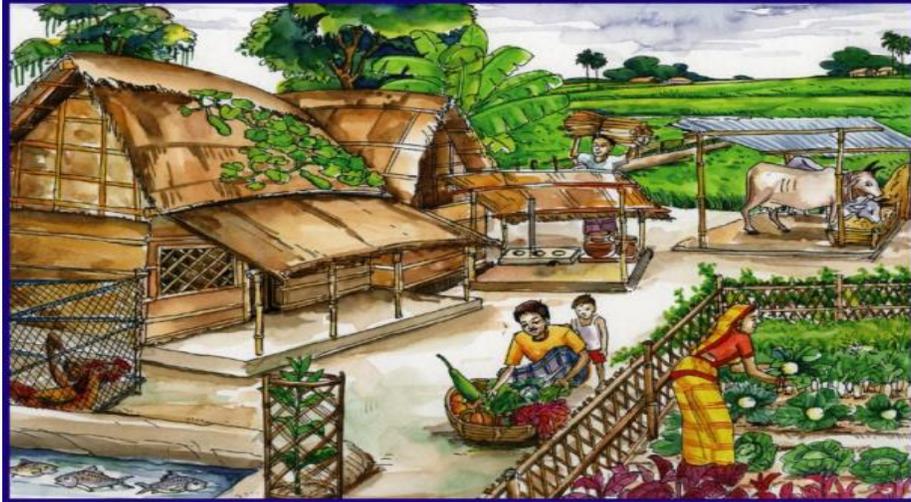




Integrated homestead farm



On an integrated homestead farm one can produce vegetables and fruits, rear backyard poultry and small livestock and produce fish within the homestead area which improves food security and nutrition of the household members.

On an integrated homestead farm you can produce nutritious foods: dark green leafy vegetables, yellow and orange vegetables, fruits, meat, fish, eggs and milk, which contain many vitamins and minerals helping the body to: protect itself from diseases, prevent night blindness, anemia, goiter, build strong bones and give strength. With these foods children will grow healthy and will be successful at school and adults will have a lot of strength to work.

After meeting your family's nutritional needs, you can sell the excess poultry, eggs, vegetables and fruits and make some money for other important family needs, such as bearing your children's educational expenses. You can also buy other nutritious food with that money.

Additional advantages of integrated homestead farm:

- You can cultivate on the unused land
- The family will not have to buy food from the market
- A well-developed home garden generates employment for women and promotes women's empowerment

To meet the nutrition security of each family member - women, men, boys and girls should be given equal amounts of nutritious food.



Basics on Food and Nutrition

Nutrition is a process of delivering to our body all the foods that it needs to be healthy and active. To ensure this we have to consume a balanced diet which contains all the food groups.

Basic food groups

- Energy Giving Foods give energy and keep us active. Examples of these foods are: rice, bread, other grains and cereals, roots and tubers, sugar, oil, coconut, ghee etc.
- Body Building Foods are important for growth and building strength. Examples of these foods are: meat, fish, egg, milk, lentils, nut, oil seeds, etc.
- Body Protecting Foods increase the immunity. Examples of these foods are: dark green leafy vegetables and yellow vegetables and fruits.

Balanced diet

- To stay healthy, one should eat foods from each of the three food groups, and at least two different foods from each food group on a daily basis.
- A balanced meal can be prepared by a combination of foods from the three food groups which include:
 - A cereal, root or tuber and oil or coconut
 - Pulses, nuts or oilseeds, meat or fish, or other foods of animal origin (eggs or milk products)
 - Vegetables and fruits

Food combinations

- Eat sour foods with meat, egg, dark green leafy vegetables and pulses
- Leafy and other vegetables should be cooked with oil to ensure that our body can use all the nutrients they contain

Child undernutrition

- If child shows following signs, it can be suffering from undernutrition:
 - Is less energetic
 - Is shorter and weighs less than other children
 - Gets sick more often
- Because of lower immunity, children suffer from disease
- Chronic malnutrition among children and mothers leads to life lasting health problems and in severity can even cause death.





Foods rich in key micronutrients

Foods that we eat daily like rice, fish, pulses, vegetables and fruits are made up of a number of chemical components called nutrients. Nutrients are substances which are used by our body for maintaining its proper functioning.

Vitamin –A: protecting eyes, promoting growth and immunity

- **Dark green leafy vegetables:** Drumstick leaves, red and green amaranth leaves, fenugreek leaves, colocasia leaves, spinach, sweet potato leaves, jute leaves, Indian spinach, radish leaves
- **Yellow and orange vegetables:** Carrot, sweet pumpkin, orange flesh sweet potato
- **Yellow fruits:** Monkey jack, ripe mango, palmyra palm, melon, jambolan, ripe papaya, water melon
- **Small fish** such as mola, dela, darkina eaten whole with head
- **Animal source foods:** Ghee, butter, cheese, milk and eggs
- **Organ meat:** Liver



Eating these foods every day is important because having not enough vitamin A in our body can cause night blindness, frequent infections and reduced immunity and growth.

Iron: blood building

- **Organ meat:** Liver, heart
- **Meat and fish**
- **Dark green leafy vegetables:** Red and green amaranth, jute leaves, bengal dayflower leaves, bitter gourd leaves, cowpea leaves, pumpkin leaves, Indian spinach
- **Fruits:** Tamarind, hog plum, dates (molasses and jaggery) palmyra palm, pineapple, fig, emblic
- **Legumes and whole grains:** Bengal gram, green gram, lentils, grass pea, rice bran, rice flakes, whole wheat flour
- **Spices and condiments:** Cumin seeds, dried bay leaf, turmeric powder, fenugreek seeds, coriander seeds, black pepper



Eating these foods every day is important because having not enough iron in our body can cause weakness and in severe cases anemia (reduced blood).



Calcium: building bones and teeth

Milk and milk products: cottage cheese, milk, curd

Bony fish: puti, tengra, chapila, chenda, darkina, taki, chella

Leafy vegetables: amaranth leaves, drumstick leaves, fenugreek leaves, colocasia leaves, cowpea leaves, beet greens leaves, radish leaves, Indian spinach leaves, bitter gourd leaves

Nuts and seeds: sesame seed, mustard seed, linseed, pistachio nut

Pulses: soybean, Bengal gram, black gram, green gram

Spices, condiments and herbs: poppy seeds, fennel seeds, cumin seeds, coriander seeds, cloves



Eating these foods every day is important because having not enough calcium can weaken bones and teeth and in severity can cause rickets.

Vitamin C: promoting immunity and helping to build blood

- **Sour fruits:** Emblic, guava, pomelo, mango, hog plum, jambolan, jujube, ripe papaya, lemon
- **Spices and condiments:** Coriander leaves, green chili



Eating these foods every day is important because having not enough vitamin C can cause frequent infections and slow wound healing.

Vitamin C rich foods should be always eaten with iron rich foods.

Iodine: promoting healthy growth and cognitive development

- Iodized salt
- Fish and seafood



Eating iodized salt and fish and seafood every day is important because having not enough iodine in our body can cause goiter in adults and impaired growth and mental and cognitive development of children.



Breastfeeding and maternal Nutrition

Initiation of breastfeeding

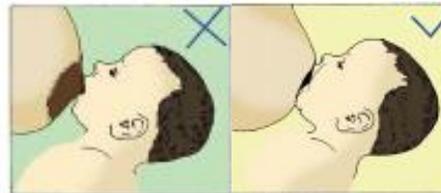
- Mother should initiate breastfeeding within 1 hour from the birth
- Colostrum is the thick, yellowish first milk of the mother which has to be given to a child because it gives immunity to the new born.
- Mother's milk is safe and child can easily digest it. If the child is given tinned milk or other liquids and is fed with a bottle, it can get diarrhea, pneumonia, infections and allergies and asthma.
- During the first six months, the child should receive exclusive breastfeeding, not even a drop of water or other food should be given. Mother's milk contains all the nutrients that are required for growth and development until the 6th month.
- From the age of six months all babies need complementary foods in addition to breast milk. Breastfeeding should be continued till the second year of life.
- Mother should breastfeed one breast until it becomes very soft (empty) and after that change for the second breast.



Position and attachment during breastfeeding

The 4 key points of attachment are:

1. Baby's mouth wide open
2. Lower lip turned outwards
3. Baby's chin touches breast
4. More areola visible above baby's upper lip than below.



The 4 key points of position are:

1. Baby's head and body in the same line
2. Baby held close to mother's body
3. Baby's whole body supported
4. Baby approaches breast, nose opposite to nipple.



- When a baby is sick breastfeeding should be continued.
- Mother should continue breastfeeding even when she is sick.



Maternal Nutrition

Adolescence

- Iron rich foods such as meat, fish, dark green leafy vegetables, beans and chick peas have to be eaten to build blood and also to replace monthly menstrual losses.

Pregnancy

- In order to nourish the child in the womb, a pregnant mother should take one extra meal a day, and during each meal she should take more food than she used to before pregnancy.
- In order to nourish the child in the womb, a pregnant mother should eat plenty of blood and bone building foods like meat, fish, milk and its products, dark green leafy vegetables, pulses, molasses, nuts and seeds.
- The pregnant mother should take iodized salt for the physical and mental development of the child in the womb.
- The pregnant mother should take iron folate tablets every day from recognizing the pregnancy to the third month after delivery.
- During pregnancy period a women need to go to a doctor or to a health worker every month for a check-up. If not possible, the doctor's advice must be taken at least for four times during pregnancy.
- Pregnant women should avoid heavy work and take rest for two hours during day, and eight hours at night
- No food items are restricted during pregnancy



Lactation

- A woman after giving birth should undergo four post natal visits: the first one should be within 24 hours followed by weekly visits until the end of the month.
- In order to produce enough milk for her child, the lactating mother should take two extra meals a day and during each meal she should take more food than she used to before having a child and she should drink plenty of water.
- In order to nourish her child, the lactating mother needs a lot of energy and nutrient rich foods for bone and blood building and healthy eyes. She should eat a lot of milk, curd, small bony fish, pulses, dark green leafy vegetables and yellow and orange vegetables and fruits.
- Adding nuts and seeds to the diet will increase its nutrient and energy density.

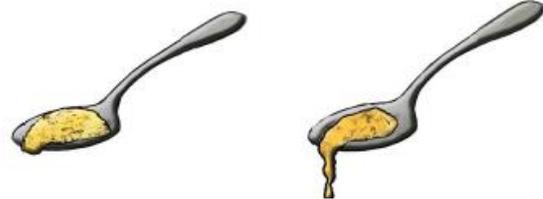


Complementary Foods and Feeding

- From 6 months of life complementary food should be introduced in the child's diet.
- Breastfeeding should be continued up to two years of life along with complementary food.
- Hands should be always washed with soap before preparation of complementary food and feeding the child.



- At the beginning, complementary food should be soft and mashed to swallow easily. Thickness of the food should be increased gradually as the child grows older.

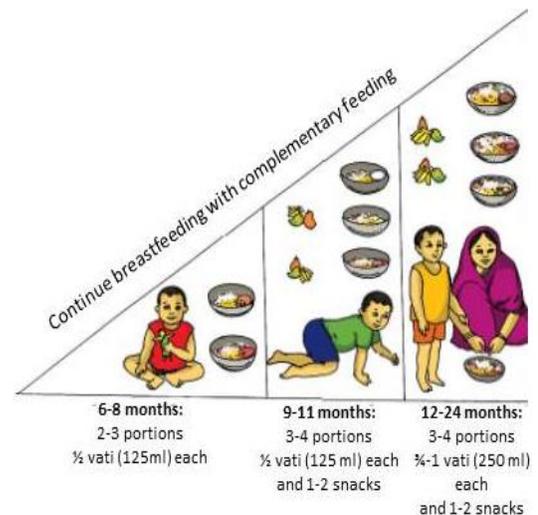


Thick food in spoon

Thin food in spoon

Types, quantity and number of child feeding

- 2-3 times per day at 6 to 8 months of age.
- 3-4 times per day at 9 to 11 months of age.
- 3-4 times per day at 12 to 23 months of age.
- Give nutritious snacks 1-2 times a day





Strategy to increase energy nutrient density of complementary food

- Make sure that the food is thick
- Add oil to the main dish
- Add egg, meat and fish
- Use milk or coconut milk instead of water
- Use a lot of pulses, nuts and seeds

Good complementary food:

As complementary foods a variety of nutritious foods should be given. Some examples are:

- Meat, especially organ meat like liver and heart, fish and mashed small bony fish
- Boiled egg, especially egg yolk
- Milk and milk products like yoghurt and curds
- Pulses
- Nutritious vegetables: orange and yellow vegetables (carrot, pumpkin, etc.) and dark green leafy vegetables (spinach, amaranth, etc.)
- Nutritious fruits: mango, papaya, hog plum, bananas, guava
- Use jaggery and molasses instead of sugar
- Use roasted nuts and oilseeds like sesame, groundnuts and pumpkin seeds

Never give children snacks and sweets from shops (e.g. fried foods, candies, cookies)

Mother should feed boys and girls equally



Health and Food Hygiene

1. Be clean

- ✓ Brush your teeth after getting up from bed in the morning and before going to sleep at night.
- ✓ Take regular bath and wash your face with soap.
- ✓ Keep your nails short and clean.

Wash hands with clean water and soap repeatedly

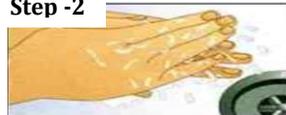
- ✓ Wash your hands after going to the toilet or cleaning a baby's bottom
- ✓ Wash your hands after touching animals or cleaning their sheds
- ✓ Wash your hands before eating and feeding children



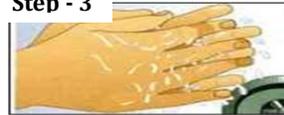
Step - 1



Step - 2



Step - 3



Step - 4



Step - 5



Step - 6



2. Keep your household and its surrounding clean

Keep your household clean and safe

- ✓ Arrange soap and water at cooking place, child feeding place and toilet
- ✓ Remove household waste and dirty water from the homestead area
- ✓ Remove human and animal feces from the homestead area
- ✓ Keep livestock away from the household and ensure clean and hygienic shed for domestic animals

3. Store foods safely

- ✓ Cover foods with lids, food cover or a clean cloth to protect them from insects, pests and dust
- ✓ If you have stored food between meals, reheat it to high temperatures (boiling) just before serving

4. Use only safe water

- ✓ For cooking and drinking use only safe water, such as green tube well or water from a protected source.
- ✓ Collect water in a clean container and store it covered.
- ✓ Don't touch clean water with unclean spoons, utensils or hands.
- ✓ Never put food or water in empty containers that have been used for chemicals/pesticides/detergents



Lack of good hygiene causes disease and illness



Making a tippy tap

Installing a tippy tap is a simple and cheap way of ensuring that you can easily wash hands in critical places: **near the latrine, eating area, food preparation area and poultry and livestock sheds.**

To build a tippy tap we need:

- A clean plastic bottle
- A rope or string
- A small knife or a nail
- A candle
- Matches
- A soap
- If possible a net bag



Pict. Equipment needed to build a tippy tap

Source: SPRING promotion materials – How to Build Your own Tippy Tap

The procedure:

1. Heat up the knife or nail over the candle and use it to make a hole in the side plastic bottle, low and close to its bottom.
2. Fill the bottle with water and close the cap tight and tie the bottle to the pole with strings. Place tippy taps near to the critical areas: Latrine, food preparation and eating areas.
3. Hang soap in a net next to each bottle.
4. Open the cap slightly and the water will come out through the hole.
5. Wash your hands with water and soap



Pict. A tippy tap installed on a tree

Source: SPRING promotion materials – How to Build Your own Tippy Tap



Pict. A girl using a tippy tap

Source: SPRING promotion materials – How to Build Your own Tippy Tap



Food Processing and Preservation

- Year round supply of nutritious food can be ensured by processing vegetables, fruits and meat with a proper method which will allow to store it for a long time
- Effective processing and preservation methods help to reduce post-harvest lose and can be a source of income for a farmer

Methods of preserving food: drying, pickling, making preserves, chutneys, sauces and others.



Various fruits, vegetables, pulses, fish and meat can be stored throughout the year thanks to using preservation methods

Drying: can be used to all sorts of foods

- Blanching before drying and drying in a shade minimizes nutrient loses and dried foods remain nutritious
- Dried fruits make excellent nutritious snacks

Pickling: can be used to preserve sour fruits

- Pickling combines salting and fermentation to avoid spoilage of food
- Pickles will last long without spoilage if oil in the jar entirely covers all its content
- Sour pickles should be served preferably with blood building foods in order to enhance its utilisation

Preserves: can be used to preserve fruits and some vegetables

- Preserves are made from mature fruits and vegetables by cooking little pieces in heavy sugar syrup until it becomes tender and transparent.

Chutneys: can be used to preserve vegetables and fruits

- Chutneys are made of vegetables and fruits by cooking them with spices and salt and adding vinegar



Home Food Safety and Food Preparation Techniques

Hygienic handling of vegetables and fruits

- Wash hands thoroughly with soap and clean water before handling and preparing food.
- Keep food preparation surfaces clean.
- Use clean, carefully washed dishes and utensils to store, prepare, serve and eat food.
- Wash vegetables and fruits thoroughly using clean safe water before using in salads or chutneys.



Food preparation techniques for minimizing nutrient losses

- Wash fruits and vegetables before cutting. If you wash them after cutting, many nutrients will be lost.
- When you peel fruits and vegetables remove as thin layer as possible. Under the peel many nutrients are stored.
- Always cut big pieces of vegetables for cooking. The smaller pieces are the more nutrients are lost during cooking.
- Cut fruits and vegetables right before cooking or eating them. If you cut them way before cooking, many nutrients will be lost.
- Never keep cut vegetables and fruits in water. If you keep cut vegetables and fruits in water, many nutrients will be lost.
- If you have water after cooking vegetables, do not discard it but use it in dal, soups or in dough for roti. This way you will keep nutrients from vegetables in your food.
- Dark green leafy vegetables should be cooked for a minimal time required and no more than ten minutes. If you cook them for long time, nutrients will be lost.
- While preparing soups, curries or liquid gravy preparations, cook the slowest cooking ingredient first. Then add other ingredients which require less cooking time. This way you will preserve more nutrients.
- Wash rice no more than 2-3 times before cooking.
- Cook rice using absorption method. If you have some excess of water after cooking rice, use it for soup or dal. This way you will keep nutrients from rice in your food.
- Always add salt at the end of cooking. If you add it at the beginning, iodine will be lost.
- It is healthy to eat vegetables raw, fresh or without overcooking.

