Volume 1, 2024
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Nature & Organics
Magazine

Is the food you buy safe?

...

+ Big debate: Organic vs GMOs

Sweet fruits, juicy returns.

+ Tithonia, the wonder weed

Meet the ardent crusader of organic foods

And many more.

+ Pests to look out for when growing tomatoes

Nature & Organics Magazine

www.natureandorganics.com

HOP Note

Dear Readers,

As the Sun rises on this new year, we at Nature & Organics extend our warmest welcome to you, our valued readers. This edition marks not just the start of a fresh year, but a chance to sow seeds of change, nurture our connection to the earth, and savour the bounty of sustainable living. This issue overflows with the vibrant energy of new sprouts. We'll be diving deep into the stories of organic pioneers. Their journeys, filled with passion and resilience, inspire us to embrace mindful choices and foster a deeper connection with the food that nourishes us.

Our pages also come alive with the voices of farmers. We delve into their experiences, challenges, and triumphs as they cultivate the land with a mindful approach, prioritizing the health of both soil and community. We aim to equip you with knowledge, ignite your curiosity, and share organic solutions to some pesky problems. So dive into these pages with an open mind and a curious spirit. Whether you're a seasoned organic enthusiast, a curious newcomer or a budding green thumb, there's something for everyone.
Let the stories within inspire you and guide your choices.

Wishing you a year brimming with bountiful harvests, vibrant connections, and a shared commitment to healthy living.

Anne Mukoma

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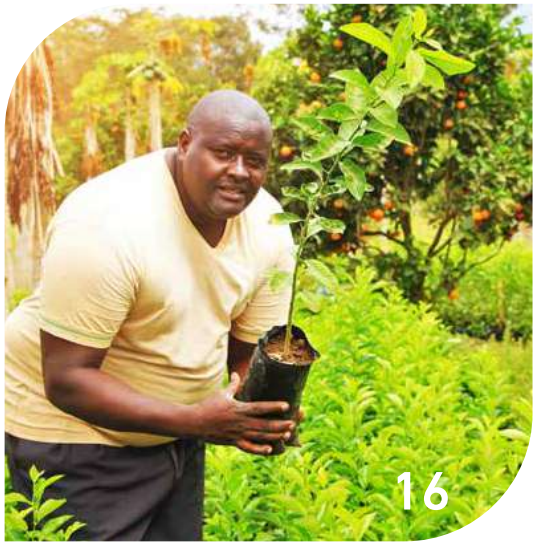

Editor's Note

Dear Reader,

Welcome to the latest issue of *Nature&Organics* in which we celebrate the beauty and benefits of living in harmony with the environment by embracing the organic way of life.

It is not a secret that organic living has emerged as an important movement towards a healthier, sustainable planet and a more vibrant future.

And this is what this magazine is dedicated to; to inspire and educate you about the myriad facets of organic living. From the foods we eat, to the products we use, this issue is brimming with insightful articles and features that will empower you to make informed choices that are not only kind to your health, but also to the environment.

Do you know that when you buy tomatoes which you don't know how they have been grown you expose yourself to up to seven chemicals? Our cover story explores this issue, and lists the harmful active ingredients in various chemicals used in the country as shown by a recent report.

We also take you on a journey through the fields of passionate organic farmers and share experiences in maintaining soil health, employing natural pest control methods, and fostering biodiversity to grow crops that are free from harmful chemicals.

Besides that, you'll also find practical advice on how to transition to organic farming as well as various plants you can use to keep pests and diseases at bay, and much more, We'd love to hear your thoughts and feedback. Feel free to reach out; let us know what you'd like to read in future issues, or if you have an organic success story of your own to share. Thank you for joining us in this exciting journey towards a more organic, sustainable, and wholesome way of life.

Kind regards,
Happy New Year

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Managing stubborn pests in a tomato crop

Dealing with obstinate pests in tomato crops grown organically can be quite a daunting task. The fact that one doesn't use synthetic pesticides makes the task even much harder as the pests find it easier to flourish. But there are several effective organic methods that can help you control and prevent pest infestations. Here are strategies for managing common stubborn vegetable pests in organic tomato farming:

Crop rotation

This helps to break the life cycle of pests. Avoid planting tomatoes or other related crops like chilli, potato, and eggplant on the same farm season after season, since this can lead to a buildup of pest populations. Rotate with non-related crops to disrupt pest cycles.

Companion planting

Some plants act as natural repellents or attract beneficial insects that prey on pests. For example, planting basil, marigold, or nasturtiums near tomatoes can help repel certain pests.

Biological control

You can use natural predators and parasites to control pest populations. Beneficial insects like ladybugs, lacewings, and parasitic wasps that prey on tomato pests like aphids and caterpillars work wonders when released on the farm.

Handpicking

Regularly scout your tomato plants and handpick larger pests such as caterpillars and beetles, and drop them into a container of soapy water to remove them from the garden. However, this method is only effective on smaller gardens.

Use of neem oil

Neem oil is a natural insecticide that can be used to control various tomato pests. It works by interfering with the feeding and growth of insects like aphids, whiteflies and mites.

Floating row covers

Cover your tomato plants with lightweight, breathable fabric to prevent pests from reaching them. This method works well for protecting young plants from flying insects.

Diatomaceous earth

This fine powder, made from fossilised remains of diatoms, can be dusted on tomato plants to control crawling insects like slugs, snails, and some soft-bodied pests. It is naturally occurring and consists of microscopic algae — known as diatoms — that have fossilised over years. When the chemical comes into contact with an insect, the silica in it removes its waxy outer coating, making it unable to retain water and dies of dehydration.

Trap crops

Plant trap crops nearby to lure pests away from your tomatoes. For example, planting a few sacrificial tomato plants away from the main crop can attract pests like aphids, drawing them away from the rest of the plants.

Kaolin clay

Applying a thin layer of kaolin or China clay on tomato leaves can create a physical barrier that deters certain pests and reduces feeding damage. Normally, the Kaolin clay is used in the manufacture of porcelain and china as well as in the production of paper, paint, rubber, and heat resistant materials. When applied on plant leaves, it works by covering the leaves and fruit with a white powdery film, which d irritates insects, thence keeping them at bay.

Healthy soil management

Ensure that your soil is rich in organic matter and nutrients can help your tomato plants withstand pest pressures better. Healthy plants are more resilient and better equipped to fend off pests.

That said, pest management in organic farming often relies on a combination of strategies. Monitoring your tomato plants regularly and taking action early can help prevent pest populations from getting out of control. By promoting biodiversity and using natural pest control methods, you can effectively manage stubborn vegetable pests in tomato crops while maintaining the principles of organic agriculture.

PESTS

to look out for when growing tomatoes

Aphids

Ladybugs (above) and lacewings are natural predators that can help control aphid populations. Aphids are small, soft-bodied insects that feed on tomato sap, causing distorted growth and transmitting viral diseases. .

Whiteflies

These are tiny, flying insects that feed on tomato plants' sap andtransmit viral diseases. They can weaken the plant and cause yellowing of leaves. Yellow sticky traps and biological control with Encarsia wasps are used to manage whiteflies in organic systems.

Colorado potato beetle

While primarily affecting potatoes, these beetles can also damage tomato plants by feeding on leaves. Crop rotation and handpicking are organic management options.

Fruitworms

These caterpillars feed on tomato fruits, causing direct damage and opening the way for pathogens. Handpicking and Bacillus thuringiensis (Bt) products are organic control options.

Tomato hornworm

The large, green caterpillars of the tomato hornworm can devour leaves and fruits rapidly. Handpicking and encouraging natural predators like parasitic wasps are common organic control methods.

Thrips

Thrips are tiny insects that damage tomato leaves and fruits by piercing and sucking tissues. Reflective mulches and beneficial insects can be used in organic farming to control thrips.

Cutworms

They are caterpillars that cut through tomato stems at the soil level, causing severe damage. Physical barriers and traps can be used to prevent cutworm damage.

Leaf miners

These small flies that include Tuta absoluta lay eggs on tomato leaves, and the larvae tunnel through the leaf tissue, causing "mines" or tunnels. Neem oil and beneficial insects like parasitic wasps can help control leaf miners in organic systems.

Spider mites

These tiny arachnids feed on tomato plant sap and cause leaf stippling and discoloration. Regularly spray the plants with water, and releasing predatory mites can help control spider mite populations organically.
To effectively manage these pests in organic farming, a combination of preventive measures, including cultural and biological controls, are often employed. It's essential for farmers to promote biodiversity, conserve natural enemies, and adopt sustainable practices to minimise the impact of pests on tomato crops while maintaining the principles of organic agriculture.

PASSIONATE CRUSADER OF ORGANIC FOODS

Dr Peter Mokaya is the Director and CEO of Organic Consumers Alliance, an organisation that advocates for increased consumption of organic foods for the good individual health and protection of the environment.

The Johns Hopkins School of Public Health and University of Nairobi medical school trained public health physician, and health development practitioner believes consumption of foods that have been grown without chemicals is one of the preventive strategies in reducing the disease burden.

He spoke to "Nature& Organics" on why organic farming and foods are the future of better health and sustainable crop production.

Why do you advocate for organic farming and foods?

Most of the diseases many people suffer from arise mainly from environmental toxins, diet and related lifestyle behaviours. And these are things we have the power to change through integrated preventive approach. The consumption of organic foods is one way to reduce diseases like cancers, which have been linked to misuse of pesticides by farmers. Besides that, the use of inorganic practices to produce food has been linked to food insecurity, poverty, loss of bio-diversity and climate change.

What are some the misconceptions about organic farming that you would like to correct?

First is that organic agriculture and foods are a new creation. Organic food systems have existed since many years ago. Our fore fathers grew food without using synthetic fertilisers and chemicals, and using seeds saved from previous harvest and they fed their families and communities.

This means organic farming dates back to human existence. The current system of food production where we heavily rely on chemicals is foreign to Africans in particular.
Another misconception I would like to correct is that organic foods are expensive. If one farms without synthetic chemicals, that means they are spending less on production, then how can such food be expensive?
This is a misunderstanding that has been perpetuated by those who want to keep organic foods out of the ordinary people because they are better than inorganic ones.
Organic or indigenous seeds can self reproduce, thus, removing the need to buy new seeds with every season. Lastly, there are claims that organic agriculture cannot feed the world. But if we are talking of using regenerative practices, that means we are using sustainable methods that enhance more yields in the long-term. This means organic farming can feed the world, but it is not a quick fix.

What are the benefits of organic agriculture?

Organic farming is part of regenerative or sustainable practice that helps in healing the soil. It offers better alternatives to inorganic farming.
You see, instead of applying a nitrogenous fertiliser in the soil, in organic farming, one uses mixed cropping where they for instance plant maize and beans, with the later fixing nitrogen in the soil.
Instead of applying pesticides, one intercrops for instance onions with tomatoes, with the former helping to keep pests at bay. It has also been documented that quality traditional seeds have much higher resistance to diseases, pests and climatic stress than the hybrid ones.
Therefore, we should encourage use of traditional seeds, a majority which are dying. Further, absence of synthetic inputs create suitable habitats for micro-organisms and wildlife that helps regenerate soils.

Why do you advocate for organic farming and foods?

It may be harder to change the older farmers, but we should turn to the youth, a good number who are practicing organic farming.
Let's use the successful ones to tell others that this is doable, less costly, and it's good for our health and environment, and is profitable. Once the many youths get into organic farming, they will change the current order and it would be a win for our environment and health.

In terms of practice, what is your estimate on the number of farmers engaged in organic farming in Kenya?

I would say they are millions because this is the kind of farming our grandfathers engaged in but officially, the government puts it at 5 per cent, but unofficially we can say they are 15 per cent. But this number is under threat especially with programmes like subsidised fertiser going on. While such initiatives may raise food production in the short-term, they are damaging to the environment as they increase carbondioxide in the environment worsening climate change effects.

Tell more about your institution - Organic Consumers Alliance

We are an association of both individual and corporate members who are committed to the promotion of organic food and farming practices.
We create awareness on regenerative and agro-ecological agriculture as a sustainable way of farming.
Currently, our membership is free to anyone who is a consumer. We are in East Africa, but mainly Kenya and Kampala, and have networks across the world, what make us a global institution.

ORGANIC VS GMOS

As organic farming, as well as the growing of genetically modified crops, gain currency in the country and across the world, some people are confusing the two, with many consumers labelling any larger produce genetically modified organisms (GMO)

Organic and GMOs are two distinct concepts related to agricultural practices and food production.

To begin with, organic agriculture is a farming system that emphasises on the use of natural and sustainable practices.

It avoids the use of synthetic chemicals such as pesticides, herbicides, and fertilisers. This agricultural practice relies on methods like crop rotation, composting, and biological pest control to maintain soil health and minimise environmental impacts.

On the other hand, GMOs are living organisms whose genetic material has been artificially altered using genetic engineering techniques. This modification is done to introduce specific desired traits, such as resistance to pests or herbicides, improved nutritional content, or enhanced shelf-life.

Second, in organic farming, the use of synthetic pesticides, herbicides, and fertilisers is prohibited. Instead, the practice relies on natural and non-synthetic inputs for pest control and soil fertility. On the contrary, GMO crops are often engineered to be resistant to pests or certain herbicides. As a result, GMO crops may require fewer pesticide applications compared to conventional non-GMO crops.

Third, when it comes to seed origin, organic farmers use non-GMO seeds, which have not been genetically engineered or modified. They select seeds from traditional, open-pollinated varieties or hybrid varieties that are not genetically engineered.

On the other hand, GMO crops are developed using genetic engineering techniques in laboratories. Their seeds are genetically altered to express specific traits or characteristics.

Fourth, organic farming practices aim to minimise the environmental impact of agriculture by promoting biodiversity, reducing soil erosion, and avoiding the use of synthetic chemicals that can harm ecosystems.

On the opposite, the environmental impact of GMOs can vary depending on the specific traits they carry. Some GMOs may reduce the use of chemical pesticides, which could be beneficial for the environment, while others may raise concerns about potential unintended effects on non-target species, or the development of resistance in pests.

Fifth, organic products are labelled based on certification standards that verify their adherence to specific farming practices.
In many countries, organic products must meet certain criteria and undergo certification processes before they can be labeled as "organic."

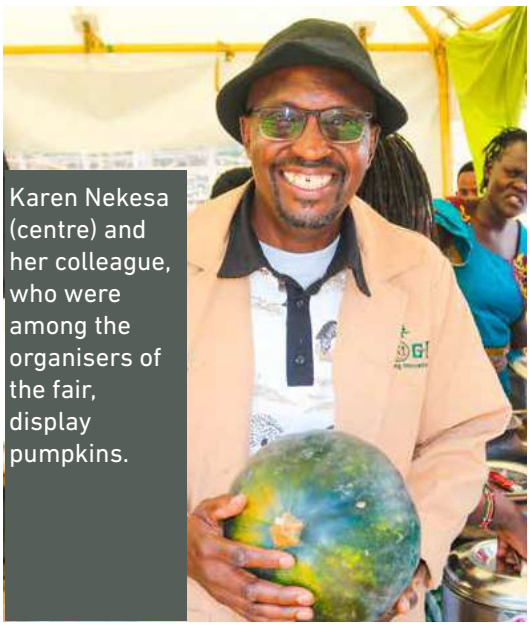
For GMOs, labelling of products varies from country to country. In some regions, labelling is mandatory, while in others, it may be voluntary or not required at all. Therefore, it's important to note that organic and GMOs are not mutually exclusive. It is possible for a crop to be both organic and genetically modified if it meets the criteria for organic farming practices while also being a GMO. However, in practice, most organic farming standards do not allow the use of GMOs, and organic products are typically non-GMO.

How the second edition of the indigenous seeds and food culture harvests fair held recently at the National Museums of Kenya went down

Jephline Ojwan'g, an indigenous crops farmer from Migori County, showcases the various cereals she grows during the fair.
Right: Ojwan'g shows peanut butter she has processed from groundnuts.

Elizabeth Omutimba, the Anglican Development Services (ADS) – Western Project Coordinator, explains to a participant the cereals the company is spearheading for farmers to grow.

Farmers inquire about the various organic crops James Kaliba, a producer based in Gilgil, Nakuru County, grows on his farm.



Karen Nekesa (centre) and her colleague, who were among the organisers of the fair, display pumpkins.

Manea Masake, a farmer from Busia County, with the coloured maize she cultivates, which she said is both drought-tolerant and disease-resistant.

James Kaliba, an indigenous crops farmer from Gilgil, Nakuru County, shows a variety of pumpkin seeds (locally known as kahurura) whose leaves are used in preparing 'mukimo'.

Florence Mutugi (left), a member of Neema Farmers Community Garden, a women's group from Kirinyaga County, and a fellow farmer, display murenda and millet seeds.

Janet Oginga, a farmer from Migori County, shows a drought-resistant cassava variety.

Manea Masake, a farmer from Busia County, with a variety of climbing yams.

James Kaliba, an indigenous crops farmer from Gilgil, Nakuru County, arranges cereals seeds at the fair.

Juicy returns from sweet pixies

Alex Somba grows the fruits using organic methods that see his produce fly off the shelves

"July normally marks the onset of the harvesting season. All our pixies are totally sold out by the second week of the month."

Every year as the pixie season starts in Makueni County – the biggest producer of the succulent fruit of the citrus family – it is a flurry of activities as farmers seek to cash in.

Most farmers harvest the fruits and take them to the market in search of buyers. For the lucky ones, however, buyers flock their farmers in search of the juicy fruits.

Alex Somba, however, does not experience the rush as his fruits normally are already sold out.

His secret lies in the manner in which the father of three manages his four-acre orchard located at Kiatine Village along the Machakos-Wote Road.

"July normally marks the onset of the pixie harvesting season in this region. All our pixies are totally sold out by the second week of the month," he says during a tour of the orchard, which is also home to oranges, lemons and assorted vegetables.

Somba is a dyed in the wool agro-ecology champion. He is among a growing number of farmers in the country who have switched from conventional agrochemicals to bio-inputs, which include fertilisers and pesticides, as the climate crisis worsens and prices increase.

His mode of farming is the main reason that his fruits are on high demand.

"In recent years, we have observed that our customers, especially those who target the Nairobi markets, are increasingly becoming sensitive to how fruits and vegetables they want to buy are grown," narrates Somba.

"They are skeptical even when we assure them that the farm produce is within the recommended pre-harvest interval. This concern reduces drastically when they learn that we use organic products to fight pests," he says.

In addition to being a consumer of assorted organic fertilisers and insecticides, Somba has become one of their biggest suppliers in the region, which is steadily warming up to them.

Somba's dalliance with agro-ecology started on a sad note. After years of growing fruits and vegetables, an enterprise he ventured into immediately after high school, the 50-year-old started complaining of general body aches. Before long, he started losing sight gradually.
"At this point, I realised that I was staring at a bigger problem.
When I heeded the advice of medics to reduce the exposure to agrochemicals, my health situation improved drastically. Around this time, an agronomist introduced me to agro-ecology.
This basically meant reducing and avoiding the use of conventional agrochemicals and instead going for organic products," he recounts.
"I went into the new way of farming full throttle. The outcome on my health, yields and income has been impressive," he adds.
His predicament is not isolated in the region known for the production of fruits.
According to Joseph Mbithi, an agronomist with Bio Vision Africa Trust, one of the organisations that promote agro-ecology practices, cases of farmers losing sight have been on the increase. "Many farmers tend to over-expose themselves to agrochemicals as they rarely use personal protective equipment. Others over-dose the agrochemicals hoping to enhance efficacy. This often causes health complications, including lost sight, general body aches and multiple allergies," Mbithi says.

He bets big on agro-ecology to address the problem. "At the heart of agro-ecology is avoiding conventional fertilisers and pesticides, which multiple studies have shown to be harmful to farmers, consumers and the environment."
In addition to using bio-inputs, agro-ecology entails use of indigenous seeds, as well as going for sticky cards and pheromone traps to control notorious pests.
Other natural ways of controlling pests include intercropping with coriander and onion, explains Somba.
He observes that bio-inputs are more effective than conventional methods.
"Although they take time to deliver the same results as agrochemicals, bio-inputs are eventually more effective. Bio-pesticides target all stages of the pests. This makes them more effective in the long run."
Additionally, bio-fertilisers promote soil health.
"When compared to the conventional fertilisers and pesticides, bio-inputs are cost-friendly. This translates to more profits for the farmer," he says. The farming method is a big deal to Somba who depends on his enterprise to educate his children, two who are in universities. The third one is in private primary school.
The switch to bio-inputs is propped by a myriad of innovations on agro-ecological products. One of the innovators in this area is Robinson Kariuki, who mainly uses rabbit urine to manufacture organic fertiliser and pesticide, which he markets across the country.

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Decoding our diets: *Is the food you buy safe?*

Report shows excessive reliance on pesticides by farmers to produce crops like maize, wheat, tomatoes and potatoes has exposed consumers to very toxic chemicals, some that are cancerous

Do you know that when you walk into a market and buy tomatoes you may be exposing yourself to at least seven chemicals – some of them very harmful?

This is the reality as farmers in the country increasingly turn to pesticides to boost production amid high demand. The farmers are heavily relying on the pesticides at every stage of crop production – from weeding to fruiting, therefore, exposing consumers to hazardous chemicals. Experts note that among the top 30 pesticide products in terms of volume in Kenya, the majority are highly hazardous pesticides (HHPs).

Heinrich Böll Foundation in its latest study dubbed "*Toxic Business*", says farmers in Kenya use 310 pesticide products containing 151 active ingredients. They on average apply a total volume of 3,068 tonnes of pesticide products to control insects, diseases, and weeds on 26 different crops.

They spend some $72.7 million (Sh11.4 billion) on the purchase of pesticide products, with Sh4.5 billion going on insecticides (led by chlorpyrifos, flubendiamide, and imidacloprid), Sh4.1 billion on herbicides (led by glyphosate and paraquat), and Sh2.8 billion on fungicides (led by mancozeb). Out of the 310 pesticide products used, 195 (63 per cent) contain one or two active ingredients that are categorised as HHPs, accounting for 76 per cent of the total volume of pesticides used.

"This indicates that farmers in Kenya predominantly use HHPs, despite their known detrimental effects on human health and the environment. Notably, almost half (44 per cent) of the total volume of pesticides used in Kenya are already banned in Europe due to their unacceptable risk to human health and the environment," the report notes.

Top on the list of crops that are produced using heavily toxic chemicals are maize, wheat, coffee, potatoes, and tomatoes.

Maize and wheat farmers rely on herbicides that have toxic ingredients namely 2.4-D, S-metolachlor, glyphosate, atrazine, and paraquat.

They also apply insecticide chlorpyrifos in high volumes, according to the report. On the other hand, for coffee production, farmers use high volumes of highly hazardous insecticides (chlorpyrifos, diazinon, omethoate, and thiophanate), fungicides (chlorothalonil), and herbicides (glyphosate, atrazine). Potatoes and tomatoes production also heavily depends on HHPs, with mancozeb being a widely used fungicide.

Mancozeb, according to the report, is banned in the EU and has been linked to cancer. Tomato production also involves the use of a variety of highly hazardous insecticides (diazinon, thiamethoxam).

The report notes that based on the potential human health toxicity of the chemicals, considering factors that include carcinogenicity, reproductive toxicity, endocrine disrupting activity, mutagenicity, and neurotoxicity, the use of chemicals with above active ingredients should be regulated.

The report calls for gradual elimination of the use of products containing harmful ingredients that jeopardise human health and the environment. "Farmers need to implement Integrated Pest Management (IPM) strategies in production of crops like maize, wheat, coffee, potatoes, and tomatoes. These strategies combine various pest control methods, including biological controls, crop rotation, and cultural practices, reducing reliance on synthetic pesticides," says the report.

Faiba Kombo, a programmes coordinator at Heinrich Böll Foundation, says there is need to ensure that farmers, extension officers, and agrovet shop owners, have access to relevant information and knowledge to make informed decisions about sustainable agricultural practices, including pest and disease management.

"Pesticides are quick fixes to problems farmers encounter daily on their farms. Farmers need lessons on IPM techniques and organic farming for the production of safer food," she said.

According to her, organic farming is a good alternative to the current practices, with its advantages including regeneration of soil and production of safer food.

"We have very successful organic farmers and they are making good income from their practices. These are the kind of success stories that farmers need to know about and learn from them," she says.

She observes that most of the pesticides used in Kenya are imported from the European Union, but the countries themselves do not accept produce grown using the chemicals to be exported there.

"This is double standards. Why should they sell to us the chemicals and refuse to buy produce like French beans (mishiri) whose produce in the country heavily relies on the chemicals?" she poses.

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ORGANIC vs conventional farming: know the differences

For many people, the easiest way to differentiate organic farming from conventional is that in the former, one avoids inorganic inputs and in the latter, one uses. Well, there are more differences between the two than just use of chemicals. The farming methods are two distinct approaches to agriculture, differing in their principles, practices, and philosophies. Here are the main differences:

Use of synthetic chemical

This is the fundamental difference between the two when it comes to fertilisers, pesticides, and herbicides. Conventional farming relies heavily on the synthetic chemicals to enhance crop growth, control pests, and manage weeds, while organic farming relies on natural alternatives.

Fertiliser usage

In conventional farming, synthetic fertilisers are used to provide plants with essential nutrients. The inputs are often water-soluble and are quickly absorbed by plants, but this can lead to nutrient imbalances and soil degradation over time. Organic farming, on the other hand, relies on natural fertilisers like compost, manure, and cover crops that release nutrients slowly and help stabilise the health of the soil.

Pest and weed management

With conventional farming, farmers mostly use chemical pesticides and herbicides to control pests and weeds. In organic farming, pest and weed management relies on natural methods such as crop rotation, beneficial insects, trap crops, and physical weed removal.

Genetic modification

Conventional farming sometimes uses genetically modified organisms (GMOs) to enhance crop traits like resistance to pests or herbicides. In contrast, organic farming prohibits the use of genetically modified seeds or organisms so that what is grown is natural and free of any enhancements.

Antibiotics and growth hormones

In conventional farming, including in livestock, antibiotics and growth hormones are commonly used to promote growth and prevent diseases. Organic farming, however, prohibits the routine use of antibiotics and hormones, instead focusing on providing crops and animals with a more natural and healthy environment.

Soil health and biodiversity

Organic farming places a strong emphasis on building and maintaining healthy soil through practices like crop rotation, cover cropping, and composting. It also encourages biodiversity, which can help control pests and improve overall ecosystem health. For conventional farming, due to increased use of synthetic fertilisers and chemicals, the soil health may be inadvertently harmed.

Certification and regulations

Organic farming is a subject to certification standards and regulations set by government bodies or private organisations that locally include Kenya Organic Agriculture Network (KOAN). To be labelled as "organic", farmers must adhere to specific guidelines and practices. On the other hand, conventional farming typically follows standard agricultural practices, with fewer specific regulations related to chemicals and inputs.

Environmental impact

Organic farming generally has a lower environmental impact compared to conventional farming. The avoidance of synthetic chemicals and the focus on sustainable practices contribute to reduced water pollution, improved soil health, and less negative impact on surrounding ecosystems.

Both organic and conventional farming have their merits and challenges, therefore, the choice of which to use often depends on factors such as market demand, environmental concerns, resource availability, and individual farming philosophies. But that said, for sustainable farming, organic is the way to go.

Yes,

you can juggle organic and conventional production

Some people wonder is it possible for a farmer to practice both organic and conventional farming at the same time? The approach is known as "mixed or integrated farming". Under the method, the farmer employs a combination of organic and conventional agricultural practices, depending on various factors such as the crop or livestock type, market demand, environmental conditions, and personal preferences.
For example, a farmer may choose to grow certain crops using organic methods, avoiding synthetic pesticides and fertilisers, and focusing on sustainable practices like crop rotation, composting, and natural pest control.
At the same time, the farmer may cultivate other crops using conventional methods that involve on the use of synthetic inputs to maximise yield and economic returns.

There are several reasons why a farmer may adopt this approach. To begin with, there is the issue of market demands.

Some consumers and markets prefer organically grown produce, while others may not have such strict requirements. By practising mixed farming, the farmer can cater for both segments of the market in turn earning more. This diversification can help stabilise income and reduce the vulnerability to price fluctuations in the market.

Second, depending solely on one type of farming can expose a farmer to specific risks, such as crop failure due to pests or disease. By diversifying their practices, farmers can spread out the risks, therefore, if one practice fails, the other thrives thus acting as a risk mitigator.

Third, in organic farming, one requires specific resources, such as organic fertilisers, which might not be readily available or affordable, especially in areas that are away from urban centres. Mixed farming, thus, allows the farmer to make the best use of the resources they have access to. These include organic fertilisers, cover crops, and compost, while also using synthetic fertilisers and pesticides when necessary.

Fourth, transitioning an entire farm to organic practices can be a long and challenging process. Experts recommend that one does the transition in bits as they learn the curve. And this is where mixed farming comes in as it allows the farmer to gradually move towards organic methods while maintaining some conventional practices in the interim.
Fifth, organic farming practices like crop rotation and reduced tillage, can promote soil health and fertility. By incorporating these practices into conventional farming, farmers can improve overall soil quality and reduce the negative impacts of intensive conventional practices on soil structure and health.

Sixth, organic farming is generally considered more environmental friendly due to its reduced use of synthetic chemicals and focus on sustainability. Integrating organic practices into conventional farming can help reduce the environmental impact of conventional agriculture, such as pesticide runoff and soil erosion.
Seventh, mixed farming encourages farmers to learn and understand different farming methods, combining traditional knowledge with modern techniques. This knowledge exchange can lead to greater innovation and continuous improvement in farming practices.

Eighth, certain crops or regions may be more suitable for organic farming, while others may thrive better with conventional methods. Mixed farming allows farmers to adapt their approach based on local conditions and market demands.

But it is important to note that mixing both approaches should be done with care to ensure that the practices used align with the respective requirements. One should follow the specific guidelines and regulations prescribed particularly for organic farming like labelling produce as "organic" before marketing.

Tithonia, the wonder shrub

Tithonia, (Tithonia diversifolia), also known as Mexican sunflower, is often used in organic farming as a beneficial plant. The weed is a soft, succulent plant that grows between 1-3 metres high with alternate lobed leaves, which have a sharp apex. Tithonia is considered a useful plant because it has a chemical composition that includes various phytochemicals such as flavonoids, terpenoids, and phenolic compounds. These compounds contribute to its potential medicinal and antioxidant properties.
This plant can be utilised in several ways:

Compost

Tithonia leaves and stems can be added to compost piles, contributing organic matter that enriches soil structure and fertility. The fertiliser contains Nitrogen (N), potassium (K) and phosphorous (P) as the main components, therefore, helping to keep soils healthy.
The organic fertiliser has the following composition: N 3.2 – 5.5 per cent, potassium 2.3 –5.5 per cent, phosphorous 0.2 – 0.5 per cent, calcium 1.8–2.0 per cent and magnesium 0.3–0.4 per cent.
Therefore, taking an average mineral composition of 3.5 per cent N, 0.37 per cent P, and 4.1 per cent K, some three tonnes of tithonia can be used to supply 70 – 140kg N/ha and 80 – 165kg K/ha.
This shows that the manure from tithonia has the capacity to replace inorganic fertilisers because it can supply the essential minerals in excess of what the inorganic fertiliser provides.

Liquid fertiliser

Tithonia can be used as both a solid and liquid fertiliser. As the latter, it has a high concentration of dissolved nutrients which are readily available for the plant. In the mineral fertiliser, some the nutrients are bound in fertiliser filler materials. And as a liquid fertiliser, there are presence of microorganisms in the fertiliser that breaks down the organic matter in the soil enhancing the activity of the soil, and increasing nutrient availability to the plant. It also acts as an insect repellent, hence controls insects when used to make the liquid fertiliser.

Mulching

Chopped tithonia plant material can be used as mulch around other plants, helping to conserve moisture, suppress weeds, and improve soil health as it breaks down.

Cover crop

Tithonia can be grown as a cover crop and then turned into the soil to act as a green manure, increasing soil organic matter and nitrogen content.

Pest management

Tithonia attracts beneficial insects like pollinators and predators of harmful pests, helping to maintain a balanced ecosystem in the garden. To use it as a pesticide, harvest the leaves and twigs and crush them in a mortar and pestle.

Then add water to the crushed paste and sieve to get a clear liquid. Use five litres of water to dilute some 17kg of concentrated tithonia paste to form the pesticide that can be used to control pesticides in tomatoes and vegetables, cutting cost of production.

Nutrient accumulation

Tithonia plants accumulate nutrients from deep in the soil and make them available to other crops when the plant is incorporated into the soil. It is further considered a dynamic accumulator, which means it accumulates certain nutrients in its tissues that can later be released into the soil as the plant decomposes.

Soil improvement

The decomposition of tithonia adds organic matter, improves soil structure, and enhances water-holding capacity, leading to overall healthier soil. However, while tithonia can provide these benefits, it's important to manage its growth to prevent it from becoming invasive or overshadowing other plants.

How to propagate tithonia

While the shrub naturally exists as a weed on farms, it can also be planted using either cuttings or seeds. If using seeds, scatter them in narrow furrows and cover with a thin layer of sand. For cuttings, use 20cm stems with two nodes below the ground and three nodes above the ground and plant them into the soil at 45°C.

You want to sell organic produce abroad?

Here is what you need to know

Organic produce is in great demand abroad, with buyers willing to pay premium to get the products that are considered safer as compared to those grown using chemicals. But how does one access the market? This requires careful planning, adherence to international regulations, and meeting the specific requirements of the target markets. Here are the essential steps and considerations to export your produce

Organic certification

Before exporting organic produce, you must obtain organic certification from a recognised certification body. The certification process involves inspection and verification that your farming practices comply with organic standards, both in the country and the destination country. The certification must be done by an independent party to assure the customer that the production process conforms with set industry standards. In Kenya, EnCert is one of the certification bodies that offer organic services to both individual producers as well as groups.

Market research

Do a thorough research to identify potential export markets for your organic produce. Consider factors such as demand, competition, consumer preferences, and import regulations in each target market.

Compliance with import regulations

Familiarise yourself with the import regulations and requirements of each country you plan to export to. Different countries may have specific rules regarding organic certification, labeling, and phytosanitary standards.

Quality and traceability

Let your produce be of good quality and is traceable. That is, keep detailed records of your farming practices, including inputs used, crop rotations, and pest management strategies. Traceability is crucial for building trust with buyers and meeting import regulations.

Packaging and labelling

Invest in high-quality packaging that preserves the freshness of your organic produce during transportation. Label your products accurately and in compliance with the labelling requirements of the destination country. Include essential information such as organic certification logos, product origin, and any other required details.

Shipping and logistics

You have to plan your shipping and logistics carefully. Consider factors such as transportation options, shipping schedules, cold storage facilities, and ensuring that your produce reaches its destination in optimal condition.

Export documentation

Prepare all necessary export documentation such as certificates of origin, phytosanitary certificates, and other export licences required by the destination country.

Create networks

Build relationships with importers, distributors, or retailers in the target markets who are interested in purchasing organic produce. Attend trade fairs, networking events, and engage in B2B communications to connect with potential buyers.

Price competitiveness

Consider pricing strategies that allow your organic produce to remain competitive in the target markets. Price your products appropriately while considering the additional costs associated with certification and transportation.

Continued compliance

Ensure you comply with organic standards and import regulations. Maintain communication with certification bodies and stay updated on any changes to export requirements in the destination markets.

Risk management

Be aware of potential risks and challenges related to international trade, such as currency fluctuations, geopolitical factors, and changing import regulations. Develop risk management strategies to mitigate potential issues.

Selling organic produce abroad is not a one-size-fits-all approach. It requires careful planning, understanding of international trade regulations, and dedication to maintaining the integrity of organic farming practices. Therefore, working with experienced exporters, trade consultants, or agricultural organisations can be helpful in navigating the complexities of exporting organic produce to foreign markets.

To sell organic produce in the local market, follow these steps

Selling organic produce successfully requires a well-thought-out marketing strategy and a deep understanding of your target market. Here are some steps to help you sell your organic produce effectively in the Kenyan market

Identify your target market

Determine who are your ideal customers. Are you selling to consumers, restaurants, grocery stores, or wholesalers? Understanding your target market preferences, needs, and buying behaviour will guide your marketing efforts.

Build a strong brand

Create a compelling brand identity for your organic produce. This includes a memorable name, logo, and packaging that communicates the values and quality of your products.

Obtain organic certification

Get certified by a recognised organic certification body. Organic certification adds credibility and assures customers that your products meet the required organic standards.

Have online presence

Build a professional website and leverage social media to showcase your organic produce. Share engaging content, stories about your farming practices, and images of your products to attract potential customers.

Participate in farmers' markets

Farmers' markets are great venues to directly connect with consumers. Set up an attractive booth, offer samples, and engage in conversations to build relationships with customers. One place to go in Kenya is the Organic Farmers Market in Karen, which is is a one-stop-shop for all your organic products. The market is opened every Saturday and Sunday.

Collaborate with local retailers

Approach local grocery stores, cooperative societies, or specialty food shops to see if they would be interested in selling your organic produce. Offer competitive pricing and reliable supply to win their trust.

Value-added products

Consider diversifying your product line by creating value-added products, such as organic preserves, sauces, or dried fruits, which can help increase your revenue and appeal to a broader customer base.

Networking and partnerships

Attend agricultural conferences, events, and networking sessions to connect with potential buyers, distributors and other players in the organic industry. This will help you learn as well as educate consumers about the benefits of organic produce.

Customer feedback and reviews

Encourage customer feedback and positive word-of-mouth reviews, which can significantly influence potential customers.

Consistency and quality

Ensure consistent quality of your organic produce. Deliver on your promises to build trust and retain customers.

Environmental certifications

If you're employing other sustainable and environmentally friendly practices, such as water conservation or wildlife conservation efforts, consider obtaining relevant certifications to highlight these additional benefits.

Stay compliant

Stay up-to-date with regulations and market standards related to organic produce to maintain compliance and customer confidence.

Selling organic produce requires persistence, dedication, and continuous improvement. By offering high-quality products, building strong relationships with customers, and effectively promoting your organic produce, you can establish a successful and sustainable market presence.

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Big *switch* to organic farming

One needs a three-year transition period to understand the processes and get certified

Many consumers are now conscious of how the food they eat is grown, thanks to the rising cases of some farmers using excessive chemicals or contaminated water.

This, therefore, means that there is massive opportunity awaiting organic farmers out there as market for the produce expands.

So, why not make the switch? To make the shift, experts recommend that one should give themselves a transition period of 36 months for their first crop to be labelled organic.

The three years will enable the farmer adjust from use of inorganic inputs to building a sustainable organic ecosystem. Above all, one requires a positive mindset.

To begin with, lets discuss the types of transitions.

a) Complete transition: Under this, one changes all his practices into organic at once; keeping the livestock or growing crops under the new regime. It can be drastic.

b) Step by step transition: In this, the farmer transitions gradually, starting with one field or group of animals as he moves onto the next.

c) Abrupt transition: Here, one does not give themselves a transition period. He certifies his livestock and land and moves on. This is best for land that has been fallow for at least three years.

• **Divided transition:** Here, one part of the land is conventional and the other organic as a long-term strategy. This is often combined with "step by step" transition strategy but the overall practice is to maintain both.

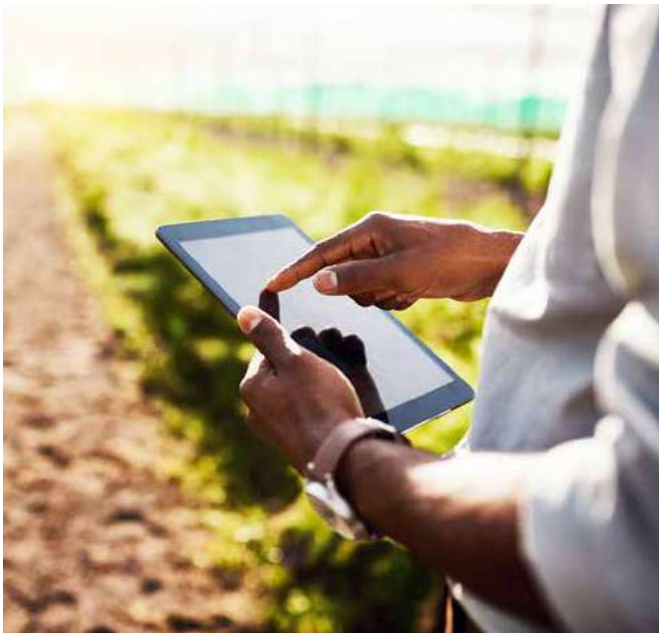
Most of the time a farmer making the shift worries too much about what would happen if they replace inorganic inputs with organic products, instead of focusing on using best management practices.

These are reinforced by good recordkeeping, soil fertility and crop nutrient strategy, and practices like crop rotation, disease, pest and weed management.

The three years transition period enables the land to recover from the reliance on inorganic fertilisers that soak up on the farm, disrupting microbial activities.

It further offers the farmer a chance to know what can grow better and the various rotation programmes that work for full production

The farmer, therefore, needs to properly strategise and keep records to know what it takes to run such a farm profitably under the new dispensation.



Success
in your transition will depend on the following:

a) Plan: It must be clear, identifying all the necessary steps that would be taken in making the transition to organic, and most importantly, it should have realistic objectives and time frames. It is also important for one to do a SWOT (strength, weaknesses, opportunities and threats) analysis to identify your strong and weak points, and what to maximise. At the start of the transition period, one should know that yields may be depressed and it may be difficult to achieve top prices.

b) The tenets: As a system of food production, organic farming relies on preventative strategies. Therefore, understand the standards in organic production; know what is prohibited and what is allowed as well as sustainable practices. A good starting point is to belong to an organic farming network, and to attend various events for educational purposes. This is because the organic market is strict and one goes through various steps to get certified. A challenge in any may make one's products not get certification.

c) Soil management: Adhering to all or most best soil management practices is one step into a successful organic farming venture. These include maintaining good drainage, soil fertility and organic matter, adequate pH, biological health, high legume content, and less weed and pest. You must also be able to recycle soil nutrients using animal manure or compost, growing a cover crop, crop rotation and reduce nutrient losses due to leaching or over-fertilisation.

d) Recordkeeping: As mentioned earlier, this is a must in any type of farming, not only organic. You need to keep detailed production, processing and marketing records. The records should capture everything that enters and exits the farm for ease in traceability, a key practice in organic farming. Besides that, certifiers often require documentation when inspecting the farm operation before one is handed the certificate.

Certainly, transitioning to organic farming is not an easy task, but one should be prepared for the challenges especially in the first year, which include a rise in pests and diseases and declined yields.
The challenge can be attributed to the requisite time needed to change in chemical, physical and biological properties of the soil to enhance nutrient cycling, plant growth as well as the development of biological pest control system within the soil.
That said, the good thing is that after the transition period ends, and one gets the necessary certifications, yields rise and access to the market becomes easy.

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