

Dear Reader,

Farmers across the country have found themselves in a tussle of opinions about the recently lifted ban on Genetically Modified crops. Stakeholders from various sectors put up a case for what they see should be ideal for the good of everyone in mitigating the throes of famine, resulting from long bouts of drought. The organic agriculture sector has been on the fore to emphasize the need to conserve the indigenous seeds for their significant role in nutrition and food security.

In a recently organized Indigenous Seeds and Food Culture Harvest Fair at the National Museums of Kenya, farmers and actors concerned with indigenous foods exhibited seeds and traditional food varieties sharing their sentiments about the primacy of the traditional food crops. The fair provided a forum to discuss issues of traditional seed conservation, biopiracy and the threat to local seeds by genetically modified (GM) seeds. Biovision Africa Trust had the honour to be part of this fair as the Executive Director, who is also a member of the committee of the multisectoral team of experts reviewing the National Seed Policy was invited to make a presentation. It was an opportunity for sector representatives to share ideas on this cause of making the country food secure despite the challenging climatic conditions.

This edition features a main article on the value of indigenous seeds and traditional foods that are facing the threat of extinction; a glaring pitfall that is irreversible unless efforts are put in to reclaim the prestige of the indigenous foods that are gradually exiting the stage.



Farmers in Kirinyaga County enjoy a new lease of life as they shift to organic farming

By Caroline Mwendwa

As farmers grapple with the effects of climate change, they face numerous challenges that require resources to tackle. For the small holder farmer, the resources can be out of reach, hence requiring farmers to be creative and innovative in using resources within their reach to make organic and environmentally friendly inputs. Making these inputs requires knowledge and sometimes training on ecological organic agriculture. Biovision Africa Trust (BvAT) through the Farmer Communication Outreach programme reaches farmers in their localities with this training.

Farmers from Kirinyaga County are a testimony that this knowledge can change farmers' unpleasant experiences by providing solutions to the common challenges experienced in their farm.

Nelson Kihara Gathumbi is one such farmer whose encounter with extensionists from Biovision Africa Trust (BvAT) has changed his farming experience in a way he did not anticipate. To start, he put aside a portion of his one-acre piece of land to grow crops organically and as he progressed, he noticed when the heat is too much and water

scarcity is hard hitting, the organically grown crops remain resilient, green, and still bear fruits. His fruit farm where he grows oranges, pawpaws, avocados, pomegranates, lemons, and mangoes, shows this difference very clearly. He also demonstrates using the oranges in his farm, how indigenous plants remain resilient in the scorching heat and still yield healthy fruits, while the grafted ones give in to the dry weather and shed off flowers easily.

Kihara is excited to fully embrace organic farming even as he establishes a food forest of fruit trees. Kihara has grasped the idea of planting trees and is already planning to establish an apiary adjacent to his garden to ensure his fruit trees yield optimally. "Pomegranates and macadamia nuts are highly resilient, and will do well even if rains fail," he says.

Some of the ecologically sustainable farming technologies that have had a huge impact in his farming enterprise include making compost manure and making plant tea to use as foliar for the crops and soil fertilizer. "I was trained by Peter Murage of Biovision Africa Trust to mix tithonia and marigold, crush them and mix with water then use the extract

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Celebrating the richness of traditional foods

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to spray on the crops,” explains Kihara. This he says has helped him manage a variety of pests in his farm and enhance crop productivity as it also serves as foliar for the plants. Tithonia is rich in phosphorous and so as the mixture controls pest prevalence, it also enriches the crops with nutrients.

Mr. Kihara is a champion of organic farming and together with his community members, they started Community Organic Farmers’ Association, (COFA) whose vision is to see a society aware of the dangers that chemical pesticide and improper farming methods pose to health of human beings, animals, and the environment. COFA focuses on training farmers on sustainable agriculture, value addition, development of cottage industries, among others. Members benefit from programmes that aid them in crop production, animal keeping, bee keeping, environmental conservation among others.

Mr. Bethwell Gathirimu from Mkiithi village in Baricho, Kirinyaga County who is also the chairperson of COFA, is another farmer who has exemplarily adopted organic farming, through interaction with Nelly Wambui BvAT’s farmer field officer based in Kagio. Entering his compound, you will spot heaps of organic manure composted using animal manure from his dairy cattle and plant residues from his farm, where he grows macadamia, maize, beans, and vegetables. *“I produce all my crops organically, and that is why, I ensure to have constant supply of manure, so that I do not resort to synthetic soil fertilizers,”* says Gathirimu. Mr. Gathirimu’s farm hosts an apiary of bees, which produces honey for sale as well as use in his homestead. *“I have 12 beehives in my apiary, and for sure bee keeping is an underrated farming activity. With bees in the farm, crops yield increases significantly, and as a farmer you have constant supply of honey, for your family and surplus to earn an income from,”* says Mr. Gathirimu.

This enterprising group of farmers through the CDF project recently acquired material to harvest honey, and coffee threshers, which they say will be highly beneficial in setting up cottage industries within their community.

Ms. Florence Mutugi, from Kianjege village, Njega in Kirinyaga County, feels lucky to have met Nelly of Bio-vision Africa Trust, early this year. Her

interest to learn about organic farming has driven her to try out various techniques and employ skills she obtains especially, making ash brew and plant tea to use in nourishing her crops. Despite the long dry seasons and the rising costs of fertilizers, Florence has been enjoying vegetables from the vertical gardens she established after acquiring this technology from a training offered by Nelly. *“If you walk around this village, you will hardly find a home with green vegetables due to water scarcity, but this garden is always green as recycled water from the homestead is enough to sustain it,”* she says.

Florence has also embraced bee keeping as part of integrated farming and has two large beehives in her farm. She is excited to expand her apiary with more hives. The mother of two is already appreciating the benefits of organic farming. *“Most farmers shy away from converting to organic farming, afraid that their farms will not yield as much as they are used to when they grow crops conventionally. Yet, I have come to see that conventionally grown crops cannot withstand extreme weather, neither can they grow in areas with water scarcity,”* she says. *In organic farming, the soil’s fertility is enhanced and hence crops have sufficient nutrients and prove to be more resilient to unfavorable conditions,”* she concludes.

Conclusion

Evolution results from human beings’ effort to find solutions to challenges that limit fullness of life. We are all suffering the effects of unsustainable farming practices and the sooner this practice is reversed the better. The alternative to chemical overuse in farming, is embracing ecological organic agriculture. Farmers in Kirinyaga County have demonstrated that organic farming has far more benefits and there are avenues of acquiring the required skills to venture in this kind of farming. There is no room for indifference when it comes to food production as we are all bearing the brunt of irresponsible application of farm inputs on food. Let us all take charge of making choices that improve the quality of our life by promoting organic food production.

<https://infonet-biovision.org/EnvironmentalHealth/What-Organic-Agriculture>

Nutritional value of terere vegetables and how to prepare the seeds

By Mary Mutisya

Terere, lidodo, alika or muchicha are the common names used for amaranth (*Amaranthus viridis*) among different communities in Kenya. Amaranth is a fast-growing annual crop belonging to the amarantaceae family. Over seventy species of amaranth have been documented to date, being grouped as vegetables, grains, or ornaments. For vegetable, the two most common species are the *Amaranthus dubiosus* and *Amaranthus tricolour*. For the grain species, *Amaranthus hypochondrius* and *Amaranthus creuntis* are the most common species.

Growth conditions

Amaranth is a diverse crop that does well in a wide range of environmental conditions. For optimum performance though, an altitude of at least 2000 masl, warm temperatures of 22-30° and deep well drained soils with low acidity levels are desirable.



Nutritional benefits of terere seeds

Amaranth has met the criteria of being classified as a superfood and its many health benefits have given it the name “amazing/glorious amaranth” among researchers. Its health benefits are;

- Amaranth seeds contain double



the amount of calcium found in milk, making it excellent for formation of strong bones and teeth.

- Unlike many cereals, amaranth seeds are rich in lysine, an essential amino acid that is important in the manufacture of red blood cells in the bone marrow, conversion of carbohydrates into energy as well as production of DNA and RNA.
- The digestibility of cooked amaranth seeds is up to 90%. It's hence recommended for the elderly, those who have been through long fasting, starvation and for weaning babies.
- Amaranth is a good immune booster and can thus be used for individuals with compromised immunity, the elderly and those who are severely malnourished.
- Amaranth seeds are gluten free and therefore favourable to people with celiac disease (gluten intolerant).
- Amaranth seeds contain at least 16% protein, 56% oil, zinc, calcium, phosphorus, dietary fibre, and the water-soluble vitamins (A, D, E, K).
- The high fibre level in amaranth helps improve digestion, helping in weight reduction and management.
- Amaranth seeds are rich in iron, vit A, essential minerals such as magnesium, calcium, phosphorus, zinc, manganese, copper, and potassium.

These minerals play an important role in improving immunity, formation of red blood cells, strong bones, and teeth.

N.B./Since amaranth can easily blend with other cereals; their nutritional benefits have been harnessed through such mixtures.

How to prepare terere seeds

Harvesting

Amaranth seeds are ready for harvesting about 3 months after planting when they begin to fall off from the flower head (tassel). The best way to harvest the seeds is by cutting, hang drying the heads and then winnowing to get the clean seeds. After harvesting, proper drying is necessary to prevent the seeds from moulding. The seeds need to be stirred around occasionally until they are completely dry. Storage should be in airtight containers in a cool dry place for up to 6 months.

Preparation of terere seeds for consumption

Although there are no known toxicities associated with amaranth seeds, these seeds should not be eaten raw. Like many other cereals, they contain anti-nutrients like oxalates and

phytates which can bind to vitamins and minerals making them unavailable to the body.

The seeds can be cooked directly without soaking but if one has time, soaking can be done overnight. This makes their nutrients easier to digest and shortens the cooking time.

Several recipes of preparing amaranth are available depending on what one wants, but the common ones are:

- Amaranth seeds can be toasted over a heated pan for at least 15 minutes and then used as a snack or added in breakfast cereals/recipes.
- Amaranth can also be mixed with water (one cup of amaranth should be mixed with one and a half cup of water), boiled for 20 minutes and eaten as is.
- Dried amaranth seeds can be ground into flour and mixed with other ingredients then used to make different recipes.

A common recipe that can be used for weaning babies

Ingredients

- 1/4 cup of amaranth flour
- 5 cups of water
- 5-6 teaspoons of sugar
- 1/4 litre of milk (can be fresh or sour)
- A citrus fruit (Lemon, orange etc.) optional

Method

1. In a cooking pot (sufuria), bring the water to boil.
2. Use 2 cups cold water and mix it with one cup of flour.
3. Add the mixture to the rest of the water and continue stirring to ensure that no lumps are formed and that the flour binds and starts boiling.
4. Let the porridge continue boiling for a further 15 minutes.
5. Let this simmer for a further 5 minutes.
6. Remove the heat and let the porridge cool down before squeezing in the citrus fruit juice (this is because the vitamin c in citrus fruits is heat unstable and could be destroyed when added to the boiling porridge).

<https://infonet-biovision.org/PlantHealth/Indigenous/Amaranth>

Celebrating the richness of traditional foods

By Dr. Patrick Maundu

Introduction

Kenya held its first Indigenous Seeds and Food Culture Harvest Fair at the National Museums of Kenya from 12-14 in October 2022. In this fair issues of traditional seed conservation, biopiracy and the threat to local seeds by genetically modified (GM) were discussed both in plenary and in a seed and traditional food exhibition taking place in the compound. The theme of the fair attracted unusual attention as Kenya, early in the same month had lifted a 10-year ban on the cultivation and importation of GM crops which were seen as a threat to local seed varieties – but to others, a solution to providing food to millions of hungry residents following one of the worst droughts to hit the region.

The emotive subject of GMOs aside, farmers displaying their seeds at the traditional seed and food fair felt that traditional seed resources had been lost due to the failure of responsible institutions to support traditional seed and food systems – instead, the seeds had been vilified as uncertified and low yielding, a claim Mary Omoke, an exhibitor said was untrue, and a gimmick by commercial seed companies to discredit local seeds. 'Our traditional maize is tastier, more adapted to local conditions, gives more flour and we can process it with our traditional implements and above all is more nutritious', she said as she displayed her large multicolour traditional maize cobs.

Traditional maize e.g. muzihana of the Jibana people of coastal Kenya comes in many colours such as orange, yellow, pink, red, purple, indigo



Figure 1 Sorghum on display during the Indigenous Seeds and Food Culture Harvest Fair held at the National Museums of Kenya, October 2022.

and blue. The maize is much healthier than the highly promoted white hybrid maize. The traditional types are coloured mainly due to anthocyanins and carotenoids (such as beta-carotene, a precursor to vitamin A) and lutein (in yellow maize) which is good for eye health.

'Our laws favour multinationals – not the ordinary farmer', she adds. Their (genetically modified) seeds produce sterile seeds at harvest, preventing the farmer from replanting the same seed, thus forcing farmers to buy seed every planting season. They also want their seeds grown solely (monocropping) while in our traditional systems, we intercrop to ensure the soil remains healthy and the field has a high crop diversity so that the family has good access to most nutrients it needs. Even sharing seeds with your daughter when she visits is outlawed in our country. Our law-makers have let us down (referring to the Seed and Plant Varieties Act (2012) which prohibits anyone from sharing, exchanging or selling uncertified and unregistered seed).

Traditional multi-coloured maize is just one of the many traditional food and food seed displayed by farmers from all over the country. The exhibition also featured local vegetables, of which there are over 200 in Kenya, most of which are more nutritious than the cabbage- which people are used to. *Saga* or spider plant for example has up to 150 times the amount of beta-carotene than found in white cabbage and seven to ten times as much iron, an important element in the manufacture of blood. Traditional sources of starch like cassava, sorghum, plantain, pearl millet and finger millet and their products such as porridge were also on display.



Figure 2 Coloured traditional maize is more nutritious than the popular white hybrid maize.

'You stay full and feel stronger with these traditional starches,' adds Mrs Peninah Mwangangi of Kitui County. Typically local cereals and cassava have low glycaemic index (GI), meaning they have a low potential to raise glucose concentration in the blood after a meal.

Also on display at the fair were local tubers like aerial yams, known as matugu or liruku in western Kenya, Meru yams, a variety of local pulses like Bambara nuts and lablab beans (njahi), edible insects, edible rodents, edible fungi and implements that are used in food production.

The baobab

Baobab fruits stood out as one of the most popular indigenous fruits. Products displayed ranged from sour-sweet cream pulp to coloured pulp-coated seed (mabuyu)- quite popular with children; yellow-orange baobab seed oil mainly used in the cosmetics industry. The fruit turned out to have great economic potential for Kenya and rest of Africa where it grows.



Figure 3 A baobab tree in Jibana, Kilifi

Like the coconut palm, every part of the baobab has some use. 'Baobab is second to coconut', says Dubi Dzua, an elder from Kaya Kambe. 'We use its leaves while its fruit pulp is used for flavouring a type of small fish known locally as *kata shingo*. Baobab leaves are pounded in a mortar and mixed with



pounded cassava leaves. Eaten alone, the vegetable is slimy and so it is mixed with other vegetables such as cassava leaves to make a sauce. Among the Mijikenda, baobab shells are made into utensils like *kaha* (a ladle), *kata* (a ladle for drawing water), *muhoto* (rodent trap) and drinking cups. In Kitui, a strong fibre is obtained from the trunk. It is used for weaving local baskets.

Fruits and the fruit pulp are a source of income while the tree may trap water in its hollow trunks providing shelter in such caves.

The white to cream pulp of baobab fruits has one of the highest concentrations of vitamin C in plant foods, six to ten times that of an orange but it is also rich in other minerals. The pulp is made into a sauce to accompany ugali, the local staple food. Pulp with seed is crushed, the product sieved, mixed with sour milk and made into a ready to eat meal known as *kinaa*.

Most pulp and seed producers separate the pulp from the seed manually, quite a tedious undertaking. Machines for processing the pulp and also for cold-pressing to get oil are available but their cost is still beyond the reach of most small-scale farmers.

Pricy seed oil

One of the products displayed at the exhibition was the baobab seed oil. This fetches good money in the European markets. The oil is rich in nutrients with many health benefits. Baobab oil is rich in omega-3 fatty acids and other fats as well as antioxidants - vitamins A, C and E, and hence used in cosmetics and skin care as a skin moisturizer and anti-inflammatory as in skin irritations. It prevents the skin from drying out, and keeps the skin soft and smooth. It can even help with skin conditions like eczema.

Baobab leaves

Baobab leaves often sprout from a leafless tree during the dry season -



Figure 4 Kambe women getting ready to prepare baobab leaves and a meal flavoured with baobab pulp.

a time when there are no other vegetables available. Salome Tsalama Mbetsa, a Jibana in Kilifi pounds the leaves using a mortar and pestle and mixes the product with pounded cassava leaves then cooks. The mixture is very nutritious.

Seasonality

The tree remains leafless for most of the year. In Kenya, this tree is found from between Meru and Embu counties and the coastal part of Kenya. At the coastal part of Kenya, the tree puts out new leaves in November and December. Then soon after follows the sprouting of large, short-lived flowers which open at night and are pollinated by night animals including insects and bats. The coastal people believe there are male and female baobabs, which may flower and produce leaves at different times.

Other uses

The fruit shell is made into a variety of household items, including cups and containers that are also used for tap-



Figure 5 A rodent trap made from a baobab fruit shell, Jibana, Kilifi

ping palm wine. The shell is also used for making traps for certain types of rodents (e.g. pingi, tali, fuko etc) that are considered a delicacy among the Mijikenda. The trunk of a young baobab is also a source of fibre used for making ropes, baskets and in construction.

The live tree is a habitat for many types of animals. Decaying trunks support a type of edible fungus called *zhoga muyu*. After several years, the wood rots away, fertilizing the surrounding soil.

Potential in nutrition and food security

The baobab fruit and leaves are ready for use at a time when both fruits and vegetables are rare in both rural and urban centres.

Leaves are used fresh. Locals are not yet used to dry leaves but drying has potential to provide leaves during the dry period.

Facts about baobab

A baobab tree can live for over a thousand years. Chivatsi Samue Kiringal, 60 a Ribe and keeper of the largest baobab in Kenya says a baobab can take up to 60 years before it starts fruiting and at that time it is only about 2.5 to 3ft (76-91 cm) in diameter.

Baobabs may fall on their own, particularly if growing on shallow soil with rock underneath. Even after falling, a baobab tree continues to send out new shoots. A cut tree may take several years before it dies off.





Threats

The baobab is a tree in danger. The tree occupies a lot of space. Yet demand for land to grow crops and construction is on the increase with increasing population. In Kilifi, the author has witnessed trees being cut. They are often ringed and then burned.

New uses like the use of the wood to make ceiling boards are putting this age old tree in more danger.



Figure 6 Baobab researchers, Lucy Kariuki and James Kioko examine a felled baobab tree in Rabai, Kilifi. Sept 2022.

Protecting indigenous trees from biopiracy

In October 2022, at about the time of the seed fair held at the National Museums of Kenya, a story on baobab biopiracy appeared in local and international media showing pictures of uprooted baobab trees cushioned in a metal cage, branches sawn off but the trunk and roots intact, ready for shipment to the US. The sight was reminiscent of a caged elephant ready for translocation. The reason given by the contractors was to save the trees. Did they really have to be saved out of their habitat?

The baobab is a sacred plant to many communities and the very act of uprooting and exporting it is against local belief systems.

<https://infonet-biovision.org/EnvironmentalHealth/Trees/Baobab>



Soil moisture conservation tactics in an increasingly drier environment

By Evelyn Night

The persistent drought has gotten us all worried about the sustainability of food production, especially in East Africa. Indeed, there is no escaping the inevitable skyrocketing in food and feed prices that might hit if the erratic rain patterns would proceed. Farming in these hard times is therefore harder than most, and farmers have to find thoughtful ways to maintain production, especially in the face of water scarcity.

Soil moisture not only provides water for plant processes but also preserves below-ground nutrients and beneficial organisms responsible for soil fertility. The soil itself is a complex and dynamic environment that the farmer has to consider when planning to cultivate.

Since drought and desertification are our major concerns, we need to find sustainable ways of conserving moisture and preventing its loss from the plants. Soil moisture conservation is an important element of agricultural sustainability and without it, the production of the essential crops to sustain life is not possible. While irrigation has sustained plants for ages, the increasingly changing climate has reduced rain and water availability, and consequently the productivity of farmed crops. It is thus important for farmers to find alternative ways to conserve soil moisture and augment soil productivity to secure their livelihoods against famine as well as provide nations with food.

Soil moisture is majorly lost through the direct exposure of the soil surface to the relentless heat and sun. Farmers have to therefore limit the direct contact between the soil and the hot sun by using natural organic methods that also improve the plant's nutrition and tolerance to drought and other el-

ements (pests, diseases, chemicals) for sustained and improved food security.

There are already several methods in practice to not only conserve soil moisture but also to protect and supply essential nutrients to their farms. The main principle behind these is to physically restrict the contact between dry heat and the soil and improve nutritional capacity. These techniques include but are not limited to:

1. Cover cropping

Growing leafy and fast-growing plants with your target crops ensures the soil surface is covered with foliage in no time. To maximize the benefits of cover crops, you may cultivate leguminous crops like *Desmodium* and pulses with your target crops. These will not only improve water retention by the soil but also its nutrient profile through the fixing of nitrogen. Before adopting cover crops, however, ensure that the selected crop is compatible with your target crop to limit cross-contamination by specialized pests and diseases. For *Desmodium*, you may also consider root pruning to prevent the competition for nutrients that occurs between the legume and its accompanying plant.

2. Mulching

Similar to cover crops, mulches also preserve ground moisture as well as provide additional nutrients to your soil. A mulch is either wet or dry leaf and stem cuttings that are placed on the ground between the rows of your crop. Mulches should also cover the area around the root of your crops such that the whole farm is covered. Mulches prevent direct heat from reaching the ground and subsequent evaporation of moisture. As they decompose, the plant parts in the mulch also release essential nutrients such

as nitrogen in the soil that provide the plant health benefits to your crops.

3. Planting (Zai) Pits



Zai pits are proactive methods for conserving soil moisture as well as increasing the nutrient competency of your farm soil. The pits, which are dug across the entire farm, work by acting as below-ground water basins. When the soil is irrigated, the pits hold water longer than the ground around them. Pits are dug across the entire farm, after which dry leaves, compost, and biochar (lightweight charcoal for soil amendment) are mixed with the soil to form a rich organic bed onto which the target crop is cultivated. Water holding capacity is promoted by biochar hence the pits are more efficient in preserving water than other moisture preservation techniques. The greatest advantage to using pits is that it also creates a micro-environment around the crops that is more accommodating especially in dry weather.

4. Shading



Dry winds and excessive heat make your plants thirsty and stressed. Using a shade net, therefore, is a mechanical way of limiting leaf exposure to excess evaporation. Additionally, the nets may limit the exposure of your plants to some pests and pesticides carried

by the air from neighboring plots. Nets that may be used for this vary in shape, color, and form. Special nets have been made for the farming of different crops and these are available in major shops selling farm supplies. Alternatively, you may also use an old mosquito net. You may put your entire farm in a shade net though also using the net as a 'roof' over your crops is also acknowledged.

5. Soil cover using stalks

After harvesting cereal crops such as maize, farmers tend to feed the stalks to livestock or use them for fuel. While these uses are also beneficial, they rob the farm soil of its much-needed shade. Conservation agriculture recommends that the stalks may be felled and used to cover the soil while waiting for a new planting season. The physical covering of the soil and augmentation of nutrients by the decomposing stalks ensure the farm is well protected and supported before the next planting season.



The importance of food availability and security cannot be ignored especially in the face of climate change and the ever-increasing world population. As farmers, we are challenged to adopt these ecosystem-preserving and climate-resilient agricultural techniques to sustain human and the overall ecosystem health to combat the detrimental effects of climate change.

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<https://infonet-biovision.org/PlantHealth/Mulching>

<https://infonet-biovision.org/EnvironmentalHealth/Soil-cover>

Treat your body with organically grown choice food from your farm

By Samuel Monene

Lifestyle diseases, also known as Non Communicable Diseases (NCDs) are on an all time high. Lifestyle diseases describe those diseases whose occurrence is primarily based on the daily habits of people and are a result of an improper relationship of people with their environment. NCDs most often are a result of behavioral agents such as smoking, unhealthy diet, and physical inactivity. Research published by the World Health Organization in 2005 indicated that 61% of all deaths and 49% of global burden of disease were directly attributed to NCDs. According to the publication, 80% of deaths linked to NCDs will occur in low- and middle-income countries which are characterized by inadequate health facilities, nutritional deficiencies and an increasing burden of infectious diseases.

The most common lifestyle diseases are cardiovascular diseases (heart related problems), cancer, chronic respiratory diseases and diabetes. Studies show that all these diseases can be avoided if proper measures are adopted early on in life, or even in the early stages of disease diagnosis. The human body is an engineering marvel as it is able to reverse certain conditions with the proper care. There are cases where people diagnosed with non-communicable diseases have recovered after adopting healthy habits alongside medication. Though the changes often take time, the general health improves over time.

These conditions are common among most retirees, but with adjustment on feeding and body habits they can be reversed. Mutonya Njung'e, a retired teacher from Ndeiya in Limuru, has embraced and adopted dietary changes thus transforming his life and that of his household. Mr. Njung'e decided to change his diet when he was diagnosed with diabetes and high blood pressure. He realized that reducing the amount of sugar intake and increasing activity would go a long way in managing these two conditions. "When I was diagnosed with diabetes and high blood pressure, I resolved to cut down processed sugar intake, be more active, and increase my intake of fresh organically grown vegetables and fresh juice from fruits," he says. Even though, he is taking medication to



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manage the diseases, Mr. Njung'e appreciates that improved diet and body activity helps in managing the non-communicable diseases, as well as reducing the risk.

However, it should be noted that this does not negate nor downplay the role of modern medicine but rather complements it by giving the body energy, essential nutrients and minerals required to assist and boost the body's ability to heal itself.

Naturopathic approach to managing NCDs

1. Cardiovascular Diseases (CVDs)

CVDs refer to disorders that affect the heart and blood vessels. It was the leading cause of death globally representing 32% of all deaths in 2019. It is crucial to detect CVDs early so to commence management and treatment. The following are some of the natural ways to deal with CVDs;

- Exercise more regularly but not intensive exercise. This may include brisk walking, light jogging 30-45 minutes 3-4 times a week.
- Reduced processed sugar intake substituted with natural sugars like sugarcane, stavia, dates, honey and raisins used moderately.
- Well balanced diet consisting of carbohydrates, proteins, unsaturated fats, vitamins, minerals, and water.
- Flaxseed (linseed) as a source of all essential oils in the body (Omega-3).
- Garlic that helps to reduce blood pressure, regulate the cholesterol and to prevent and repair walls of damaged blood vessel.
- Cayenne pepper to be used sparingly to reduce blood pressure as an effective blood thinner.

2. Cancer

Cancer is a disease where cells have

uncontrollable growth in the body and end up spreading to the rest of the body causing harm. It caused nearly one in every six deaths in 2020. A third of the causative factors leading to cancer are tobacco use, high body mass index (obesity/ overweight), alcohol consumption, low fruit and vegetable intake and lack of physical activity. The following are some of the natural ways to deal with cancer;

- Certain food articles have been shown to have cancer preventive effects. These include garlic, beta-carotene and ginkgo biloba.
- Higher levels of physical activity have been linked with a lower risk of cancer.
- Healthy dietary practices by minimizing consumption of processed foods.

3. Chronic Respiratory Diseases (CRD)

These are chronic diseases of the airways and other parts of the lungs. CRD is estimated to be responsible for approximately 5% of all deaths globally in 2015. The primary cause of CRD is exposure to tobacco smoke either actively or passively. Other causes include air pollution and occupational dust or fumes. The following are some of the natural ways to deal with CRD;

- Cease from smoking or areas prone to smokers.
- Avoid stuffy congested areas or near industrial centers where air pollution may be prevalent
- Take warm liquids and frequent steam baths infused with eucalyptus oil/crystals. This might be soothing and ease congestion by increasing mucus flow.
- Honey mixed with lemon or ginger facilitate in opening and clearing the res-



piratory pathways to ease air passage.

- Some studies have found that taking vitamin C (citrus fruits) intake before cold symptoms may shorten the length of time you have symptoms.

4. Diabetes

Diabetes is a chronic health condition that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces thus affecting blood sugar levels. Insulin is a hormone that regulates blood sugar. It is caused by unhealthy dietary practices, physical inactivity and a high body mass index (obese/overweight). The following are some of the natural ways to deal with diabetes;

- Adopting a healthy lifestyle not only improves the quality of life, but also helps control the body mass index.
- Being physically active helps to control body weight and also facilitates in the burning of excess fat and sugars in the bloodstream.
- Avoiding environmental factors that trigger diabetes like alcohol, tobacco, and drug consumption
- Getting enough rest to be able to manage stress levels

Conclusion

It is advisable to grow a variety of crops, mixing herbs, fruit trees, vegetables, and pulses among others to ensure that all nutrients you require to keep your family vitalized and healthy are within reach.

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https://infonet-biovision.org/nutrition_related_diseases

https://infonet-biovision.org/healthy_food

Partner organizations



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