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# FOOD SECURITY AND NUTRITION

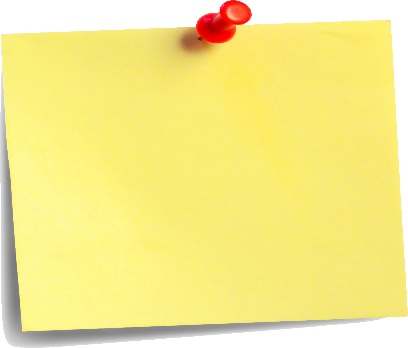
If we want to know whether a family, or a country, enjoys **food security**, we need to know whether:

* There is enough food around, in a household or in a country (**availability**);
* People can get hold of it when they need it, e.g. can grow it, or afford to buy it (**access**); and
* People are using the food well (**utilisation**), meaning the food does not go to waste due to contamination or loss of nutrients from the food.

The third point shows us that just having lots of food, does not necessarily mean there is **nutrition security** – in other words, that a person gets enough **nutritious** ingredients to be healthy. This is one of the reasons why even non-poor families in South Africa suffer from malnutrition.

**Food safety** is also important, because if we handle food incorrectly, like not washing it properly or allowing it stand in hot conditions for too long, the food can become unhealthy or even dangerous.

**Adequate care** is necessary to ensure that especially children, sick people and other vulnerable groupings get access to food (point 2 above). Therefore the skills and motivation of the mother or household caregiver is also an important matter for food security and healthy eating.



**Individual foods are not healthy or unhealthy,   
but a diet as a whole is healthy or unhealthy.**

Recommendations for increasing food sceurity include the following:

* Linking nutritional and agricultural interventions
* Strengthening nutritional and agricultural research
* Promoting mother and infant nutrition
* Reducing malnutrition in children < 5yrs
* Improving and expanding small scale water management
* Improving access to better seeds and other planting material
* Diversifying on-farm enterprises with high value products and
* Establishing effective agricultural extension services

Increasing agricultural productivity of food insecure farmers is a central theme within the poverty and nutrition security debate. The promotion and production of indigenous crops falls within this broader aim.

# GOOD NUTRITION

Some general rules of healthy eating are:

* People need to eat from **all the food groups every day**, (See Figure v: Go, Grow and Glow Foods) and they need to get enough – but not too much – from each food group. This is a **balanced diet**.
* The greater the variety of foods they can eat every day, the better. This is called **dietary diversity**.
* Also, there are certain foods we need to be especially careful that we don’t eat.

People find it very hard to change their behaviour, and particular food behaviour. Most of us stay with the food habits we learned as children, including food tastes and preferences, food preparation methods, composition of meals, regularity of eating and even the setting in which we normally take our meals.

## Balanced diets

To eat well, means to eat **lots of different kinds of food** so that our bodies get all the good things that they need. This does not mean that people need to buy expensive food. By thinking carefully about what you eat, and what you prepare for your family, and choosing food well, your whole family can eat in a healthy and affordable way.

There are a number of ways of introducing healthy dieats at a community level. These are now mostly food based recommendations rather than a focus on specific nutrients.

### Dietary Guidelines

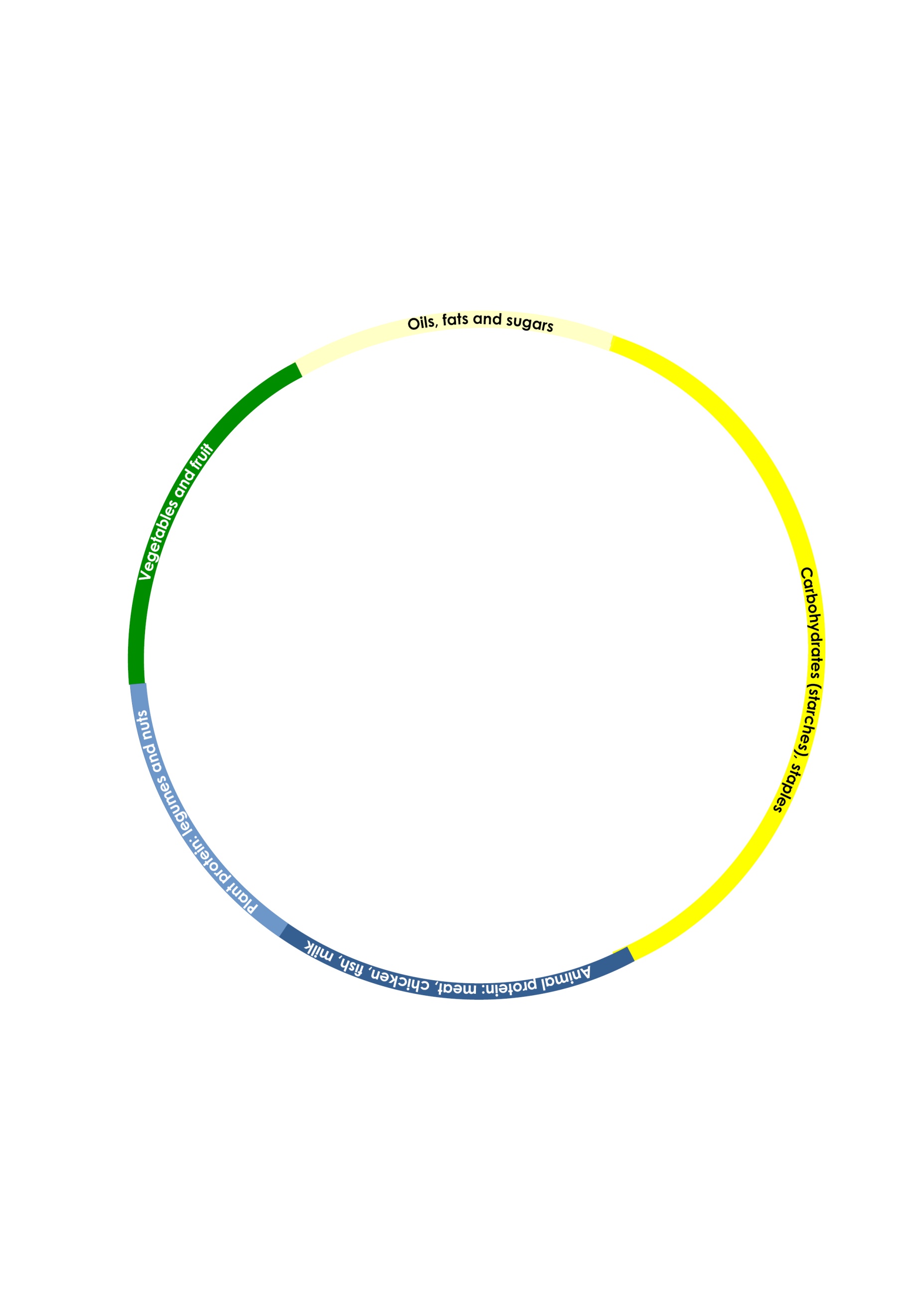
These have been developed at a national level as the nutrition realted messages that need to be considered and are called the 10 food based dietary guidelines.

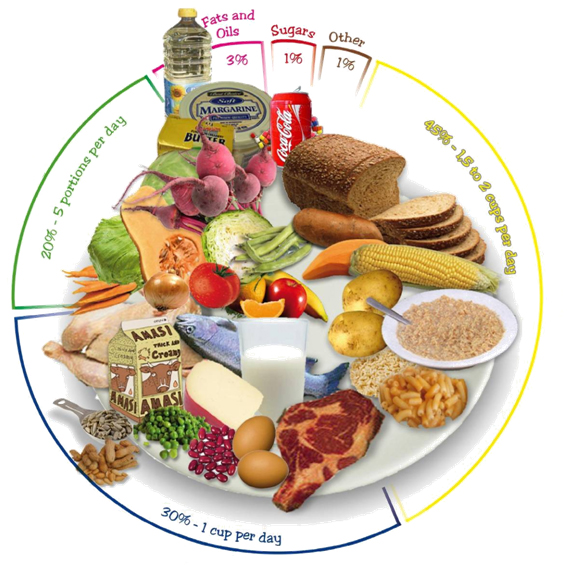
* Enjoy a variety of food for more nutrients
* Balance food intake and energy used
* Be active (exercising, walking, working in the garden and sweat)
* Eat regular meals (do not skip meals especially breakfast)
* Make starchy food the basis of most meals ( white vs brown/wholewheat)
* Eat plenty of vegetables and fruit daily, they are very rich in many nutrients
* Eat beans, peas, lentils and soya regularly
* Meat, chicken, fish, milk or eggs can be eaten daily (fatty vs lean or processed meat; take aways; deep fried meat)
* Use fats sparingly- animal vs plant oil, hard vs soft
* Use less salt, too much salt can lead to heart problems
* Drink clean safe water. Water replaces water lost (i.e. sweat, urine) during exercise.
* If you drink alcohol, drink sensible- don't give children/don’t send children to buy alcohol

These can be used as a way of introducing nutrition concepts at a community level.

### The five food groups

Another way of introducing the concepts of the Five Food Groups in nutrition at a community level is to use the idea of “Go, Grow and Glow” foods. Foods are grouped according to their functions in human health and wellbeing.





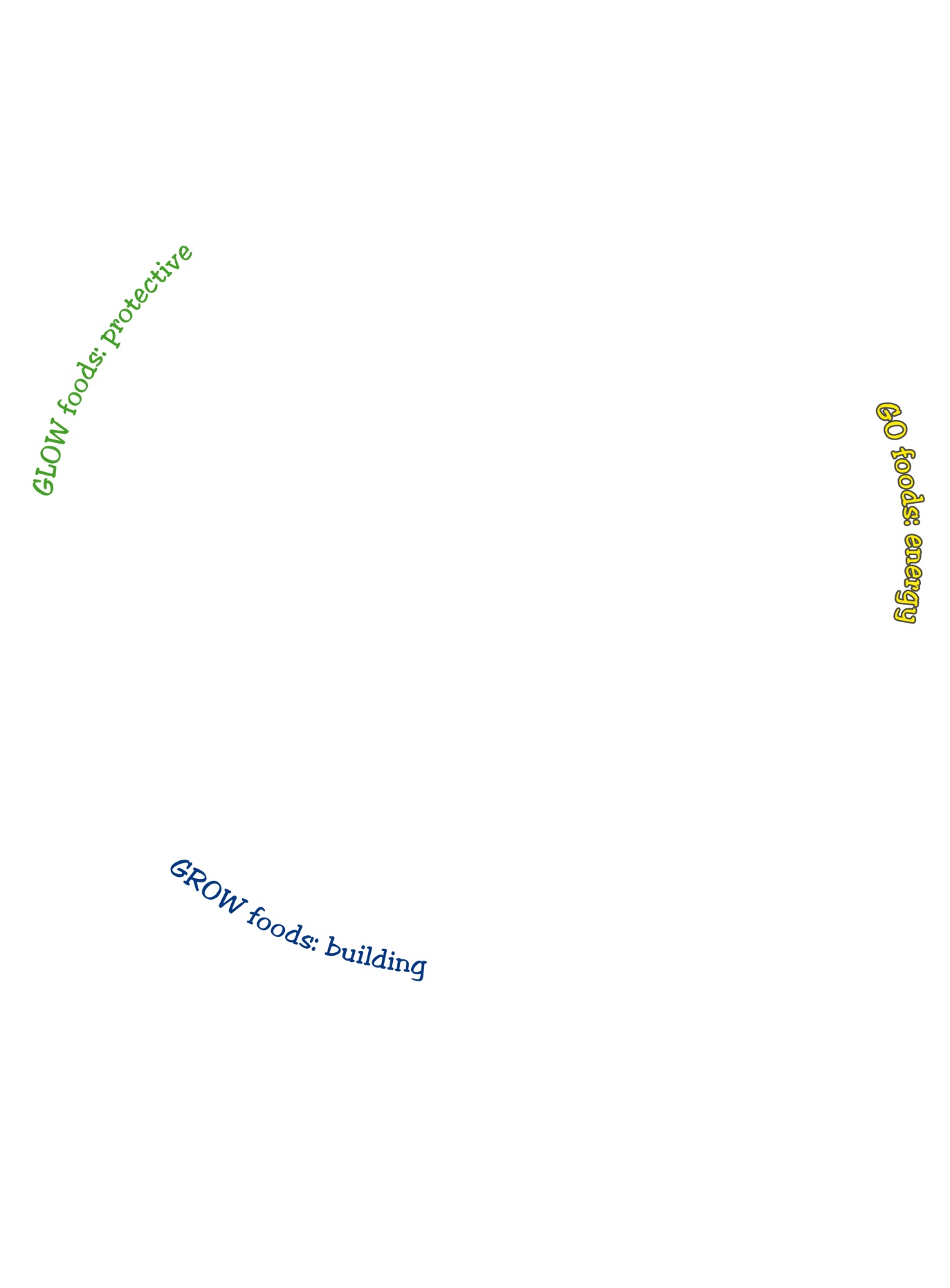


Figure 1 : The Five Food Groups: choices and proportions needed daily

## 

## Malnutrition

Malnutrition can be either:

* Over-nutrition;
* Under-nutrition; or
* Micronutrient deficiencies

**Over-nutrition**  occurs where people over consume enregy rich foods such as starches, fats and suagar. Wieght gain and realted diseases such as hgh blood pressure and diabetes become chronic conditions.

**Under-nutrition** relates often to what is knwon as Protein-Energy Malnutrition where too little protein and energy producing foods are eaten on a regular basis. In the chroni form this leads to growth impariemnt, immune deficiencies and difficulty with cognitve skill development.

**Micronutriend deficiences** are often associated with under nutrition and realtes to specific nutrients such as Vitamin A, iron, zinc and iodine. Under-nutrition and/or micro-nutrient deficiencies, especially among young children, can have long-lasting effects on their quality of life.

## Some important nutrients

It is still a good idea ot also focus on a few of the critical nutrients and their functions.These include the following:

### Vitamin A

Vitamin A is a micronutrient found in food. Vitamin A is very important to children under five years of age, malnourished children, pregnant and lactating women. Excess vitamin in the body is stored in the liver. Vitamin A is a fat soluble vitamin; therefore a small amount of fat should be added for vitamin A absorption. Spinach should be chopped and carrot grated for easy absorption. One of the best ways to prevent Vitamin A deficiency is to encourage families to grow and eat food all year round that are rich in Vitamin A.Mothers who are breastfeeding should eat plenty of food rich in Vitamin A.



Good Sources of Vitamin A: Orange-yellow vegetable (carrot, butternut,orange flesh sweetpotato and fruit (pawpaw, mango,peach) except citrus fruit

Dark green leafy vegetables such as spinach and African leafy vegetables. Carrots, butternut.

#### Functions:

* Ensures child growth and development
* An anti-oxidant, it protects the body against infections
* Eye vision

#### Vitamin A deficiency (VAD)

Vitamin A deficiency may result in: poor growth and development in children; increased risk of infection, eye problems and death



Good Sources of Vitamin C:All fresh vegetables nad fruit. Including for example citrus, guava, papayas, spinach, cabbage, broccoli and marrows.

Prolonged boiling and other processing of vegetables will destroy most of the vitamin C – so they need to be eaten raw, lightly steamed or lightly fried.

### Vitamin C

Vitamin C is important for maintaining overall health and strengthening the immune system. Defieicencies can lead to many problems nad infactions, including scurvy in severe cases.

#### Functions:

* An antioxidant
* Maintains healthy gums, skin and connective tissues
* Strengthens the body against infections

### Iron

Anaemia is the **most widespread nutritional disorder in the world**. The most common cause is a lack, or deficiency, of iron in the diet. Other causes are parasitic infections (such as hookworm) and loss of blood during menstruation and child birth. People with anaemia usually have pale tongues and lips and the inside rims of their eyelids are white. Anaemia reduces people’s ability to work, increases tiredness and slows children’s learning



Iron rich foods include liver, meat and fish. Also legumes such as peas, beans, bambara, groundnut and cowpeas.

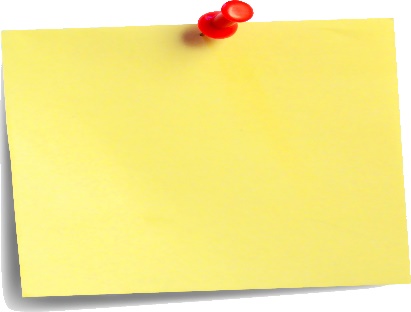
These must be eaten with foods rich in Vitamin C . Both legumes and Vitamin C rich foods can be grown in the garden**.**

#### Functions

* Iron is an important mineral needed to produce red blood cells and transport oxygen/ air in the blood white.

### Iodine

Iodine deficiency is caused by lack of iodine in food and in the soils in which food is grown. This is most common in areas where iodine in the soil has been washed away by rain, and inland areas that do not have easy access to seafood.



The use of iodized salt is the most effective way of preventing iodine deficiency and is highly recommended**.**

Iodine deficiency disorders include goitre, which is indicated by a swelling of the thyroid gland; low birth weight; inhibited growth in children; and impaired mental development. In severe cases, brain damage can be caused.

# THE CONTRIBUTION OF AFRICAN LEAFY VEGETABLES (ALVS)

Common, wild, edilbe leafy vegetbles grown in cultiavted lands and in the veld. These are harvested during the rainy season and are plentiful during the summer months. Below is a graph giving an indication of typical occurence of wild leafy vegetables in KZN.



*(From: Dr A Modi; Water use, drought tolerance and nutritional value of indigenous crops: an overview. Modi A.T., Beletse Y. & Oelosfe A. WRC, August 2011)*

The leaves of wild vegetables can be cooked and eaten fresh, sun or air-dried. When cultivated in home gardens, wild vegetables grow and produce in places where it is difficult for exotic vegetables to grow, because the former do not need many inputs.**They grow** easily, contain valuable nutrients, and are palatable at a young stage of plant development.

The table below gives a comprehensive analysis of the nutrients available in a cooked portion of the common ALVs.

Table1. Selected leaf nutritional contents (per 80g of cooked leaves\*) of some of the wild vegetables

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Wild vegetable** | **Macronutrient** | | **Minerals** | | | | **Vitamins** | | | | | |
| **Recommended Dietary Allowance (adult female 25-50 years)** | **Energy** | **Protein** | **Calcium** | **Iron** | **Zinc** | **Selenium** | **A** | **C** | **E** | **Ribo**  **flavin** | **Niacin** | **B6** |
| **(kJ)** | **(g)** | **(mg)** | | | **g)** | **(g RE)** | **(mg)** | | | | |
| 9240 | 50 | 1000 | 15 | 12 | 55 | 800 | 60 | 8 | 1.3 | 15 | 1.6 |
| **Amaranthus spp** | 217 | 4.06 | 364 | 6.72 | 2.11 | 0.7 | 456.4 | 64.4 | 0.23 | 0.14 | 1.4 | 0.252 |
| **Black jack** | 310.8 | 4.76 | 245 | 8.4 | 1.27 | 2.5 | 1376 | 32.2 | 3.52 | 0.25 | 0.98 | 0.49 |
| **Gallant soldier** | 218.4 | 4.48 | 397.6 | 7.42 | 1.82 | - | 1058 | 9.38 | - | 0.29 | 1.69 | - |
| **Water navel** | 333.2 | 4.2 | 334.6 | 27.5 | 4.21 | - | 740.6 | 32.6 | - | 0.32 | 1.12 | - |
| **Wild lettuce** | 229.6 | 3.92 | 331.8 | 20.8 | 1.12 | - | - | - | - | 0.224 | 0.89 | - |
| **Wild mustard** | 198.8 | 5.18 | 399 | 13.3 | 1.90 | - | 476 | 15.4 | 0 | 0.196 | 0.86 | - |
| **Cabbage** | 190.4 | 2.1 | 43.4 | 0.42 | 0.21 | 1.26 | 9.8 | 42 | 0.35 | 0.028 | 0.42 | 0.112 |
| **Swiss chard** | 182 | 3.78 | 163.8 | 6.16 | 1.02 | 1.68 | 655.2 | 33.6 | 0.42 | 0.14 | 0.84 | 0.112 |

- indicates no figures were available in literature.

The graph below provides a more visual presentation of the vitamin A and C content of commonly eaten leafy vegetables



Right: Cowpea leaves (amakhasa embumba)

Left: Amaranthus (imbuya)





Left: Orange fleshed sweet potato (ubhatata obovu)

Right: Lambsquarters/ goosefoot/ fat hen (imbilikicane)



Far left: Gallant solider (ushukeyana)

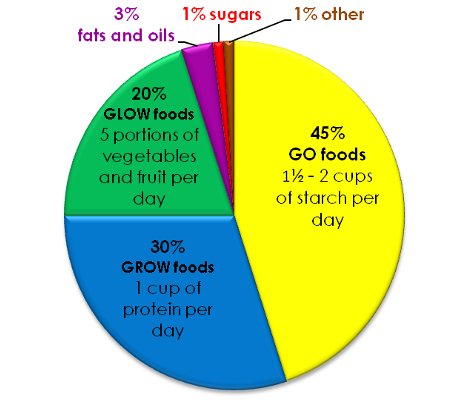
Left: Wild lettuce (Urhwaburhwabu/ ihabe/ uhabehabe)



Wild mustard (umasilhlalisane)

## Recommendeddaily amounts

Eating a balanced diet means that individual meals are also balanced, that is, each meal contains a proportion of the nutrients that a person needs every day. There are many ways of combining foods to make a nutritious meal. The basic nutrients of starch, protein, fats, vitamins and minerals need to be kept in mind.



**On my plate – what I should eat each day:**

# FOOD PREPARATION

Several traditional food-processing and preparation methods can be used at the household level to enhance the bioavailability of micronutrients in plant-based diets.

## Important traditional food-processing and preparation methods

### Soaking

Soaking involves immersing food (e.g. grains) in water for a period of time. Traditional method of soaking grains is healthier than the modern way of simply boiling.

#### Advantages of soaking

* It improves digestion by breaking down proteins that are difficult to digest. Some enzymes that reduce nutrient absorption of iron and calcium for example may be reduced during soaking, making these elements more easy to absorb. (HealthBanquet, 2007).
* It enhances nutrition by reducing the effect of phytic acid (an anti-nutrient that prevents absorption of nutrients).
* It saves time and fuel

#### How to soak grains

I cup grain (e.g. samp)

2 tablespoons of acid

Warm water

For example, put samp, acid and water into a pot and leave to soak for about 7-12 hours (or overnight). Continue to cook as usual. Remove any foam that appears on top as it can contain released impurities.

### Germination/malting

Malting is the the process of germinating grains to release/create the enzymes needed to convert the starch to sugar and break down proteins. This makes these nutrients more available and also releases zinc and iron. It is an importnat process for creating traditional cereals for making porridge and fermented products. The malting creates a thinner cereal porridge without dilution with water while simultaneously enhancing their energy and nutrient densities.

*Right: Germinated maize seeds* *(From wwww.stillcoooker.com)*, *and germinated amaranthus (From www.homebrew.com)*

This can only be done by "growing" the seed to the point where it has the maximum enzymes and halting that same growing process before the plant starts using those enzymes to continue growing the plant.

#### How to do germination/malting

The grain to be malted is soaked in water until they swell up. They are then places on racks or spread out in shallow containers and but kept moist and cool for 3-5 days until the seeds germinate and the roots start to grow out. At this point they are transferred ot a hot, dry envrionment and the seeds are once again dried. They can be kept like this for a number of months. This malted grain can be used to make very nutritious porridge and are also used as an ingredient in fermeted drinks. For the fermentation yeast is either added, or natural yeast is used, working with a starte culture.

### Fermentation

Traditionally fermentation is carried out with mlated grains. Millet and sorghum work particulalry well, but maize is also fermented to produce drinks like amahewu. A yeast starter culture is needed for the fermentation. Wild yeasts were used in the past (those linked to the ceareals themselves) and preserved in the starter culture traditional clay pots.

*Right: an image of a traditional wedding with the traditional clay pots nad streinrs used to make sorghum beer.* (*from www. ezakwantu. com/ Gallery African Beer Pots - Clay Pots)*

Fermentation also improves protein quality and digestibility, vitamin B content, iron and zinc availability and microbiological safety and keeping quality.

Examples of tradtional fermented foods are ; ujeqe (fermented maize bread), amahewu (fermented maize drink) and umqombothi (fermented sorghum beer)

*Right: Fermented sorghum beer (umqombothi)*  *(From: Roger de la harpe/Gallo Images/ Corbis)*

# POPULAR TRADITIONAL FOODS IN KWAZULU- NATAL

The table below lists some of the most well known traditional foods and dishes still prepared nad nejoyed in Kwazulu-Natal

|  |
| --- |
| **Some popular Zulu traditional food**  **Traditional food name and brief description about preparation** |
| **Umcaba-** is prepared from fermented milk (*amasi*) and maize or sorghum. Maize or sorghum is roughly pounded and then boiled. Once cooked these are cooled down, any water is removed and the boiled grain is mixed with amasi and served. |
| **Isijingi-** is made from crushed maize mixed with pumpkin (see figure below). The pumpkin is boiled and then maize meal is added. The mixture is cooked for a few minutes before serving warm |
| **Ujeqe** – is a bread made by boiling crushed green maize or sorghum. Green maize is crushed to make a meal and then water is added to make a dough. This dough is raised by adding a small amount of traditional beer to it. The dough is then covered in and steamed in water until it is cooked.(see figure below) |
| **Isigwagane:** is made by cooking beans. Then maize meal is mixed to a paste with water and added to the beans. This is cooked again until is is done. |
| **Isijabane-** is prepared in a similar way to *isijingi,*  but the leaves used are usually wild leafy vegetables (imifino) such as balck- jack (uqadolo) and amaranthus (imbuya) |
| **Isiphuphutho**: is made by cooking mealies until they are soft. Then add beans/cowpeas/jugobeans and cook till soft. |
| **Umbhaqanga-** is made by cooking beans till soft. Then add maize meal |
| **Izinkobe-** boiled maize grain. Maize grains can be fresh or dry. |
| **Izinkobe zikabhontshisi-** Maize grains are partially cooked. Beans and salt are added to the mixture and cooked until done |
| **Umqaba:** is made by grinding mealies that have been boiled and then adding amasi to it. |
| **Umxhafele:** isa mixture of *izinkobe* and cooked wild vegetables or pumpkin leaves |
| **Isitambo-** is made from stamped dry maize cooked with or without beans. Samp is made by crushing hte maize in a stamping bolck to rough pieces. |
| **Amahewu- M**aize meal is cooked to make porridge. Cool porridge is fermented overnight before serving. Stamp mealies and soak in water for 2days, remove from water & stamp again to make mealie meal. Soak mealie meal again (add boiled water to soak mealie meal mix well). Then sieve/sift. Put the sifted mealie meal in boiling water cook it like porridge. Simmer & put it aside to cool, add fermented amahewu & mix well. Leave overnight to ferment |
| **Idokwe lamabele:** is made by fermenting ground millet /sorghum and cook like porridge. Then leave it overnight and drink it like amahewu |



Left: Isijingi (Maize and imifino)

*Right: Ujeqe (steamed bread)*

## 

## Preparation of vegetables and fruit

When preparing food, there are a few things to consider to make sure we do not lose the nutrients in the food. Below is a list with some suggestions:

* Buy or pick vegetables on the day you use them.
* Store vegetables and fruit in a cool, dry place.
* Clean and cut vegetables immediately before cooking. Most of the nutrients are in the outside parts of the vegetables and fruit. Try not to peel them. Cut the food into big pieces if possible – small pieces lose more vitamins.
* Cook vegetables in just a little water or in a stew, until just tender. Don’t cook too long, or in a lot of water.
* Other ways to preserve nutrients are frying very quickly over high eat or in a little oil.
* Eat the food as soon after cooking as possible.

# SOME RECIPES FOR NUTRITIOUS DISHES

Here are a few fun ideas of nutritious dishes that can be tried out! [[1]](#endnote-1)

### Mashed Pumpkin with peanut butter

**INGREDIENTS**:

1 medium pumpkin or bitter melon, peeled, seeded and cut into cubes

3 cups maize meal

¼ cup peanuts or 3 tablespoons of peanut butter

½ teaspoon of iodized salt

Sugar to taste (for bitter melon)

**PREPARATION**:

1. Boil pumpkin in salted water until soft

2. Mash until smooth

3. Add maize meal and cook for 30 minutes, stirring occasionally

4. Add peanuts or peanut butter.

### Green Leaves with Peanut Sauce

**INGREDIENTS:**

750 g (3 cups) of leaves (amaranth, black jack, wild lettuce, kale, cow pea, taro, pumpkin, bean or any other) washed and cut

½ cups of peanuts or 2 tablespoons of peanut butter

Medium onion

Large tomato

Vegetable oil

Iodized salt to taste

**PREPARATION:**

1. Sort the leaves and steam them in a pot until tender

2. Roast peanuts and grind to a paste

3. Cook onion and tomato in vegetable oil

4. Add steamed leaves and more water. Add salt to taste

5. Serve with peanut paste.

## 

## Nutritious snacks

Small and school going children need to eat some snacks in between their main meals. It is good for them to eat little bits often, rather than large meals. Nutrient rich snacks should be preferred.

### Peanut biscuits

**INGREDIENTS:**

12 tablespoons crushed raw peanuts

4 tablespoons sugar

1 egg

6 tablespoons maize meal

Water

1 tablespoon vegetable oil

**PREPARATION:**

1. Mix the ingredients together

2. Shape mixture into flat cakes

3. Cook cakes slowly on a greased hot plate or frying pan.

### Peanut sweets

**INGREDIENTS:**

1 cup sugar

1 cup water

1 cup shelled and roasted peanuts

Vegetable oil

**PREPARATION:**

1. Dissolve the sugar in a pan of water

2. Heat the pan and stir until a syrup forms. When the syrup is golden brown, add the peanuts and mix well.

3. Pour the firm mixture on to a large oiled dish, spreading it into a 1-1.5 cm thick layer.

4. Let the mixture set, but before it gets hard, cut it into small squares.

### Steamed bean flour cakes

INGREDIENTS:

Bean flour

Water

Pepper (ground)

Onion (ground)

Salt (optional)

Banana leaves

Dried fish or boiled eggs (optional)

**PREPARATION**

1. Mix the bean flour with water to form a paste (a little cassava or maize flour (maizena) can be added to bind the mixture).

2. Add pepper, onion and salt (and other ingredients, if desired) to the paste.

3. Wrap the paste in banana leaves and steam

# DIVERSIFYING PRODUCTION IN FOOD GARDENING

## Diversity for good nutrition

Generally, when we think about homestead food production, we think about vegetable gardens. And when we think of vegetable gardens, we may be thinking mainly of crops such as cabbage, spinach, onion, tomatoes and possibly a few others. Such gardens just provide a little extra food from time to time. Gardens like these cannot fulfil the purpose of providing food on a continuous basis, so that there is always something wholesome and nutritious to eat from the garden. In other words, there is enough, of enough different types of food to fulfil our dietary needs and preferences.

For this to be possible, we need to think of combining many different types of crops (vegetables, fruit, herbs) and plants (medicinal, protective, windbreaks, fodder for animals) in our gardening. We also need to think of including animals (small livestock could be easier – chickens, ducks, rabbits, pigs and goats). Then we need to combine all of this into a farming system that can manage itself to a certain extent and support us in the process.

### Some changes we can make

#### For continuity:

We want to be able to have something in the garden to pick and eat throughout the year*. (We need to wait a long time for cabbages and onions)* We can include crops such as:

- Amaranthus , other ALVs - Rape, kale

-Spring onions/ bunching onions - Garlic chives

- Leeks - Parsley

- Coriander - Fennel

- Lettuce - Broccoli, cauliflower (for leaves as well)

- Mustard spinach - Marrow (for leaves as well)

- Sweet potato (as well as orange fleshed for vitamin A)

- Brinjals

#### For protein:

We want to grow crops that can add protein to our diets, especially for the young children (ages 1-5years). We can include crops such as:

- Turnip greens - Sugar beans, jugo beans

- Cowpeas, - Peanuts

- Peas

We also need to include small livestock such as chickens, ducks, rabbits, goats and pigs in our farming system.

#### For vitamin C and vitamin A:

We want to be able to eat fresh green and yellow fruit and vegetables every day. This is very important for children and sick people. We can include crops such as:

- Tree tomatoes (*picture on the right)*

- Granadilla, gooseberries

- Paw-paws, mango, banana, avocado

- Peaches, apricots, plums

- Oranges, naartjies, lemons

- Guavas

- Butternut, pumpkins of various types

We want to grow a range of fruit, so that there is fruit to eat throughout the year.

## Drying of fruit and vegetables

Processing of food in this way helps to ensure continuity of food supply.

A system of drying racks made with and covered with shade cloth/ hale netting is suitable.

*Right: Drying of tomatoes brinajl, peppers and naartjie*  *Drying of almost anything is possible!! (Pioneered at Dundee Agricultural Research Station)*

The vegetables and fruit are covered with a layer of netting for hygiene reasons. Dried vegetables can be stored for two years or more before being used.

**

*Right: Bottles of dried vegetables; including from left to right; Peppers, sweet potato, ground chillies and brinjals*

Below is a table to help you think some more about different kinds of crops and foods that are rich in key nutrients, that can be grown and produced at a homestead level.

Table 2: Home garden crops that are rich in key nutrients

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| GO Foods (Energy) | GROW Foods (protein) | GLOW Foods | | | Iron | Fat |
| Vitamin A | Vitamin C | |
| Avocado | Bambara groundnut or jugo beans | Amaranth or “imifino”, | | Cabbage | Beans/ peas\* | Avocado |
| Bambara groundnut | Beans/peas | Other wild leafy vegetables | | Citrus | Kidney | Bambara groundnut or jugo beans |
| Banana | Cow pea | Carrots | | Guava | Liver | Butter |
| Cassava | Eggs | Cassava leaves | | Mango, Papaya | Meat/ chicken/ fish | Groundnut |
| Coconut | Milk/ maas (soured milk) / yogurt/ cheese | Sweet potato leaves and tubers (also orange fleshed) | | Peaches, plums, apples, pears | Some green leafy vegetables e.g. spinach or Swiss chard | Oil from plants; e.g. sunflower, sesame, groundnut etc |
| Groundnut | Groundnut | Liver | | Passion fruit | Breast milk | Tree tomato |
| Maize | Meat/chicken/fish | Maize | | Pineapple |  | Soybean |
| Millet, wheat, sorghum | Melon or pumpkin seeds | Mango | | Tree tomato |  |  |
| Rice | Pigeon Pea | Papaya | | Sweet potato |  |  |
| Sorghum | Soybean | Pumpkin | | Tomato |  |  |
| Sweet potato | Lentils, dahl | Rape or kale | | Sweet pepper |  |  |
| Taro/ amadumbe |  |  | |  |  |  |

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* [www.tearfund.org/tilz](http://www.tearfund.org/tilz) : This website has many useful resources; books, manuals newsletter and training material for health and development workers worldwide. the PILLARS Guides are designed for facilitators
* [www.leisa.info](http://www.leisa.info) : The Centre for Information on Low External Input and Sustainable Agriculture provides information about successes in sustainable smallholder farming
* [www.fao.org/sd/seaga](http://www.fao.org/sd/seaga) : Socio-Economic and gender analysis programme have produced various guides for facilitators in working with rural households and resources

1.  [↑](#endnote-ref-1)