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# Principles of Food Preservation

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## SUMMARY

Foods are organic substances which are consumed for nutritional purposes. To ensure food and nutritional security of more than 9 billion people is a challenging task for the entire world. To feed that much population we need to increased production of agricultural and animal products. Preservation of food is equally important as increased in production. 20-30% of horticultural produced is lost annually due to inadequate handling of post-harvest products. Such loss in terms of monetary value goes to about 7,000 crores per annum. This loss of great magnum not only robs the labour and resources of the farmers but also regurgitates a big profit of the farmers. Managing post-harvest losses is very much important, preservation of produce is one of the important way to reduced and control the post-harvest losses. Preservation refers to the technique of extending storage life of the produce without deterioration in edible quality for its future use. Due to preservation the product can be made available during off season. The food product can be supplied to areas where such foods are not grown. Preservation is based on minimizing damage by spoilage causing agent such as enzymes, moulds, yeast and bacteria.

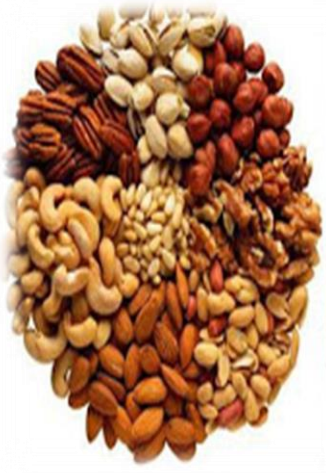
## INTRODUCTION

When food is available more than the present use, it is preserved for future consumption. Foods such as fruits and vegetables have a short growing season and preservation makes them available for use throughout the year and avoids wastage of surplus crops. Food preservation involves preventing the growth of bacteria, yeast, fungi and other micro-organism. It is the process of preventing of decay or spoilage of the food, treating and handling food to stop or slow down the loss of quality, edibility and nutritional value. Food preservation helps in increasing the self-life of perishable foods, making the seasonal food available throughout the year. It add variety to the diet, saving time by reducing preparation time and energy. Preservation decreasing wastage of food by preventing decay or spoilage of food and also improve the nutrition of the population. Preserved foods help people to bring a variety in the diet, thereby decreasing nutritional inadequacies. With the advent of research, many methods of food preservation such as physical, chemical, microbial, radiation, refrigeration, etc., have been developed.

### Principles of food preservation:

### 1) Prevention or delay of microbial decomposition-

- By keeping out microorganisms.
- By removing microorganisms.
- By hindering the growth of microorganism.
- By killing microorganism.



It is well known fact that microbes are everywhere. The dust and dirt adhering to the raw material contain microorganisms and by applying various pre-treatment/ cooking methods we prevent the entry of micro-organism. This is done by removing air, water (moisture), lowering or increasing temperature, increasing the concentration of salt or sugar or acid in foods. If you want to preserve green leafy vegetables, you have to remove the water from the leaves so that micro-organisms cannot survive. You do this by drying the green leaves till all the moisture evaporates. Number of microorganisms can be reduced considerably by steps include- Washing, Trimming ingredients, Discarding dirt, Filtering, Centrifugation, Sedimentation etc.

### 2) Prevention or delay of self-decomposition of food

- By inhibiting or inactivating enzymatic activity.
- By preventing or delaying the non-enzymatic chemical reactions.


Enzymes found in foods can be inactivated by changing their conditions such as temperature and moisture, when you preserve peas, one of the methods of preservations is to put them for a few minutes in boiling water. This method also known as blanching inactivates enzymes and thus, helps in preserving the food.

### 3) Prevention or damage by insects, animals and mechanical damage

By storing foods in dry, air tight containers the insects, worms or rats are prevented from destroying it. Warm humid environment promote insect growth, although most insects will not breed if the temperature exceeds above 35°C or falls below 10°C. Many insects cannot reproduce satisfactorily unless the moisture content of their food is greater than 11 per cent. The presence of insects and pests and their excreta in foods may render consumable loss in the nutritional quality, production of off-flavours and acceleration of decay

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