





**Figure 1.** Additives in Packed and Canned foods

## II. NEED FOR ADDING FOOD ADDITIVES:

Additives provide protection against food spoilage during storage transportation, distribution or processing. Food additives are used for the purpose of maintaining or improving the keeping quality, texture, consistency, appearance and other technological requirements. Food additives do not include use of vitamins, minerals, herbs, salt, spices, yeast, hops, starter cultures, malt extract etc<sup>4-6</sup>. Many foods, particularly those with high moisture contents, do not keep well. All foods are subjected to microbial attack. Fats or oily foods become rancid, particularly when exposed to humid air. The conversation of the quality of foods against agents causing such deterioration of food requires the addition of preservatives. Additives are also used to colour foods, add flavour, impart firmness, and retard or hasten chemical reaction in food<sup>7</sup>. The use of food additives is to maintain the nutritional quality of food, to enhance stability with resulting reduction in waste, to make food more attractive, and to provide efficient aids in processing, packaging and transport.

### 1.2 Classification of Food Additives:

Food additives are classified on the basis of their functional use and are grouped as:

**Preservatives:** (E Number 200-299) Preservatives aim to prevent the growth of micro-organisms which could cause food spoilage and lead to food poisoning;

extend the shelf-life of products, so that they can be distributed and sold to the consumer with a longer shelf-life.

**Colours:** (E number 100-199) Restore original appearance of the food which is lost during heat processing or storage. Uniformity of colour as a result of natural variations. It intensify colour as a result of natural variations. It protect light-sensitive vitamins. It impart attractive appearance to foods. It serve as visual indication of foods quality.

**Artificial sweeteners:** The substances that sweeten food, beverages, medications, etc., such as sugar, saccharine or other low-calorie synthetic products.eg Saccharin , Aspartame

**Acids:**(E number 300-399)Food acids are added to make flavours “sharper”, and also act as preservatives and antioxidants. Common food acids include vinegar, citric acid, tartaric acid, malic acid, fumaric acid, and lactic acid.

**Antioxidants :** ( E number300-399) Antioxidants are used as food additives to preserve food for a longer period of time. Antioxidants act as oxygen scavengers as the presence of oxygen in the food helps the bacteria to grow in the food. In the absence of antioxidant food additive oxidation of unsaturated fats takes place rendering to foul smell and discoloration of food.

**Flavours :** ( E number 600-699) Flavourings are added to foods in order to impart taste and or smell. The natural food flavours which are derived from herbs, spices and substances having an exclusively sweet, sour or salt taste. Flavour enhancers : Flavour enhancers are used to enhance the existing flavour in the food. Flavour is the sensory impression of food or other substance, and is determined primarily by the chemical senses of taste and smell.

**Nutrient Supplements** When foods are processed, there may be loss of some nutrients and additives may be added to restore the original value.

**Emulsifiers:** ( E number 400-499) It also allow water and oil to remain mixed together in an emulsion, as in mayonnaise, ice cream, and homogenized milk

**Stabilizers:** ( E number 400-499) It is added in the food to smoothen the texture of the food & give a definite body to the food. Food stabilisers are added in relatively small amount which aggravate the effect of emulsifiers. "Stabilisers are substances or chemicals that allow food ingredients, which do not mix well, to remain in a homogenous state after blending."

**Thickening and gelling agents. :** ( E number 400-499) Thickening agents, or thickeners, are substances that are added to food preparations for increasing their viscosity without changing other properties like taste. When a food thickener or a thickening agent is added to beverage, it absorbs the fluid and the fluid thickens.

### 1.3 Harmful Effects of Food additives on Human Health:

The increasing demand for ready-to-eat fresh food products has led to challenges for food distributors regarding the safety and quality of their foods<sup>8-9</sup>.

1. Artificial Food Colours can cause allergies, asthma, hyperactivity; possible carcinogen.
2. Nitrites and Nitrates can develop into nitrosamines in body, which can be carcinogenic.
3. Sulphites (sulphur dioxide) can cause allergic and asthmatic reactions.
4. Sugar and Sweeteners can cause obesity, dental cavities, diabetes and hypoglycaemia, increased triglycerides (blood fats) or Candida (yeast).

5. Artificial Sweeteners (Aspartame and Saccharin) can cause behavioural problems, hyperactivity, allergies, and possibly carcinogenic. The government cautions against the use of any artificial sweetener by children and pregnant women.
6. MSG (monosodium glutamate) can cause common allergic and behavioural reactions, including headaches, dizziness, and chest pains.
7. Preservatives can cause allergic reactions, hyperactivity, possibly cancer-causing; BHT may be toxic to the nervous system and the liver
8. Artificial Flavours can cause allergic or behavioural reactions.
9. Salt can cause fluid retention and blood pressure increases.

### III. FOOD ADDITIVES CAN CAUSE REACTIONS:

For most people, additives are not a problem in the short term. However, 50 of the 400 currently approved additives in Australia have been associated with adverse reactions in some people. Some food additives are more likely than others to cause reactions in sensitive people. It is often the additives that are used to give a food a marketable quality, such as colour, that most commonly cause allergic reactions. Some of these hypersensitive reactions include Digestive disorders diarrhoea and colicky pains, Nervous disorders hyperactivity, insomnia and irritability, Respiratory problems asthma, rhinitis and sinusitis, Skin problems hives, itching, rashes and swelling. It is important to realise that many of the symptoms experienced as a result of food sensitivities can be caused by other disorders. Some common food additives that may cause problems for some people include: Flavour enhancers monosodium glutamate

(MSG) Food colourings tartrazine, yellow, sunset yellow cochineal Preservatives: benzoates, nitrates, sulphites Artificial sweetener and aspartame.

#### IV. DISCUSSION AND CONCLUSION

This literature work has examined the various effects of food additives on man. Synthetic food additives react with the cellular component of the body leading to the various food disturbances (effects). If we must use food additives, because of their advantages, they should be the natural ones which have minimum effects and those that are generally recognized as safe (GRAS) and in the case of those not generally recognized as safe (Non GRAS), the acceptable daily intakes (ADIs) should not be exceeded. To minimize the risk of developing health problems due to food additives, one should avoid the foods containing these additives. Before purchasing the canned food, its ingredients should be checked. Purchase only organic foods, which are free from artificial additives.

#### V. REFERENCES

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