

YOUNG FARMERS CLUB:

YOUR GUIDE TO ORGANIC FARMING



SIMPLIFIED, LOCALISED AND ENHANCED BY
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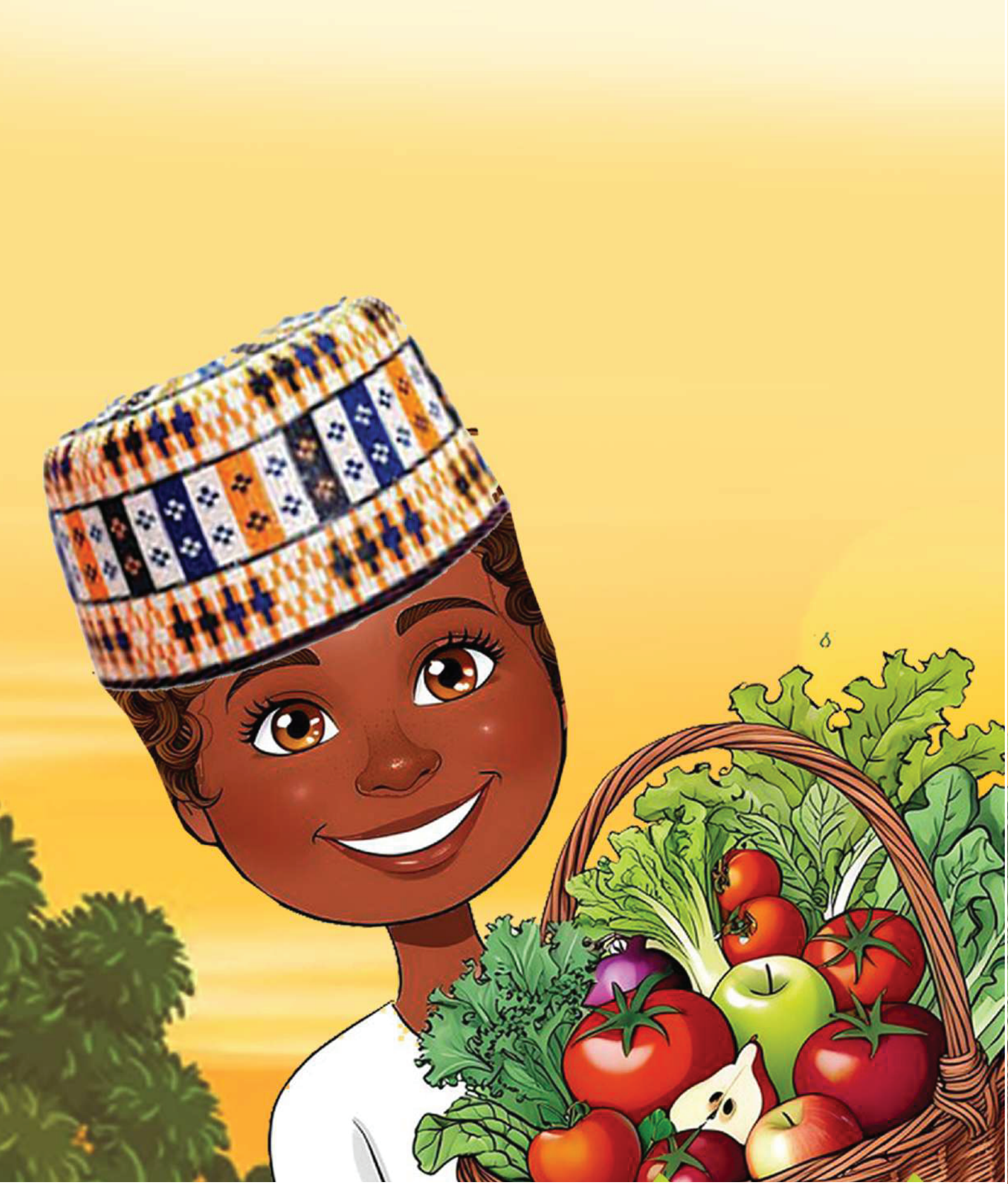


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Oh no! Why are our vegetables so small and sick-looking this year?



I used chemical sprays—my harvest is big! But... are these really safe to eat?

Good question! These chemicals might make food grow fast...but can they make us sick or affect us when we grow old?



Wow, Yusuf! You made a good harvest! Your vegetables looks fresh and colorful! What's your secret?



Easy! Just easy tricks to grow healthy food, fight pests, and save the soil! My uncle taught me! He said many chemical pesticides are banned in developed countries. He said God has already blessed us we don't need to use chemicals, we can practice organic farming. Come on! Let me show you the safe way!



YES! Teach us, Yusuf!

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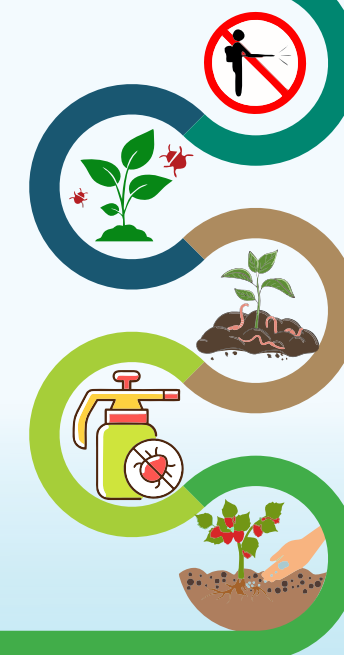
01 INTRODUCTION

Farmers, especially in Nigeria, often use harmful chemical pesticides to protect their crops. But these chemicals can hurt people, animals, and the environment. Many farmers don't know there are safer, natural ways to control pests. This is called organic farming.

THIS BOOK TEACHES SMALL FARMERS:

Methods of managing pests and diseases in crops.

How to make organic pesticide called biopesticides instead of chemical pesticides.



Why are chemical pesticides bad and dangerous?

How to make organic manure or fertilizer.

How to sow a seed and different vegetables.



02

WHY ARE CHEMICAL PESTICIDES BAD AND DANGEROUS?



Chemical pesticides might help kill pests, but they are bad and dangerous. This can cause big problems now or later.



Some pesticides are very harmful and can make people really sick. You might feel dizzy, throw up, get headaches, or have tummy aches when you touch, breath in or inhale.



They are bad for nature because they kill helpful bugs like bees which helps in pollination. They poison water and hurt animals too.



Did you know Europe banned these chemicals because they're very dangerous? But some companies still sell them to Nigeria. That's not fair. It puts farmers and families at risk. We really need to do better and protect ourselves! If you are using these chemical pesticides for many years It can cause diseases like cancer, brain and nerve damage, diabetes etc.

What are active ingredients and how can we identify them on pesticide products?



Active ingredients are the strong chemicals in pesticides that kills pests but it is bad and dangerous for our health.

Some of the active ingredients found in pesticides are:

- Profenofos.
- Triazophos.
- Cypermethrin.
- Chlorpyrofos (and others).

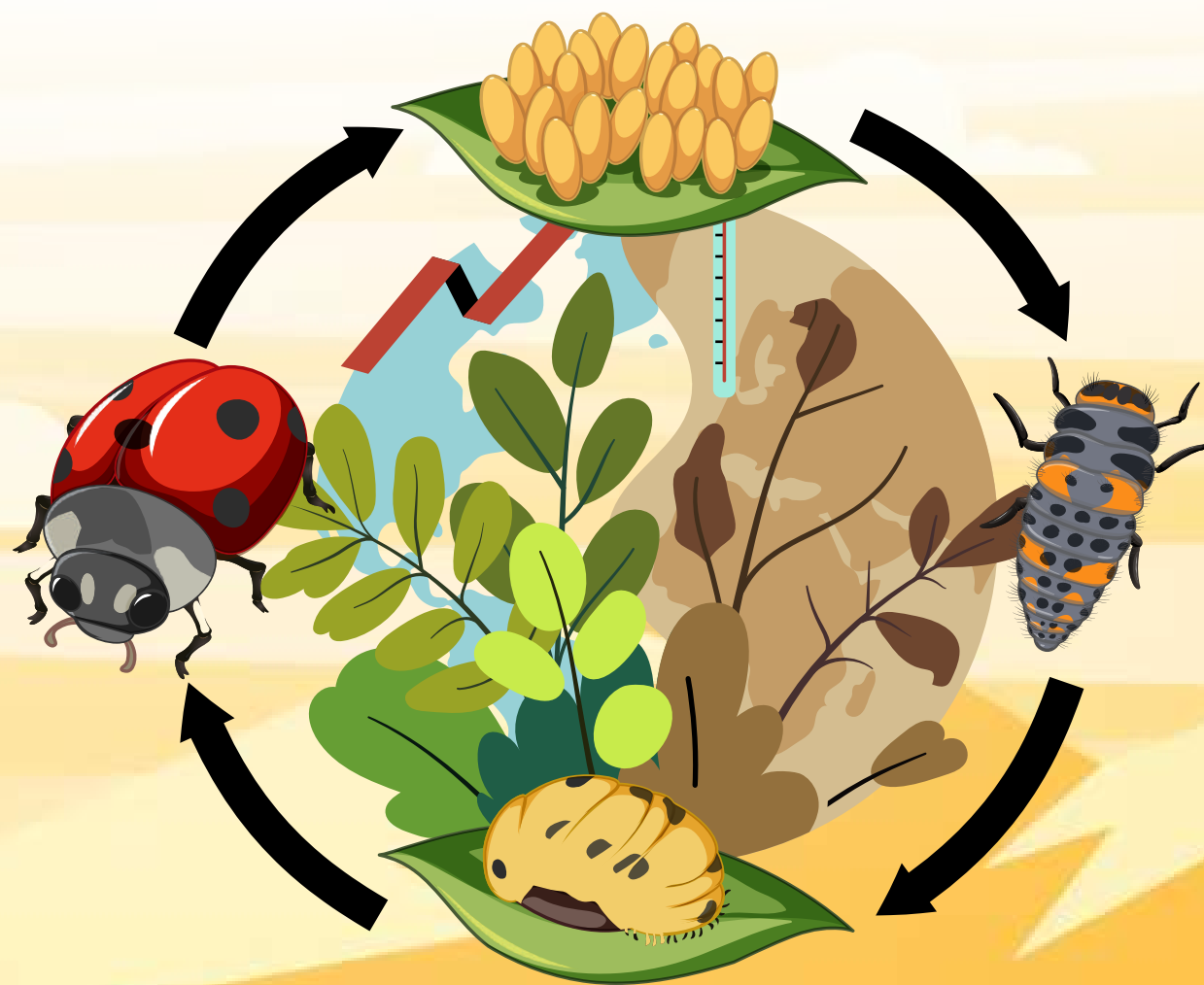
These active ingredients can cause cancer, brain damage, and make people very sick.

NOTE: Dear young farmers, let's grow healthy food and take care of our planet! Organic farming is a great way to do that. By avoiding harmful chemical pesticides, we are keeping our soil, air, and water clean, not only that but we're growing yummy and healthy fruits and veggies that are good for our health. Keep exploring, learning, and growing with organic farming! You're making a difference!



03

METHODS OF MANAGING PEST AND DISEASE IN CROPS.



**HEALTHY SOIL
+ HAPPY BUGS
= STRONG PLANTS!**

You can even stop pest naturally by growing crops the right way.



Did you know? Strong soil grows strong crops—just like eating well keeps you healthy.

**WANT FEWER PESTS?
STOP THEM BEFORE
THEY START!**

Above the Ground: Plant different plants together in a row, bugs like some more than others.

Below the Ground: Keep soil moist and fluffy (like a cozy bed for roots!).

Crop rotation (change what you plant each year) so that pests don't get too comfortable.

Grow in the right season—some plants love rain, others love sun.

If pest and diseases still occur, this manual will show you how to make your low cost organic pesticide to spray on your crops without using chemicals.



GOOD FARMING PRACTICES

- Hedges on the boundaries of the field for protection against wind and animals.
- Marigold or Lemon Grass in the field help to repel insects away from the field.
- Prunning of older or infected leaves to improve air flow and light penetration.
- Covering beds with mulch to help retain moisture and suppress weed growth
- Use of biopesticide.



BAD FARMING PRACTICES

- Poor farm hygiene (weeds become host to some insect pests).
- Lack of appropriate spacing between plants.
- Improper use of chemicals.
- Mono cropping (growing the same crop on the same farm repeatedly; it contributes to build up of pests and diseases.
- Bush burning (kills useful microbes in the soil).

Did you know? Strong soil grows strong crops—just like eating well keeps you healthy!

Here's why soil matters:

- Healthy soil is alive when it is full of tiny helpers (microbes, worms, and good fungi) that feed plants and fight diseases.
- It is rich in humus (nature's compost) and holds water like a sponge.

What healthy soil does:

- Gives plants super protection against pests & diseases.
- Stops erosion (no washing away!).
- Lets roots breathe and drink easily.



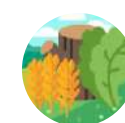
COMPOST AND COMPOSTING

Compost is a nutrient rich organic materials formed through the decomposition of organic waste, like leaves, food scraps e.t.c which aids in fertility structure and soil health. Composting is the process of breaking down organic materials (leaves, food scraps) etc into a soil- like substance called Compost.

IMPORTANCE OF COMPOSTING

Compost adds essential nutrients, improves structure, organic matter and improves structure, organic matter, improves soil health and micro-organisms to the soil which enhances its health. It also helps in water management. A compost-rich soil retains more water thereby reducing the need for frequent irrigation and minimizing water wastage.

MATERIALS NEEDED FOR COMPOST



Brown Materials (dried leaves, straws, wood chippings, saw dust, paper, carton, small branches)



Green Materials (grass chippings, vegetable scraps, fresh leaves, fruits peels, food waste - not oily)



Water for moisture



Cattle dung



Leather/ tapoleen

COMPOSTING PROCEDURE

It can be done in a dug ground (2m deep and 2m wide) or can be done on surface ground to be covered with thick tapoleen but should be away from house.



NOTE: After 2 to 4 months your compost is ready for use. Apply compost to the farm land before or after tractor operation for good yield.

How to plan crop rotation and intercropping with examples.

Crop rotation: Imagine if you eat rice every single day, you'd get tired, and your body wouldn't get all the nutrients it needs! Plants feel the same way.



YEAR 1:

Plant corn
(it takes nitrogen from the soil).



YEAR 2:

Plant beans
(they give back nitrogen to the soil).



YEAR 3:

Plant yams
(needs healthy soil).

Intercropping: Some plants help each other grow. Try:



Corn + Beans = Beans climb corn like a ladder!



Tomatoes + Basil = Basil keeps bugs away!



Potatoes + sunflower = sunflower scare bad bugs!

Rule: Tall plants + short plants = best friends!



HOW TO MAKE ORGANIC MANURE OR FERTILIZER

This organic fertilizer is called Jeevamruth. It is a liquid organic substance (fertilizer) made from cattle dung, cattle urine and riped fruits from the farm , which are rich in nutrients like nitrogen, phosphorus, potassium and carbon e.tc which helps enhances soil health thereby increasing crop yield.

IMPORTANCE OF JEEVAMRUTH

- ✓ It helps improve soil health.
- ✓ Increases crop yields.
- ✓ It can be used to balance the nutrient in the soil.

THINGS NEEDED FOR JEEVAMRUTH PREPARATION

- ✓ Cow dung (1kg) – Microbe superhero!
- ✓ Cow urine (1 liter) – Full of nutrients!
- ✓ Jaggery (100g) or rotten fruits - Food for microbes!
- ✓ Flour (100g) – Helps microbes grow!
- ✓ Handful of soil (from your farm) – Local microbes!
- ✓ Water (5 liters).

HOW TO PREPARE JEEVAMRUTH

Step 1: In a big bucket, add cow dung + cow urine + jaggery + flour + soil.

Step 2: Stir with a stick.

Step 3: Add water & wait.

Step 4: Pour 5 liters of water and mix well.

Step 5: Cover with a cloth (no lid!) and let it sit in shade for 3 days.

Stir Daily:

Every morning, stir the mix clockwise 5 times (microbes love exercise!).

After 3 days, strain and mix 1 liter Jeevamrutham in 10 liters water.

Pour near plant roots every 15 days for super soil!



SEEDLING

Just like babies grow into strong adults, healthy seedlings grow into the strong and best vegetables.

WHAT MAKES A GREAT SEEDLING?

- ✓ Strong roots (like plant "feet" to drink water and food).
- ✓ Green leaves (like plant "solar panels" for sunshine power).

How can we improve the farmer's way of raising seedlings?

- Selecting a place with good light exposure (sunlight).
- Soil sterilisation.
- Bed preparation/raised bed.
- Rain cover.
- Net cover.
- Line sowing.

OPEN FIELD SEEDLING

PRODUCTION (Improved ground nursery).

Open field seedling production simply refers to raising seedlings in the field which is the common practice we know.

The following are to be considered when raising seedlings this way;

- Choose a place free from weed and trees (to avoid shading), at the highest spot in the farm.
- Clear and prepare the soil.
- Make a raised bed of 20cm high in the dry season and 30cm high in

the raining season.

- Water the bed and cover with a plastic film and allow it to be exposed to sunlight for 3 weeks (solarization).
- Incorporate organic manure on the bed to add nutrient and increase water holding capacity of the soil and then irrigate the bed.
- Make sure the bed is moist and not too wet before sowing.
- During hot sunny weather, beds can be covered with net to reduce the heat intensity.
- Net coverings can also be used to protect the seedlings from insect pest.

HOW TO SOW A SEED IN A NURSERY BED

- ✓ Small seeds (e.g., tomatoes, peppers, or cabbage).
- ✓ Nursery bed (a small garden box or raised soil patch).
- ✓ Soft soil mixed with compost.
- ✓ Watering can or bottle.
- ✓ Stick or ruler.



PREPARE THE SOIL

- Loosen the soil with your hands (like fluffing a pillow!).
- Mix in compost to make it super nutritious.



MAKE TINY ROWS

- Use a stick or ruler to draw shallow lines(1 cm deep) in the soil.
- Space rows 10 cm apart(about the length of your hand!).



DROP THE SEEDS

- Place seeds 2 cm apart in the rows (like tiny soldiers standing in line!).
- Big seeds (like beans) go deeper than tiny seeds (like tomatoes).



COVER & PAT GENTLY

- Sprinkle soil over the seeds (like tucking them into bed!).
- Press lightly with your palm—don't squish them!



WATER WITH LOVE

- Use a watering can with small holes (or a bottle with holes poked in the cap).
- Water softly so seeds don't wash away.



Mulch the bed with rice straws to retain moisture and better germination.

Note: Check germination daily and remove the mulch immediately the seeds germinate to avoid etiolation (is the process in which plants grow long, pale and unhealthy due to the lack of light).



SUNSHINE & CARE

- Place the nursery bed where it gets morning sun.
- Water every morning (keep soil damp like a sponge).

In 5–10 days:Tiny leaves (called "seedlings") will pop up.
After 3–4 weeks: Transplant them to a bigger garden when they are due for transplant.

SEEDLING MEDIA

Why It Matters: Just like babies need soft blankets, seedlings need fluffy, nutritious soil to grow strong.

husks - holds water well) + 1 part Charcoal bits (keeps soil fresh).

TYPES OF SEEDLING MEDIA

1. Local media preparation (Best All-Rounder)

- 1 part Garden soil + 1 part Compost + 1 part Sand/Rice husks (for drainage).

3. Forest Floor Magic

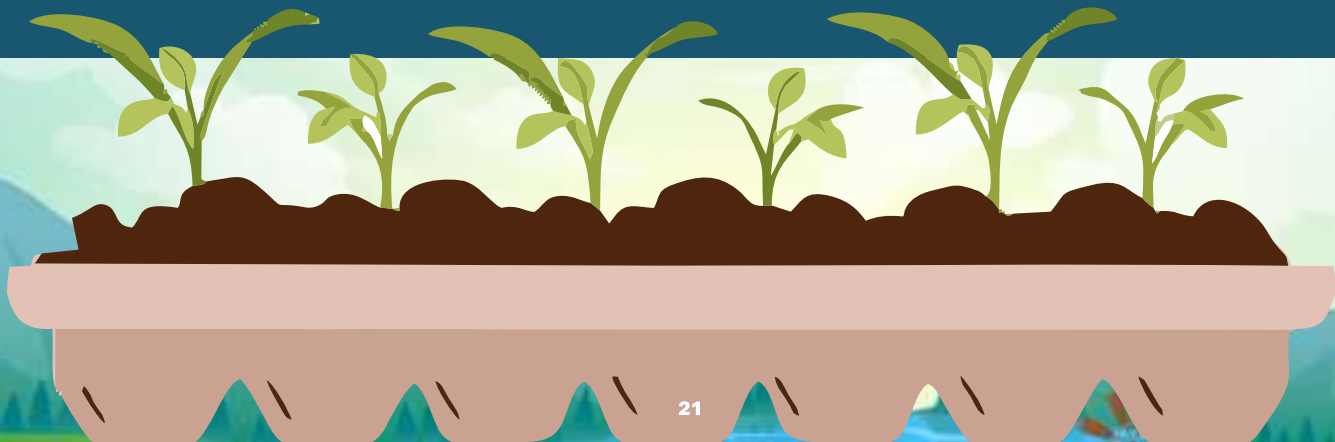
- Rotted leaves + Termite mound soil (full of natural microbes!).

2. Cocopeat Mix

- 2 parts Coir dust(from coconut

4.Recycled Media

- Crushed eggshells (for calcium)
- Used tea leaves/coffee grounds (add nutrients).



HOW TO PREPARE MEDIA IN 4 FUN STEPS



1. Sift It!

- Remove sticks/stones using a sieve or net.



2. Mix It

- Combine your chosen ingredients in a bucket.
- Pro Tip: Add a spoon of wood ash to prevent diseases!



3. Test It!

- Squeeze a handful - it should:
 - ☒ Hold shape when squeezed.
 - ☒ Break apart when poked.
- If too wet: Add sand/rice husks.
- If too dry: Add compost.



4. Bag It!

- Fill small pots, recycled containers (like yogurt cups), or seed trays.
- Make drainage holes so roots can breathe.

DAYS FROM SOWING TO GERMINATION



Tomato

Hot season: 3 - 6 days

Cold season: 10 - 15 days



Cucumber

Hot season: 2 - 5 days

Cold season: 2 - 7 days



Pepper

Hot season: 3 - 6 days

Cold season: 10 - 15 days



Cabbage

Hot season: 3 - 5 days

Cold season: 3 - 12 days



Lettuce

Hot season: 2 - 6 days

Cold season: 3 - 5 days



Watermelon

Hot season: 2 - 5 days

Cold season: 3 - 10 days

What Is Transplanting?

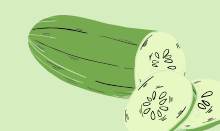
Transplanting is the process of moving a plant from one location to another, typically from a pot or seed tray to a larger container or directly into the ground. This is mostly done when the plant has outgrown its original container or is ready to be moved to a more permanent location so it can grow bigger and stronger.

Transplanting can be a bit stressful for plants, so it's essential to do it carefully to minimize shock. This usually involves handling the roots gently, providing enough water, and ensuring the new soil and environment are suitable for the plant's growth.

DAYS FROM SOWING TO TRANSPLANTING



Tomato:
18 to 21 days



Cucumber:
8 to 12 days



Watermelon:
8 to 12 days



Pepper:
30 to 40 days



Onion:
40 to 45 days



Cabbage:
14 to 25 days

SOME SEEDLING PRODUCTION METHODS

1. Seedling Beds (Like a Plant Nursery)

- Grow baby plants in raised soil beds before moving them to the field.
- Why? Saves water, protects from floods, and makes plants stronger.
- Mix soil + compost (like a plant smoothie!).
- Cover beds with dry grass to keep soil moist (called mulching).

2. Sack Gardens (Grow Anywhere)

- Plant seeds in old sacks filled with soil + compost.
- Why? Perfect for dry areas—uses less water.
- Paint sacks with fun designs if you like.

3. Seed Balls

- What: Wrap seeds in clay + compost (like tiny plant bombs).
- Why? Birds and wind can't eat them—great for reforestation!
- Roll seed balls with wildflower seeds to attract bees!

4. Banana Stem Seedlings (Recycle & Grow!)

- Use soft banana stems to start seedlings (they hold water!).
- Why? Banana stems rot slowly, giving plants extra food.

5. Tire Gardens (Turn Trash into Farms!)

- Grow seedlings in old tires filled with soil.
- Why? Tires keep plants warm and stop weeds.

CLIMATE-SMART TIPS:

- **Drought?** Use clay pots with small holes to drip water slowly.
- **Too Much Rain?** Raise beds so roots don't drown!
- **Hot Weather?** Use heat tolerant varieties.

SEEDLING CARE & MAINTENANCE

1. IRRIGATION (Watering Right)



Golden Rules:

- ✓ Morning Magic: Water early (sun won't steal your drops!).
- ✓ Gentle Showers: Use a watering can with small holes.
- ✓ Finger Test: Poke soil—if dry up to your knuckle, water!

2. ORGANIC MANURE/FERTILIZATION (Plant Food and natural boosters)



- Jeevamruth → strain → feed!
- Banana Peel Power: Bury peels near roots for potassium.

3. PROTECTION (Pest & Weather Shield!)



- Bug Patrol: Plant marigolds or sunflower to scare bad bugs away.
- Mix any organic pesticide extract of your choice+ 1L water → spray on pests.

4. HARDENING (Outdoor Training or exposing seedlings to field conditions before transplant)



Steps:

- Day 1-3: Put seedlings outside for 1 hour (morning only).
- Day 4-6: Increase to 3 hours.
- Day 7: Ready for full sun.

5. DRENCHING (Super Hydration!)



When? If soil gets too dry or seedlings look droopy.
How? Soak pots in a tray of water for 10 minutes → drain!

COMMON DISEASE AND INSECT PEST THAT AFFECTS SEEDLINGS

- Damping off and leaf miners.
- Damping off is when seedling get sick and fall over. Caused by tiny bad guys (fungus) in wet soil.

WHY IT HAPPENS:

- Too much water (soil stays wet too long).
- Dirty pots or tools (fungus hides there).
- Crowded plants (no space for air).

HOW TO STOP IT:

1. Don't overwater! Let soil dry a little.
2. Use clean pots and fresh soil.
3. Give space! Don't let seedlings cram together.

LEAF MINERS

Leaf miners are tiny insects (like baby flies or moths) that dig tunnels inside leaves, making squiggly white lines or blotches. They hurt seedlings sucking all its nutrients.

HOW TO SPOT THEM:

- ➔ Wiggly white trails on leaves (like a maze!).
- ➔ Brown or yellow spots where the bugs ate.
- ➔ Weak seedlings that don't grow well.

HOW TO STOP LEAF MINERS (NO CHEMICALS!)

1. Squish the eggs!
 - Check under leaves and crush tiny white eggs.
2. Pull off damaged leaves.
 - Throw them away so bugs don't spread.
3. Use "bug soap" spray.
 - Mix water + a little dish soap and spray leaves.



HARDENING

Seedling hardening is a process of gradually exposing seedlings to field conditions before transplanting to minimize transplanting shock.

How to harden seedlings



Remove shade or move seedlings under full sunlight for at least 5 to 7 days before transplanting.



Reduce irrigation frequency gradually.

ORGANIC PESTICIDE

Pest: is a destructive insect or animal that attacks crops, food and livestock.

Pesticides: substance used to destroy insects or organism that attacks crops food livestock etc.

Organic pesticides: are pesticides that come from natural sources, generally plants or mineral derivatives.

Importance of organic pesticide

- ✓ They are not harmful to plants and humans.
- ✓ They break down faster than chemical pesticides.
- ✓ They help add nutrients to the soil.
- ✓ Unlike chemical pesticides, they don't harm soil, pollute the environment, or negatively impact human health.

- Blend or pound all these, add water and sieve carefully.
- Remove the shaft and store in an air tight container.
- Store in the refrigerator.

How to use

Pour 75cl of the solution into 1ltr of water. Spray on plant early in the morning or late in the evening on the leaves and base of the plant.

Examples of organic pesticide

- Papaya leaf extract
- Neem leaf extract
- Tumeric extract
- Ginger extract
- Aloe vera extract
- Garlic spray
- Chilli pepper spray
- Onion extract
- Local soap solution
- Neem oil solution
- Neem cake

How to make pesticide

- Chilli pepper(2 table spoon)
- A head of Garlic
- Ginger finger(2)
- Tumeric finger(2)
- Aloe vera(3)
- Neem leaves(2 hands full)
- Papaya leaves(2)
- Onion(1)

TIPS: Spoilt or fermented organic pesticides can be used as organic manure to boosts the soil health and crop yield.



Be a hero like Yusuf.
Dear Young Farmer,
You just learned how to grow food the healthy way without chemicals that hurt our soil, water, and bodies. Now it is YOUR turn to help others.



1. **Share your Knowledge:** If you see someone using chemical pesticides or bad farming tricks, kindly share Yusuf's secrets and share that you grow your own mini garden at school or home.
2. **Be a Helper:** Offer to teach little brothers/sisters or neighbors about organic farming.
3. **Be Proud:** Every time you choose organic farming because you:
 - Protect useful insects (like bees and butterflies!).
 - Keep families safe from dangerous chemicals.
 - Save the Earth for the future!

Together, we can grow a healthier Nigeria, one seed at a time.

WATERING CAN PLEDGE



I, [_____] (aka: _____) Will always:

- Water plants wisely.
- Be kind to bugs (even the weird-looking ones – they're pest police!).
- Teach at least 1 person) how to make organic manure or pesticide.

Signed _____
Date: _____



Wayyo! Meyasa kayan lambun mu na bana sukayi kanana kuma sukayi kamar marasa lafiya?



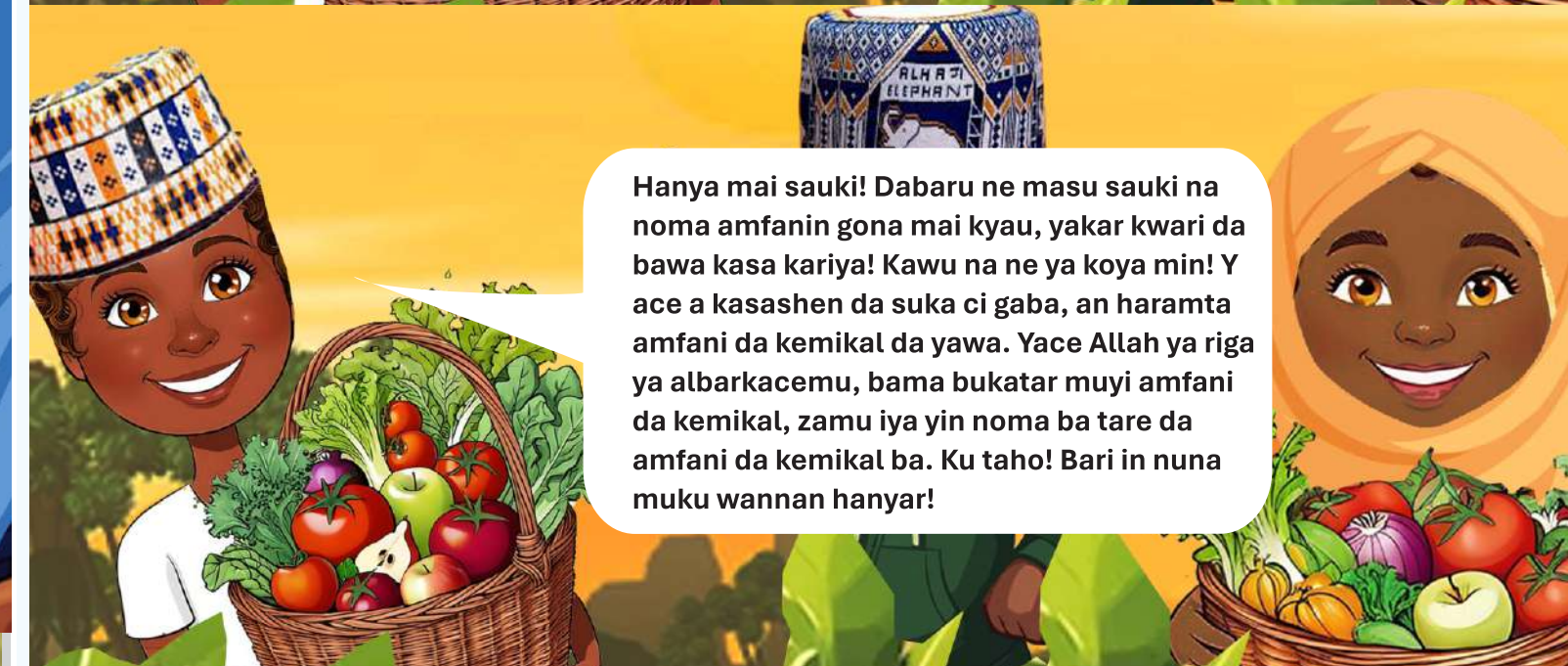
Nayi amfani da maganin feshi na kemikal—amfanin gona ta sunyi manya-manya! Amma... shin za a iya cin su kuwa?



Tambaya ce mai kyau! Wadannan kemikal din na iya sa amfanin gona su girma da wuri...amma zasu iya saka mu rashin lafiya ko kuma zasu iya cutar damu idan muka tsufa?



MashaAllah, Yusuf! Ka samu amfanin gona mai kyau! Kayan lambun ka sunyi kyau kuma launinsu mai kyau! Menene sirrin?



Hanya mai sauki! Dabarun ne masu sauki na noma amfanin gona mai kyau, yakar kwari da bawa kasa kariya! Kawu na ne ya koya min! Yace a kasashen da suka ci gaba, an haramta amfani da kemikal da yawa. Yace Allah ya riga ya albarkacemu, bama bukatar muyi amfani da kemikal, zamu iya yin noma ba tare da amfani da kemikal ba. Ku taho! Bari in nuna muku wannan hanyar!



EH! Koya mana, Yusuf!

EH! Koya mana, Yusuf!

EH! Koya mana, Yusuf!

EH! Koya mana, Yusuf!



01 GABATARWA

Manoma musamman a Najeriya na yawan amfani da maganin kwari masu illa don bawa amfanin gonarsu kariya. Amma wadannan magunguna na cutar da mutane, dabbobi da muhalli. Manoma da yawa basu san akwai wasu hanyoyi marasa cutarwa ba na magance wadannan kwarin. Wannan shi ake cewa **organic farming**.

WANNAN LITTAFIN NA KOYAR DA KANANAN MANOMA KAMAR KAI/KE YADDA AKE:

Magance kwari da cututtukan amfanin gona.

Hada maganin kwari na gargajiya wanda ake kira da biopesticides a maimakon maganin kemikal.



Gane cewa wadannan magunguna na kemikal suna da hatsari.

Hada taki na gargajiya.

Yafa irin kayan lambu daban daban.



02

MEYASA MAGANIN KWARI NA KEMIKAL YAKE DA HATSARI?

Maganin kwari na kemikal na iya taimakawa wajen kashe kwari, amma suna da hatsari. Hakan zai jawo babban matsala yanzu ko a nan gaba.



Wasu magungunan kwarin suna da hatsari sosai kuma suna sa mutane rashin lafiya. Za ka iya jin jiri, amai, ciwon kai ko ciwon ciki idan ka taba, ko ka shaki wadannan magungunan.



Suna da illa ga muhalli saboda suna kashe halittu masu amfani kamar kudan zuma wanda ke taimakawa wajen **pollination** wato kulla aure, yana gurbata ruwa, sannan ya cutar da dabbobi kuma.



Ko kun san? Europe ta haramta amfani da wadannan magungunan saboda suna da matukar hatsari. Amma wasu kamfanunuwan suna siyarwa a Najeriya har yanzu. Hakan bai dace ba. Yana saka manoma da sauran mutane a cikin hatsari. Lallai muna bukatar muyi kokari wajen kare kanmu! Idan kana amfani da wannan maganin kwarin na kemikal na tsahon shekaru, yana iya sa cutar kansa, lalata kwakwalwa da jijiyoyi, ciwon siga da sauransu.

Menene sinadaran da maganin ya kunsu sannan ta ya ya zamu ganesu a jikin maganin?

Sinadaran da magani ya kunsu shine kemikal mai karfin dake cikin maganin wanda yake kashe kwari amma fa yana da illa ga lafiyarmu.

Wasu sinadaran da ake samu a cikin maganin sun hada da:

- Profenofos
- Triazophos
- Cypermethrin
- Chlorpyrifos (da sauransu)

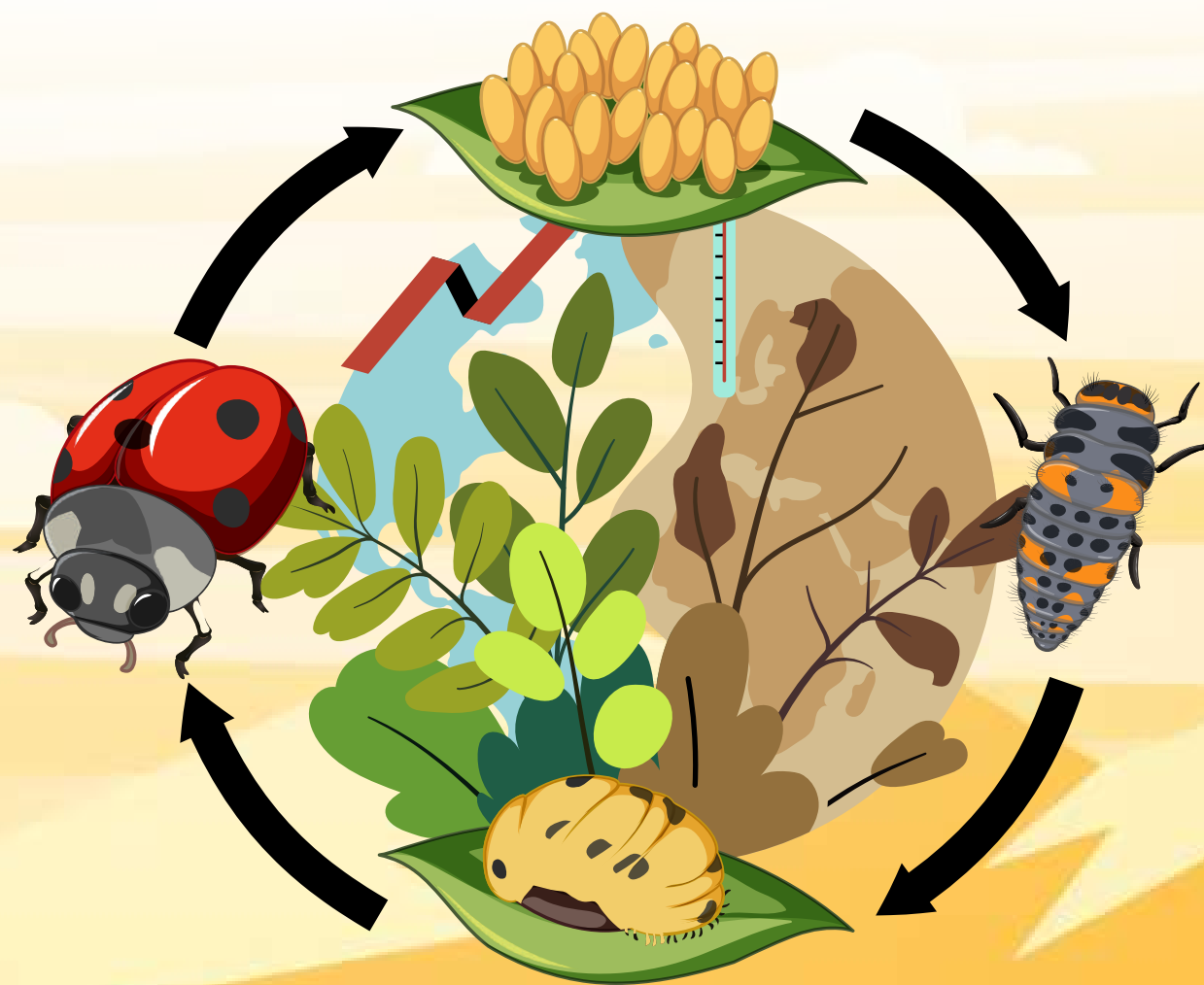
Wadannan sinadarai na iya haifar da cutar kansa, lalata kwakwalwa da sa mutane rashin lafiya.

A KULA: Ya ku kananan masu tasowa! Mu noma abinci mai inganci kuma mu kula da duniyarmu! Noma mara kemikal (organic) hanya ce mai kyau na cimma hakan. Ta hanyar guje wa amfani da magungunan kwari masu guba, muna kare kasarmu, iskarmu da ruwanmu daga gurbacewa. Ba iya wannan ba, muna kuma noma 'ya'yan itatuwa da kayan lambu masu dadi da kyau ga lafiyarmu. Ku ci gaba da bincikawa, koyo, da noma ba tare da amfani da kemikal ba! Kuna kawo sauyi!



03

HANYOYIN MAGANCE KWARI DA CUTUTTUKAN AMFANIN GONA



KASA MAI INGANCI + KWARI MASU AMFANI = INGANTACCEN SHUKA!

Zaka iya dakatar da kwari ta hanyar noma amfanin gona ta hanyar da ya dace.



Ko kun san? Kasa mai inganci na tsirar da amfanin gona masu inganci, kamar yadda cin abinci mai kyau yake sa ka kasance cikin koshin lafiya.

KANA SON RAGE Y AWAN KWARI?

Dakatar da su kafin
su fara!!

A saman kasa: A shuka amfanin gona daban daban a tare a layi daya, kwari sunfi son wasu akan wasu.

A cikin kasa: A bar kasa da damshi da taushi (kamar wani gado mai laushi da aka shiryawa saiwar shuka!).

Canza nau'in amfanin da za a noma (canza abunda zaka noma duk shekara) saboda kar kwarin su samu sake.

Kayi noman a lokacin da ya dace—wasu shukan na son ruwan sama, wasu na son rana.

Duk da haka idan an samu aukar kwari da cututtuka, wannan jagorar zai nuna maka maganin kwari na gargajiya masu araha da zaka fesa a gonarka ba tare da kayi amfani da kemikal ba.

DABARUN NOMA MASU KYAU

- Shinge a kewaye da gona don bawa gona kariya daga iska da kuma dabbobi.
- Shuka marigold ko lemongrass a gona don su taimaka wajen kore kwari.
- Aske ganye masu cuta da tsofaffin ganye don samun wadataccen iska da hasken rana.
- Lullube kunya don kasar ta rike laima da kuma rage fitowar ciyawa.
- Amfani da maganin kwari na gargajiya.

DABARUN NOMA MARASA KYAU

- Rashin tsaftar gona (ciyayi na zama matattarar kwari).
- Rashin bada tazarar da ya dace a tsakanin shuka.
- Amfani da maganin kemikal.
- Noma amfanin gona guda daya a gona ko da yausha, yana sa kwari da cututtuka su samu wajen zama.
- Kone gona (yana kashe halittun cikin kasa masu amfani).

Ko kun san? Kasa mai inganci ita take bada amfanin gona mai inganci - kamar yadda kake kasancewa cikin koshin lafiya in kaci abinci mai kyau:

kamar yadda kake kasancewa cikin koshin lafiya in kaci abinci mai kyau:

- Kasa mai inganci tana da rai ne idan tana da kananan mataimaka (kananan halittu, tsutsotsi da fungi masu amfani) wannan su ke ciyar da shuka, tayi lafiya kuma ta samu damar yakar kwari da cututtuka.
- Kasar kuma na dauke da humus (shine takin komfos wanda Allah ya bamu) kuma tana rike ruwa kamar soso.

Abunda kasa mai inganci take yi:

- ✓ bawa shuka kariya daga kwari da cututtuka.
- ✓ Hana zaizayar kasa (ruwa bazai wanke kasar ba!).
- ✓ Barin saiwa tayi numfashi sannan ta zuki sinadarai cikin sauki.



KOMFOS DA TAKIN KOMFOS

komfos wani abu ne mai dauke da sinadarai wanda yake samuwa ta hanyar rubewar datti na shuka ko na dabbobi kamar ganye, ragowar abinci, da sauransu wanda ke taimakawa wajen inganta lafiyar kasa. Takin komfos hanya ce da wadannan abubuwan da aka lissafa suke narkewa su zama wani abu kamar kasa.

MUHIMMANCIN TAKIN KOMFOS

Takin komfos yana karawa kasa muhimman sinadarai, inganta kasar da kara mata lafiya:- Kananan halittun dake kasar wanda ke kara mata lafiya. Kuma yana taimakawa wajen kulawa da ruwa. Kasar da taji takin komfos sosai tana rike ruwa, sai ta kasance ta rage bukatar da shuka ke yiwa ruwa sannan ta rage asarar ruwa.

ABUBUWAN DA AKE BUKATA DON HADA KOMFOS



BIOMASS (busassun ganye).



Ruwa don samar da laima.



Kashin shanu.



Leda don lullubi.

HANYAR HADA TAKIN KOMFOS

Mataki na 1: tona rami mai zurfin mita 2 da fadin mita 2.



01

Mataki na 2: shinfida busassun ganyen a kai, ya kai tudun 15cm zuwa 20cm.



02

Mataki na 3: saka korayen ganyen.



03

Mataki na 4: saka kashin shanu.



04

Mataki na 5: saka ruwa don a samu laima.



05

Mataki na 6: lullube da leda don su rube da kyau.



06

Mataki na 7: a juyasu bayan makonni 2.

07

A KULA: bayan watanni 2 zuwa 4, takin ka ya kammala. A saka takin komfos din a gona kafin da kuma bayan anyi gyaran gona.

Tsara irin amfanin gonar da za a noma, ba wanda aka saba nomawa ba da kuma yadda za a ratsa wani amfanin gonar cikin wani, da misalansu.

Canza amfanin gonar da za a noma: Yi tunani idan ace kullum shinkafa kake ci, zaka gaji, sannan jikinka bazai samu duka sinadaran da yake bukata ba! To haka suma shuka suke ji.



SHEKARA TA 1:

Noma masara (tana shanye sinadarin Nitrogen daga cikin kasa).



SHEKARA TA 2:

Noma wake (suna bawa kasa sinadarin nitrogen).



SHEKARA TA 3:

noma doya (tana bukatar kasa mai inganci).

Ratsa wani amfanin gonar cikin wani: wasu shukan na tainakawa juna wajen girma. Gwada:



Masara + Wake = wake sai ya bi jikin masara kamar tsani!

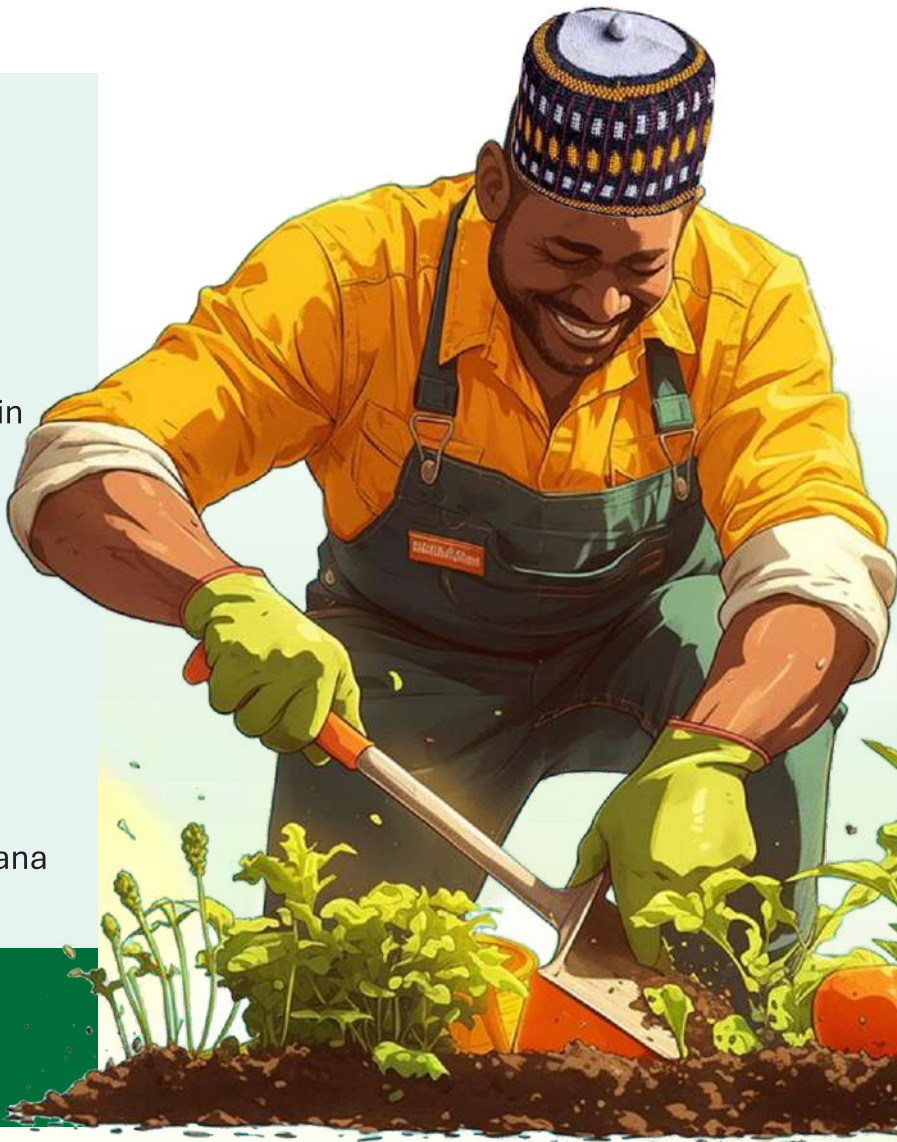


Tumatir + Basil = Basil na korar kwari!



Dankali + sunflower = sunflower yana tsorata mugayen kwari!

Ka'ida: Shuka mai tsaho + shuka mara tsaho = abokan juna!



YADDA AKE HADA TAKIN GARGAJIYA

Wannan takin gargajiyar ana kiransa Jeevamruth. Taki ne na ruwa wanda aka hada shi da kashin shanu, fitsarin shanu da nunannun amfanin gona, wanda suke dauke da sinadarai kamar nitrogen, phosphorus, potassium, carbon da sauransu. Suna taimakawa wajen inganta lafiyar kasa, saboda haka suna kara yawan amfanin da za a samu a gonar.

MUHIMMANCIN JEEVAMRUTH

- ✓ Yana taimakawa wajen inganta lafiyar kasa.
- ✓ Kara yawan amfanin gonar da za a samu.
- ✓ Ana amfani dashi wajen daidaita sinadaran dake cikin kasar.

ABUBUWAN DA AKE BUKATA DON HADA JEEVAMRUTH!

- ✓ Kashin shanu (1kg) – jarumi ne da kananan halittu ke so!
- ✓ Fitsarin shanu (1 liter) – cike suke da sinadarai!
- ✓ Mazarkwaila (100g) ko rubabbun kayan marmari - abincin kananan halittu!
- ✓ Fulawa/garin gurjiya (100g) – taimakawa kananan halittu su girma!
- ✓ kasa cikin hannu (daga gonarka) – tana dauke da kananan halittu!
- ✓ Ruwa (5 liters).

YADDA AKE HADA JEEVAMRUTH

Mataki na 1: A cikin babban bokiti, saka kashin shanu + fitsarin shanu + mazarkwaila + fulawa/gurjiya + kasa.

Mataki na 2: gauraya da kara.

Mataki na 3: zuba ruwa sai ka dan jira

Mataki na 4: zuba ruwa 5 liters sai ka gauraya da kyau.

Mataki na 5: a rufe da tsumma (banda murfi!) a barshi a inuwa na tsahon kwanaki 3.

A gauraya kullum:

Kullum da safe, a gauraya ta bangaren dama sau 5 (kananan halittu suna son atisaye!).

Bayan kwanaki 3, tace sai ka hada 1 liter na Jeevamrutham da 10 liters na ruwa.

A zuba a kusa da saiwar shuka don samun kasa mai inganci sosai!



IRIN DASHE

Kamar yadda jarirai ke girma su zama manya, haka lafiyayyun irin dashe suke girma su zama kayan lambu masu karfi kuma mafi inganci.

ME YAKE SA A SAMU IRIN DASHE MAI INGANCI?

- ✓ Saiwa mai karfi: kamar "kafafun" shuka su ke (don shan ruwa da cin abinci).
- ✓ korayen ganye: kamar "fanel din sola" na shuka su ke (don samun karfi daga rana).

Ta ya ya zamu inganta yadda manoma ke rainon iri?

- Zaben wajen da ke samun wadataccen hasken rana.
- Kashe kwayoyin cutar dake cikin kasa.
- Shirya kunya/kunya mai tudu.
- Kariya daga ruwan sama.
- Gidan sauro.
- Yafa iri a jere a layi.

INGANTACCEN HANYAR RAINON IRI A KASA/GONA

Rainon iri a kasa yana nufin rainon iri a gona wanda abu ne da manoma suka saba.

Ana la'akari da wadannan a lokacin da ake rainon iri ta wannan hanyar;

- A zabi wajen da babu bishiyu da ciyayi don kaucewa inuwa, a inda yafi tudu a gonar.
- A gyara kasar wajen.
- A shirya kunya mai tudun 20cm a lokacin rani da 30cm a lokacin damuna.

- A yiwa kunyar ban ruwa a rufe ta da leda sannan a barshi ya sha rana na tsahon sati 3 (solarization).
- A saka takin gargajiya a kunyar don kara wa kasar sinadarai da kuma kara sa kasar ta ringa rike ruwa, sai kuma a yi wa kunyar ban ruwa.
- A tabbata kunyar tana da damshi kuma laima bata yi yawa ba yadda zata hana yafin.
- A lokacin zafi, ana iya rufe kunyar da gidan sauro don rage zafin rana.
- Ana iya amfani da gidan sauron kuma don bawa irin kariya daga kwari.

YADDA AKE Yafa IRI A WAJEN RAINO

- ✓ Kananan iri (misali, tumatir, tattasai ko kabeji).
- ✓ Kunya (wani tudun kasa da aka daga yayi tudu).
- ✓ Kasa mai laushi a hada ta da takin komfos.
- ✓ Butar ban ruwa ko roba.
- ✓ Kara ko lura.



A GYARA KASAR

- Baje kasar da hannuwanka (kamar yadda ake yiwa matashi yayi laushi).
- A cakuda da takin komfos don ya kara inganci.

A ZANA SIRARAN LAYIKA



- Yi amfani da lura/kara don zana layika marasa zurfi (zurfin 1cm) a cikin kasa.
- A bada tazarar 10cm a tsakanin layikan (kamar tsahon hannu).



A SAKA IRIN

- A saka irin a cikin layin tare da bada tazarar 2cm a tsakaninsu (kamar kananan sojojin dake tsaye a layi).
- Manyan iri (kamar wake) ana saka su da dan zurfi ba kamar kananan iri ba (irinsu tumatir).



A RUFESAI A DAN DANNA A HANKALI

- A barbada kasa a saman irin (kamar dai an kwantar dasu barci).
- Kar ka matse su! Dannan sama-sama da tafi hannunka.



YI BAN RUWA CIKE DA KAUNA

- Yi amfani da butar ban ruwa wanda ke da kananan ramika (ko kuma robar da aka huhhuda murfinta).
- A yi ban ruwan a hankali don kar a wanko irin waje.



A LULLUBE KUNYAR DA ROBAR SHINKAFA DON RIKE LAIMA DA TSIROWAR IRIN MAI KYAU.

A kula: Kullum a ringa dubawa ko sun tsiro, a cire lullubin da zarar sun fara tsirowa don kaucewa zallakewar iri wato etiolation (shuka tayi tsaho, ta kode sannan ta zama mara karfi saboda rashin hasken rana).



HASKEN RANA DA BADA KULAWA

- A yi kunyar a inda zai ringa samun hasken hasken rana na safe.
- A ringa ban ruwa duk safiya (kasar ta kasance da laima kamar soso).

A cikin kwanaki 5 zuwa 10: kananan ganye zasu fito (ana kiransu "irin dashe").

Idan suka isa dashe: A dasa su a babban buhu.

IRE-IREN KASAR YAFI

1. Kasar yafi wacce ake hadawa:

- kaso 1 na kasar bola + kaso 1 takin komfos + kaso 1 yashi/buntun shinkafa (don ruwa ya ringa zirarewa).

2. Cocopeat:

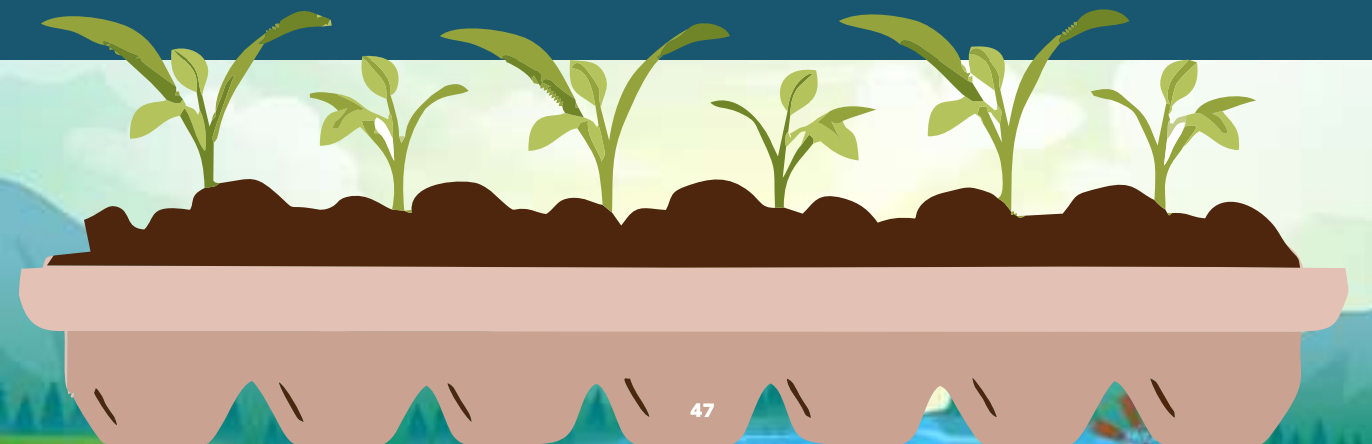
- Kaso 2 cocopeat (garin bayan kwakwa ne, yana rike ruwa sosai) + kaso 1 garin gawayi (yana sabunta kasa).

3. Kasar jeji mai siddabaru:

- Rubabbun ganye + kasar shuri (cike take da kananan halittu wanda ido baya iya gani).

4. Sake sarrafa datti don yin kasar yafi

- Nikakken bawon kwai (don samun sinadarin calcium).
- Ayi amfani da ganyen shayi/garin coffee (suna kara sinadarai).



YADDA AKE HADA KASAR YAFI CIKIN MATAKAI 4 MASU KAYATARWA



1. A tankade ta!

- A cire karare/duwatsu da rariya ko da raga-raga.



2. A hada ta

- A hada kayan hadin a cikin bokiti.
- Tukwici na musamman: a zuba cokali daya na toka don kariya daga cututtuka!



3. Gwada ta!

- Debi cikin hannunka ka matsa ta - ta kasance:
 - ☒ Ta dunkule idan aka matsa.
 - ☒ Idan aka tsikareta kuma ta baje.
- Idan ta jike da yawa: kara kasa/buntun shinkafa.
- Idan ta bushe da yawa: saka takin komfos.



4. A juye ta a wani abu!

- A zuba a cikin mazubi, robobi (kamar robar madarar yagwat), ko farantin yafi.
- A huda kasan robobin saboda saiwar su ringa shan iska.

KWANAKIN DA IRI KE YI DAGA YAFI ZUWA TSIROWARSU



Tumatir

Bazara : kwanaki 3 zuwa 6
Rani : kwanaki 10 zuwa 15



Kokwamba

Bazara: kwanaki 2 zuwa 5
Rani: kwanaki 2 zuwa 7



Tattasai

Bazara: kwanaki 3 zuwa 6
Rani: kwanaki 10 zuwa 15



Kabeji

Bazara: kwanaki 3 zuwa 5
Rani: kwanaki 3 zuwa 12



Salak/latas

Bazara: kwanaki 2 zuwa 6
Rani: kwanaki 3 zuwa 5



Kankana

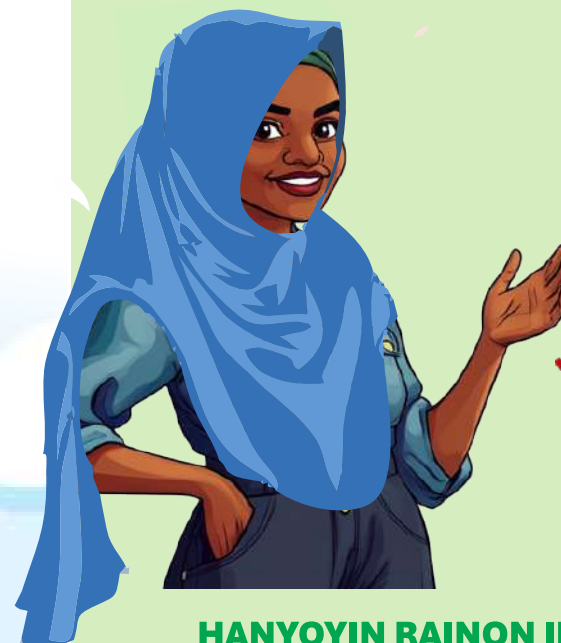
Bazara: kwanaki 2 zuwa 5
Rani: kwanaki 3 zuwa 10

Menene dashe?

Dashe wata hanya ce ta canzawa shuka waje daga wani wajen, watakila daga mazubi ko farantin yafi zuwa wani wajen da ya fi girma ko kuma zuwa cikin kasa kai tsaye. Ana yin hakan ne a lokacin da shuka tafi karfin robar da take ciki ko kuma idan shuka ta kai lokacin da za a kaita waje mai girma don tafi girma da inganci.

Dashe yana dan wahalar da shukan, saboda haka yana da muhimmanci a bisu a hankali don rage irin wahalar da zasu sha. Hakan ya kunshi bin saiwar a hankali, basu wadataccen ruwa da tabbatar da cewa inda za a kaisu ya dace sannan shuka zata iya girma a wajen.

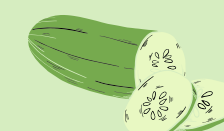
KWANAKIN DA IRI KE YI DAGA YAFI ZUWA DASHE



Tumatir:
kwanaki 18
zuwa 21



Tattasai:
kwanaki 30
zuwa 40



Kokwamba:
kwanaki 8
zuwa 12



Albasa:
kwanaki 40
zuwa 45



Kankana:
kwanaki 8
zuwa 12



Kabeji:
kwanaki 14
zuwa 25

HANYOYIN RAINON IRI

1. Kunyar yafi/bedin yafi (kamar wajen rainon shuka)

- A raini jariran shuka a kunya mai tudu kafin a kaisu gona.
- Meyasa? Adana ruwa, kariya daga ambaliyar ruwa sannan yana karfafar shuka.
- Hada kasa + takin komfos (kayan dadin da shuka ke so!).
- lullube kunya da busassun ganye don ta ringa rike laima (ana kiranshi mulching).

2. Noma a buhu (Noma a ko ina)

- Shuka iri a tsafaffin buhun da aka cika da kasa + takin komfos.
- Meyasa? Ya dace sosai da wuraren da ba ruwa—ruwa kadan yake bukata.
- Yi zane masu ban sha'awa a jikin buhun idan kanaso.

3. Kwallon yafa iri

- Menene: lullube irin da tabo + takin komfos (kamar wasu kwallaye).
- Meyasa? Iska da tsuntsaye baza su cinyesu ba—ya dace sosai da rainon irin bishiya!
- A nade kwallon irin da furanni don jawo hankalin kudan zuma!

4. Rainon iri a karar shukar ayaba (Sake sarrafawa don yin noma!)

- Ayi amfani da karar shukar ayaba don rainon iri (suna rike ruwa!).
- Meyasa? Karar shukar ayaba na rubewa a hankali, saboda haka yana bawa shuka karin abinci.

5. Lambun tayoyi (mayar da shara gona!)

- A raini iri a cikin tsafafin tayan da aka cika da kasa.
- Meyasa? Tayoyi suna samar wa shuka dumi sannan su bata kariya daga ciyawa.

SHAWARWARIN DA SUKA DACE DA SAUYIN YANAYI:

- **Karancin ruwa?** Ayi ban ruwa idan ruwan sama ya yanke.
- **Ruwan sama yayi yawa?** A daga kunya don kar saiwar shuka ta kasance cikin ruwa!
- **Yanayin zafi?** Ayi amfani da iri mai jurewa yanayin zafi.

KULAWA DA IRIN DASHE

1. BAN RUWA (yin ban ruwa yadda ya dace)



Gwala-gwala ka'idoji:

- ✓ Siddabarun safiya: Ayi ban ruwa da wuri (rana baza ta kone maka ruwan ba!).
- ✓ Fesa ruwa a hankali: Ayi amfani da butar ban ruwa mai kananan ramuka.
- ✓ Gwajin dan yatsa: Tsikari kasar—idan a bushe take har zuwa gabar dan yatsan ka, to yi mata ban ruwa!

2. TAKIN GARGAJIYA *(abincin shuka ne kuma yana inganta shuka)



- Takin Jeevamruth → a tace → a bawa shuka!
- Garin bawon ayaba: A bunne kusa da saiwar shuka domin samun sinadarin potassium.

3. BADA KARIYA (kariya daga kwari da kuma yanayi!)



- Tsaro don kwari: A shuka marigold ko sunflower don kore mugayen kwari.
- Hada duk wani maganin gargajiyan da kaga dama + 1L na ruwa → fesawa kwari.

4. HORAR DA IRI (horar da iri a waje/fito dasu waje don su saba da irin yanayin da zasu samu a gona kafin a dasa su)



Matakai:

- Rana ta 1 zuwa ta 3: A fito da irin dashe waje na tsahon awa 1 (da safe kawai).
- Rana ta 4 zuwa ta 6: A kara awanni 3.
- Rana ta 7: Sun shirya tsaf don fuskantar gona.

5. JIKA KASA (bawa shuka ruwa sosai!)



- Yaushe? Idan kasa ta bushe sosai ko irin dashe suka nuna alamar yaushi.
- Ta ya ya? A saka mazubin da akayi yafin a cikin faranti mai dauke da ruwa na tsahon mintuna 10 → sai a tsiyaye ruwa!

CUTUTTUKA DA KWARIN DA KE KAMA IRIN DASHE

- Mageduwa, tsutsa mai zane a jikin ganye.
- Mageduwa shine idan irin dashe ya kamu da ciwo sai kaga ya kwanta. Wasu kananan halittu marasa kirki ne wato fungus suke jawo shi a kasa mai damshi.

MEYASA AKE SAMUN CUTAR:

- In ruwa yayi yawa (damshi ya dade a jikin kasar).
- Mazubin yafi ko kayan aiki masu datti (fungus na buya a nan).
- Cunkoson shuka (babu sararin da iska zai kewaye).

YADDA ZA A DAKATAR DASHI:

1. Kar ban ruwa yayi yawa! A bar kasar ta dan shanye kadan.
2. Ayi amfani da tsaftataccen mazubin yafi da kasa mai kyau.
3. A bada tazara! Kar a bar irin dashe su cunkushe.

TSUTSA MAI ZANE A JIKIN GANYE

Tsutsa mai zane a jikin ganye kananan tsutsa ne da suke haka a cikin ganye, sai suyi farin zane kamar tafiyar maciji a jikin ganye. Suna cutar da irin dashe, su zuke mata gaba daya sinadaranta.

YADDA AKE GANE SU:

- Zane mai kamar tafiyar maciji a jikin ganye (a cukurkude!).
- Tabo mai launin rawaya ko launin kasa a inda tsutsar ta ci.
- Irin dashen da sukayi rauni basa girma da kyau.

YADDA ZA A DAKATAR DA TSUTSA MAI ZANE A JIKIN GANYE (BA TARE DA AMFANI DA KEMICAL BA!)

1. A fasa kwayayensu!

- A duba bayan ganye sannan a murje kananan kwayayen, farare.

2. A tsinke ganyen da suka lalata.

- A je a jefar don kar kwarin su yadu.

3. Ayi amfani da sabulun kwari/ maganin feshi na gargajiya.

- A hada ruwa + ruwan sabulu kadan/ maganin feshi na gargajiya, sai a fesa a ganyen.



HORAR DA IRI

Horar da irin dashe hanya ce ta saka irin dashe ya saba da irin yanayin da zai je ya samu a gona kafin lokacin da za a dasa shi don rage wahalar da irin zai sha bayan an dasa shi.

Yadda ake horar da irin dashe



A yaye inuwar da aka musu ko a fitar dasu rana na akalla kwanaki 5 zuwa 7 kafin a dasa su.



A ringa rage yawan ruwan da ake basu a hankali.

MAGANIN KWARI NA GARGAJIYA

Kwari: Sune kwari ko dabbobi da suke cutar da amfanin gona, abinci da dabbobin gida.

Maganin kwari: Abunda ake amfanin dashi don magance kwari ko halittun dake cutar da amfanin gona, abinci da dabbobin gida da sauransu.

Maganin kwari na gargajiya: Maganin kwari ne da aka samo shi daga asali, mafi yawanci daga jikin shuka.

Muhimmancin maganin kwari na gargajiya

- ✓ Basu da illa ga shuka da mutane.
- ✓ Sun fi maganin kemikal saurin bin jikin shuka.
- ✓ Suna taimakawa wajen kara sinadarai a cikin kasa.
- ✓ Ba kamar maganin kemikal ba, wannan su basa gurbata kasa, muhalli ko taba lafiyar dan adam.

- Albasa (1)
 - A markada su duka, a sa ruwa sai a tace a hankali.
 - A zuba a mazubi sannan a rufeshi sosai.
 - A ajiye a na'ura mai sanyi

Yadda ake amfani dashi

Zuba 75cl na ruwan maganin a cikin lita 1 na ruwa. A fesawa shuka da sassafe ko da yamma a jikin ganye da tushen shukar gaba daya.

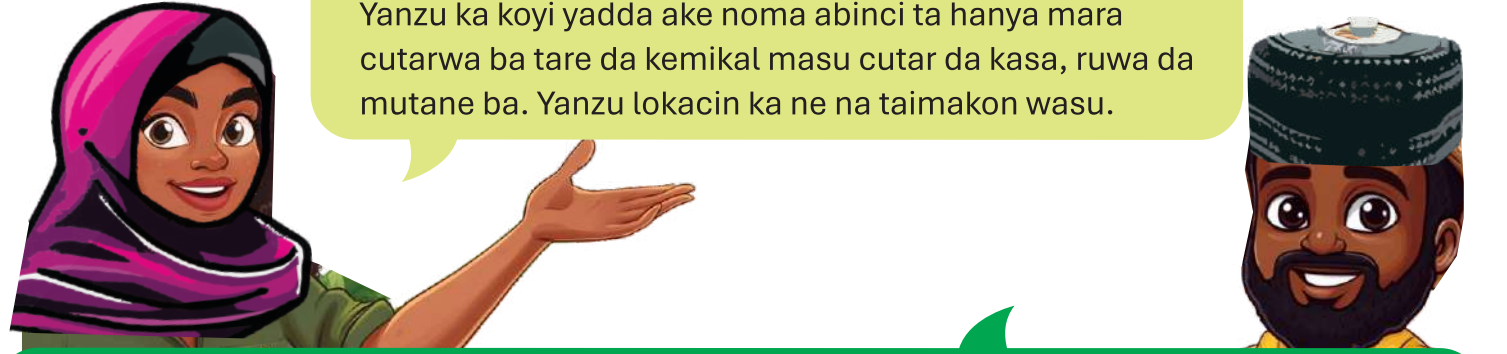
Misalan maganin kwari na gargajiya

- Ruwan ganyen gwanda
- Ruwan ganyen darbejiya
- Ruwan kurkum
- Ruwan citta
- Ruwan Alobera
- Ruwan tafarnuwa
- Ruwan borkono
- Ruwan albasa
- Ruwan sabulu
- Man darbejiya
- Tunkuzar man darbejiya

Yadda ake hada maganin kwari na gargajiya mai kyau

- Borkono (babban cokali 2)
- Dunkulen tafarnuwa
- Dunkulen citta (2)
- Dunkulen kurkum (2)
- Alobera (3)
- Ganyen darbejiya (cikin hannu 2)
- Ganyen gwanda (2)

SHAWARA: maganin kwari na gargajiya wanda yayi tsami za a iya amfani dashi a matsayin taki don kara inganta lafiyar kasa da yawan amfanin gonar da za a samu.



Ka zama jarumi kamar Yusuf.
Ya matashin manomi,
Yanzu ka koyi yadda ake noma abinci ta hanya mara cutarwa ba tare da kemikal masu cutar da kasa, ruwa da mutane ba. Yanzu lokacin ka ne na taimakon wasu.

- Yada ilimi:** Idan kaga wani yana amfani da maganin kwari na kemikal ko kuma yin noma ta hanya mara kyau, to ka bada labarin sirrin Yusuf sannan ka bada labarin karamin lambun ka a makaranta ko a gida.
- Ka zama mai taimako:** ka koyar da yara maza da mata ko makota akan noma amfanin gona ta hanya mara cutarwa wato organic farming.
- Kayi alfahari:** a duk lokacin da ka zabi noma amfanin gona ta hanya mara cutarwa (organic farming) to kana:
 - Bawa kwari masu amfani kariya (kamar kudan zuma da malam bude mana littafi!).
 - Kare iyali daga illar kemikal.
 - Ceton duniya don amfanin gaba !A tare, zamu iya inganta Najeriya ta hanyar noma abinci mai kyau, da sannu sannu.

WATERING CAN PLEDGE



I, [SUNAN YARO/YARINYA]
(wanda/wacce aka fi sani da: _____) Ko da yaushen zan ringa:

- Yiwa shuka ban ruwa cikin hikima
- Kyautata wa kwari (har da munanan su – sune yan sandan kwari masu magance mugayen kwari!)
- Koyar da akalla mutum daya) yadda ake takin gargajiya ko maganin kwari na gargajiya.

Sa hannu _____
Kwanan wata: _____



PROJECT TITLE:

Empowering Children Through Sustainable Agriculture: Training in Agroecology and Organic Farming for Elementary School-Aged Children

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