times a day. To curb this problem, food producers can play a huge role in minimizing this issue, a lot has been done but that is not enough and still this issue is not getting any better attention. Today it is 30% of all the food grown worldwide which gets lost. Tomorrow it will reach to 60% which is way worse than today. Getting media attention is one key solution to raise awareness for this issue. Environmentalists and food manufacturers can play pivotal role in curbing this issue and to provide solutions to it. Here are few solutions if followed properly can avoid huge food loss.



4.1Imperative measures and media

First and foremost step is to raise awareness about food loss is important. It will minimize the issue when retailers, consumers and food producers take it personal responsibility to avoid food waste. There should be proper campaigns to educate people of all the classes to not waste food. This will somehow reduce the problem and the excessive food can be used under alternative ways.

4.2Improve Packaging

Packaging plays a vital role in ensuring the safety of food quality in storage and at home. We cannot reduce the packaging as it will spoil the food quality and perseveres. So, improving food quality is the main idea in order to avoid food loss. To avoid further wastage, clearer expiration date are written on the package and how to freeze/cook food in better ways as to not ruin the food quality. These steps will ensure food safety and less food will go in waste.

4.3Provide better consumption education

Sometimes, Loss of food also happens at consumer's end we just cannot always blame food producers for food loss. Consumers tend to look for food that is fresh and not look stale. If the consumer found something not appealing, food is immediately discarded off so look does matters. Proper education is necessary to minimize the problem and to start if off, food manufacturer can play important role in it. They can educate them about food loss and how to avoid it. This will help both manufactures and consumers to curb this issue. Retailers are also given proper training to save food. This includes food reduction, proper utilizing of food and other important practical suggestions which will be later on implemented by them.

4.4Landfills and Green housing

Organic residues that are unable to utilize all it's used as landfills in green housing where they decompose and generate methane as greenhouse gas. It is important for green housing to reduce air pollution by using it as alternative.This rotten waste can also be utilized as fertilizer which is essential for soil fertilizing.

4.5AnimalFeed

A study done in 2009 shows that 20 times more Carbon dioxide can be saved by feeding food scrapes to domesticated animals. Food scrapes such meat, fish, fruits and vegetable's skin are the discarded off yearly at large scale. These can be used under alternative motives other than human consumption. Bread crumbles and other cereals can be used as feed for chicken. In both ways— we are helping our environment and avoiding food waste as well as providing for animals.

Improve forecasting efficiency

Numerous manufactures pointlessly squander crude fixings due to wrong estimating. They accept they have to deliver a specific number of items and, accordingly, arrange enough crude fixings to satisfy these requirements. Be that as it may, when they end up requiring less, perishable products go to squander. With better and more precise anticipating models, sustenance makers can invest less energy speculating and additional time amplifying the fixings they have.

4.6Be Conclusive about Portion sizes

One of the least demanding approaches to decrease sustenance squander is to check divide measure. Sustenance maker Duncan Hines gives an ideal case of what this resembles. Realizing that the majority of their cake blends are much too extensive for an individual or little family, they turned out with another line, known as Duncan Hines Perfect Size Cakes to fulfill a more extensive statistic that was already disposing of as much as half of a heated cake.

CONCLUSION

We conclude from this report that how food wastage is a loss to us and our environment. Billion pounds of food discarded off rather than utilizing it in other means. If we take imperative measures we can save a lot of money, energy and what not. We can give excess to food to needy which will help them and also, we won't have to worry about the lost food. To curb this menace we need to work in teams and effectively put our efforts and time to save this planet earth form huge loss.

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