

# Household Food Security in Timor-Leste through Local Food Preservation Practices

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## INTRODUCTION

According to the FAO/WHO, household food security exists when members, at all times, have physical and economic access to adequate, safe, acceptable, and nutritious foods to meet their daily requirements and food preferences for an active and healthy life. The preservation of post-harvest surpluses makes local staples available and affordable even during the off-seasons. Many Timorese families, particularly in the rural areas, do not have access to consistent electricity, let alone modern food preservation technology such as refrigeration. Traditional food preservation practices can be used to augment and fortify a Timorese diet when access to markets is impossible and income is scarce. Food preservation practices can ensure the presence diverse nutrients (vitamins and minerals) in a daily diet, even during the lean/hungry season when agricultural households are waiting for the maize or rice harvest. Food preservation practices not only extend the lifespan of Timorese produce, but also promote food security and food variety for Timorese livelihoods.

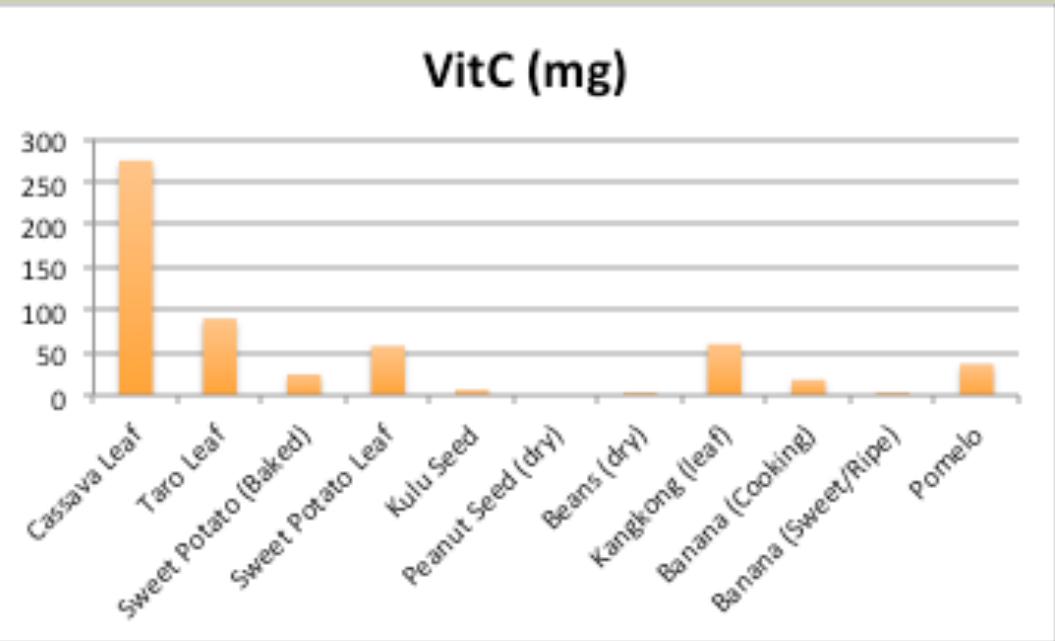
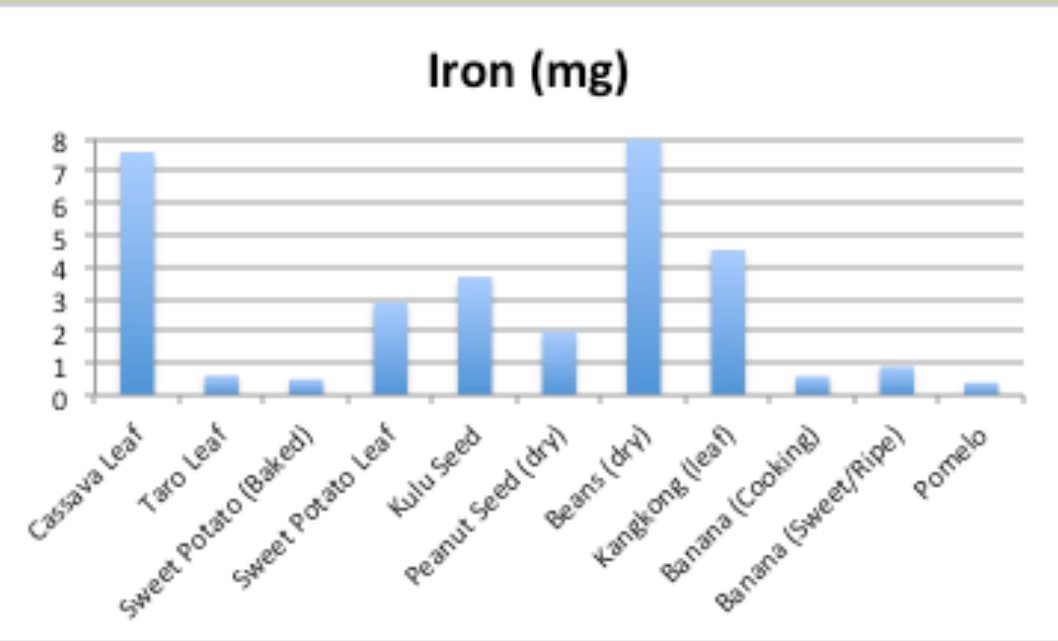
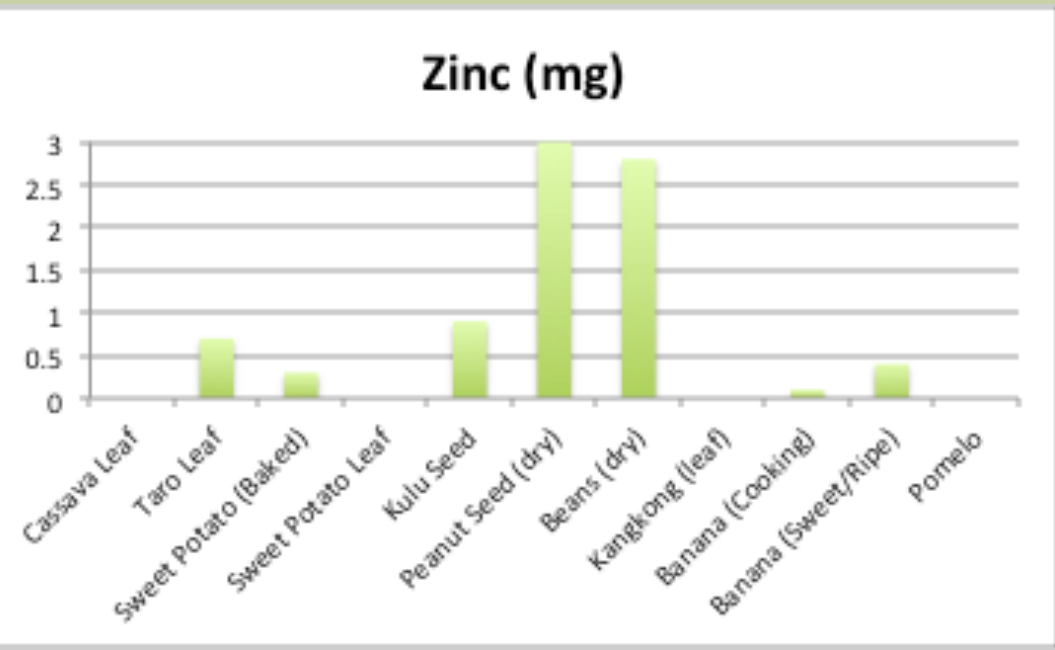
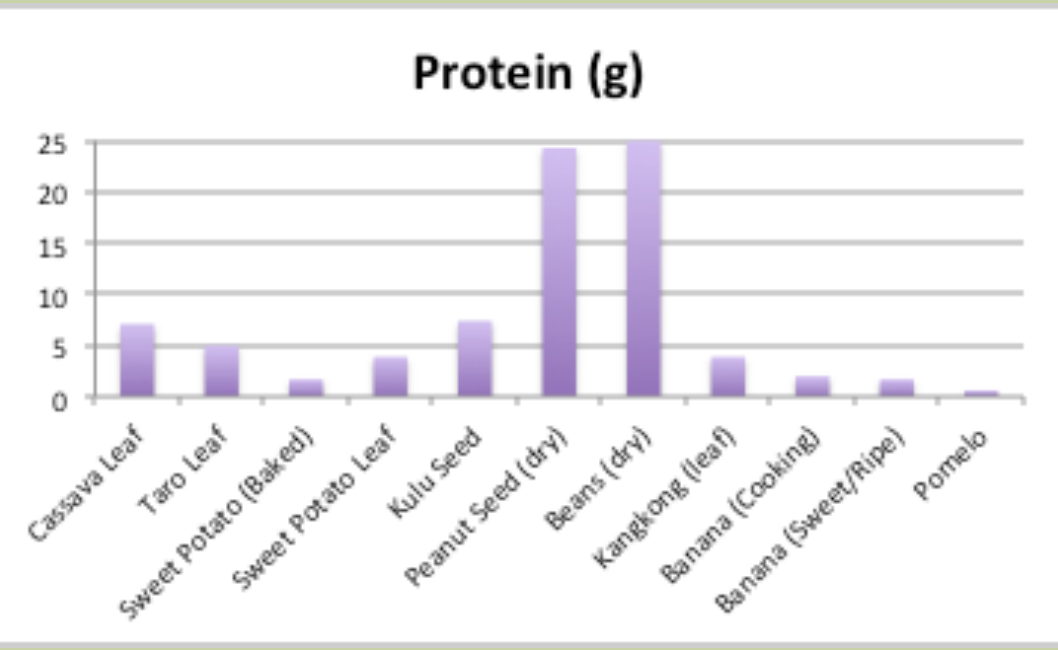
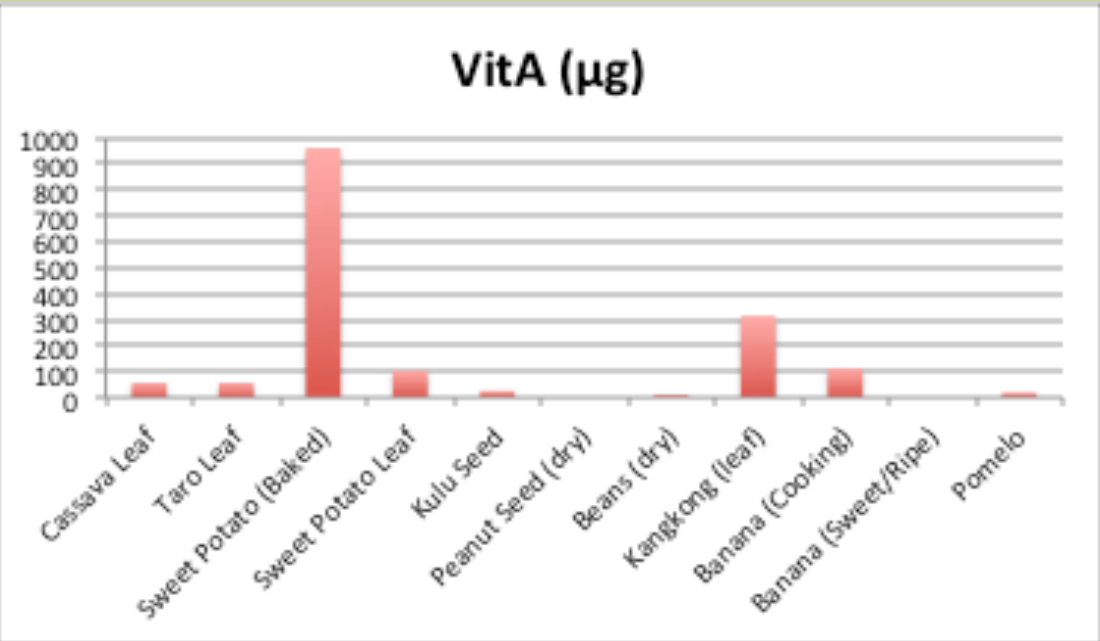


## SELECTED PRESERVATION METHODS

METHOD	DESCRIPTION/PROCESS	EXAMPLES
Drying	Drying removes most of the moisture from the foods in order to stop microorganism growth and slow down enzymes. After cleaning and slicing the fruit or vegetable, the drying process is completed with sun drying, solar drying, or relatively more high-tech equipment such as food dehydrators and conventional ovens. Problems arise with sun and solar drying because of dust, rain, and cloudy weather. Dried foods should be stored in airtight containers to prevent moisture from rehydrating the products and allowing microbial growth.	Drying tubers such as sweet potatoes and cassava in order to reconstitute them later by adding water and boiling.  Drying fruits and vegetables (leaves).
Canning	Food is placed in jars or cans and heated to temperature that destroy microorganisms and inactivates natural enzymes in the food. Air is driven from the jar during heating, and as it cools, a vacuum seal is formed. The seal prevents other microorganisms from decontaminating the food inside the jar or can.	Carrots, corn, potatoes, and cabbage
Chemical Preservatives	Adding Salt (refer to <i>fermentation</i> below)	
	Adding Sugar: 70% sucrose in solution (usually water) will stop all microorganisms in foods. Even a concentration of 60% sugar can preserve fruits for as long as one year.	Fruit jams, jellies, marmalades, juices, squash, or whole fruits
	Adding Acid (vinegar): Fresh fruits and vegetables can be preserved in vinegar and sugar, and then stored in glass containers. In vinegar, fruits and vegetables can last for as long as two years or more.	All fruits and vegetables
Fermentation	Salt plays a role in fermentation, as it determines the microorganisms permitted to grow based on its respective salt tolerance. Growth and fermentation of vegetables by more than one species of lactic-acid bacteria is also influenced by temperature. The wrong temperature and/or salt concentration can produce the wrong bacterial population resulting in soft and hollow pickles with off-flavors. Fermentation inactivates naturally occurring toxins (as with cyanide in cassava).	Red/white cabbage, cucumbers, onions, garlic, cauliflower, tomatoes, under-ripe mangoes, grapes, peaches, pears kangkong stems, and cucumbers

## NUTRITIONAL FACTS OF PRESERVABLE FOODS

When considering which fruits and vegetables to preserve, it is very important to consider the nutritional information of locally grown produce. Presented are common Timorese fruits and vegetables with their key nutrition contents. Nutrition values shown are for every 100g of edible portions.



## CONCLUSION

Improvement in the income generation activities of households at the rural level is essential to improving food security because low income hinders rural people from obtaining the foods needed for an adequate diet. Food preservation methods such as drying, chemical preservation, canning, and fermentation are cheap and energy-efficient means of preserving perishable produce, capable of carrying a household through the lean season and also acting as a marketing opportunity by selling their products within the local area and surrounding villages. On a national economic scale, food preservation practices could reduce the dependency of rural and urban populations on costly food imports, and create local business opportunities. Hence, applying small-scale food preservation contributes to sustainable development for Timor-Leste.

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