



TIST HABARI MOTOMOTO APRIL 2026

www.tist.org. Email: info@tist.org Tel. +255784-537720



Photo 1: Sylvester's Grove

In this newsletter, we are going to have two articles;

- (I) Practicing Mulching in your Farm
- (II) A lesson on alternative charcoal from TIST farmer Sylvester Mtondo

(1) Practicing Mulching in your Farm

Mulching is the Practice of covering soil's surface to help soil temperature, retain moisture, suppress weeds and control soil erosion. You can use either dry leaf mulch or green leaf mulch. Dry leaf mulch includes dry grass, fallen leaves from trees, sawdust, and other dry materials. Green leaf mulch includes chopped weeds, banana leaves, rice straw, vegetable scraps, and fresh grass.

What to do when you want Mulching in your farm:

- 1. Prepare the Area:** Clear weeds and other living things from around the tree trunk in a circle of at least 30-50 cm from the trunk.
- 2. Watering:** Make sure the soil is moist enough before mulching to retain moisture.
- 3. Choosing Materials:** Use natural materials such as dry leaves, grass, tree bark, or crop residues.
- 4. Spreading the Mulch:** Spread the mulch around the tree at a thickness of 5 to 10 cm.
- 5. Avoiding the Trunk: Very important:** Do not apply the mulch directly to the trunk; leave a space of 5-10 cm between the trunk and the mulch to prevent rotting of the tree bark and insect infestation.

Benefits of Dry Mulching

1. Reduces weed growth by keeping light from reaching the soil surface.
2. Reduces water loss from the soil surface, which helps maintain soil moisture.
3. Moderates soil temperatures, keeping it warmer on cold nights and cooler on hot days.
4. Protects bare soil thus reducing erosion and soil compaction.
5. Protects plants from the harsh conditions of winter freezes and winds.
6. Feeds our soil's living microorganisms with nutrients.
7. Creates healthier soil structure for plants, limiting compaction.
8. Keeps soil from splashing onto leaves thus reduces the chance of plants getting fungal and bacterial diseases.
9. Makes gardens look attractive thus giving a uniform appearance to the garden design
10. Keeps plants clean and off the ground, especially tomatoes and melons, to avoid plant disease.
11. Mulching slowly increases soil fertility and may make micronutrients already in the soil more available.

- 12. Makes water move more readily into soil covered with mulch instead of running off.
- 13. Improves plant health and growth (due to fewer weeds and more consistent moisture and soil temperature).
- 14. Breaks down and feeds the soil (if it's organic mulch).
- 15. Mulching improves the structure of clay soils and the moisture-holding capacity of sandy soils.



Photo 2: An example of mulching



Photo 3: An example of mulching

(II) A lesson on alternative charcoal from TIST farmer Sylvester Mtondo

Alternative charcoal is a cooking fuel made from agricultural residues such as corn and sorghum stalks, rice husks, dry grass or dry waste and soaked paper instead of cutting down trees. It is environmentally friendly, lasts longer, and reduces energy costs compared to conventional charcoal.

This charcoal is environmentally friendly due to the use of waste, but also if the technology is further developed; it will be an alternative to conventional charcoal which is produced from cutting down trees, a situation that threatens the well-being of forests and the environment in general.

Benefits of Alternative Charcoal:

- **Environmental Protection:** It is produced without destroying forests, thus helping to combat climate change.
- **Raw Materials:** It uses readily available raw materials such as corn stalks and sorghum stalks, rice husks, dry grass or dry garbage and soaked paper.
- **Efficiency:** Often burns longer and hotter than traditional charcoal and Produces less smoke
- **Innovation:** It is an economical solution that uses briquettes manufacturing technology.
- It is easier to make
- **Reduces Deforestation:** Decreases demand for hardwood trees.
- **Waste Management:** Converts organic waste and sawdust into fuel.

Materials Needed:

1. Kiln: used to burn charcoal (has three main parts)
 - a. Furnace which is a pipe
 - b. Lid
 - c. Dohan and punch
2. Raw materials like garbage, crop residues, dry grasses, etc.)
3. Binder: Cassava flour, starch, or clay
4. Water
5. Mold (optional: PVC pipe or handmade mold).

Steps:

1. Organize well the raw materials and put them in the kiln
2. Turn on the fire on both sides of the kiln and cover it with a lid
3. Burn the raw materials in a low-oxygen, high-temperature environment to turn them into carbon powder
4. Remove the lid and extinguish the fire using a punch and spray enough water to extinguish the fire
5. Remove the ashes inside the kiln
6. Mix starch and cassava flour to make binder
7. Make porridge using the mixture of starch and cassava flour and then mix it with the ashes
8. Put the mixture in the charcoal making machine
9. Turn on the machine to start making alternative charcoal or you can make using hands
10. Dry your charcoal in the sun for two to three days, the charcoal will be ready for use



Photo 4: A local Klin for burning materials that are used to make alternative charcoal



Photo 5: Alternative Charcoal making machine

TIST HABARI MOTO MOTO

TIST Values

As TIST Family we have our Values which most of TIST Small Groups know and practice. We always reflect on these Values and to ensure that we all are truly living by them. The success of TIST is based on the integrity and effort of individual members within TIST. What we can achieve depends on each of us following these Values;

Who are we?

- (i) We are Honest
- (ii) We are Accurate
- (iii) We are Transparent
- (iv) We are Servants to each other
- (v) We are Mutually Accountable to Each Other and
- (vi) We create Low Budget/ cost, yet we achieve Big Results

How we do things that other people can see

- 1) We are committed
- 2) We do our work in small groups
- 3) We seek and use the best way
- 4) We use our minds and hands

What do we do?

- 1) We plant different species of trees for long - term
- 2) We find ways to improve our health

3) We practice Conservation Farming

4) We do other projects and businesses (sustainable agriculture, nurseries, citrus growing, dairy goats and farming, chickens, bee keeping, fishponds and fish keeping, silkworm farming etc.)

5) We sell carbon credits

What do we create?

1) We create team work - by doing things this way; we end up working as a team.

2) We create capacity - we create organization, strength, and a system that is strong.

3) We create enjoyment - we see results, we accomplish big things that we enjoy.

4) We create Big Results - In Conservation Farming and from other projects and business that we do.

5) We create Low Budget/Cost, yet we achieve big results.



TIST HABARI MOTOMOTO APRIL 2026

www.tist.org. Email: info@tist.org Tel. +255784-537720



Picha 1: Shamba la miti la Sylvester

Katika jarida hili, tutakuwa na makala mbili:

- I. Kuweka Matandazo Katika Shamba lako**
- II. Somo kuhusu Mkaa Mbadala kutoka kwa Mkulima wa TIST Sylvester Mtondo**

(1) Kuweka Matandazo Katika Shamba lako

Kuweka matandazo ni Mbinu Bora ya kufunika shimo lenye mazao kwa kutumia majani ili kusaidia kuhifadhi unyevu, kuzuia magugu, kurutubisha udongo na kudhibiti mmomonyoko wa udongo. Unaweza kutumia matandazo ya majani makavu au matandazo ya majani mabichi. Matandazo ya majani makavu ni pamoja na nyasi kavu, majani yaliyoanguka kutoka kwenye miti, vumbi la mbao na nyenzo nyingine kavu. Matandazo ya majani mabichi ni pamoja na majani ya magugu yaliyokatwa, majani ya migomba, majani ya mpunga, mabaki ya mboga, na nyasi mbichi

Hatua za Kufanya unapotaka kuweka Matandazo kwenye Miti:

1. Kuandaa Eneo: Safisha magugu na viumbe hai vingine kuzunguka shina la mti kwa mduara wa angalau sm 30-50 kutoka kwenye shina.

2. Kumwagilia: Mwagilia ili kuhakikisha udongo una unyevu wa kutosha kabla ya kuweka matandazo ili kuhifadhi unyevu huo.

3. Kuchagua Vifaa: Tumia vifaa vya asili kama majani makavu, nyasi, maganda ya miti, au masalia ya mazao.

4. Kueneza Matandazo: Tandaza matandazo hayo kuzunguka mti kwa unene wa sentimita 5 hadi 10.

5. Kuepuka Shina: Muhimu sana: Usiweke matandazo yakagusa shina moja kwa moja; acha nafasi ya cm 5-10 kati ya shina na matandazo kuzuia kuoza kwa gome la mti na kuvamiwa na wadudu.

Faida za Kutumia Matandazo ya Majani Makavu

1. Hupunguza ukuaji wa magugu kwa kuzuia mwanga kufika kwenye udongo.

2. Hupunguza upotevu wa maji kutoka kwenye udongo, ambayo husaidia kutunza unyevunyevu wa udongo.

3. Hupunguza halijoto ya udongo, huhifadhi joto zaidi wakati wa baridi na huhifadhi baridi wakati wa joto.

4. Husaidia kulinda udongo hivyo hupunguza mmomonyoko na mgandamizo wa udongo.

5. Matandazo yanasaidia kulinda mimea kutokana na hali mbaya ya baridi na upepo.

6. Husaidia kulinda viumbe hai vya kwenye udongo na kurutubisha udongo.

7. Husaidia kufanya muundo wa udongo kuwa wenye afya kwa mimea, na kuzuia mgandamizo.

8. Huzuia udongo kumwagika kwenye majani hivyo kupunguza uwezekano wa mimea kupata magonjwa ya fangasi na bakteria.

9. Hufanya bustani/shamba kuwa na muonekano wa kuvutia hivyo kutoa mwonekano wa kufanana kwenye shamba au bustani

10. Huweka mimea katika hali ya usafi kwa nje ya udongo, hasa nyanya na matikiti, ili kuepuka magonjwa ya mimea.

11. Matandazo husaidia kuongeza rutuba kwenye udongo na kufanya udongo kuwa wenye lishe zaidi.

12. Hufanya maji yasogee kwa urahisi kwenye udongo uliofunikwa na matandazo badala ya kutiririka.

13. Huboresha afya na ukuaji wa mmea (kutokana na magugu machache na unyevu thabiti na joto la udongo).

14. Hunyambua na kulisha udongo (ikiwa ni matandazo ya majani yanayooza).

15. Utandazaji huboresha muundo wa udongo wa mfinyanzi na uwezo wa kushikilia unyevu wa udongo wa kichanga



Picha 2: Mfano wa mmea uliowekewa matandazo



Picha 3: Mfano wa mti uliowekewa matandazo

(II) Somo kuhusu Mkaa Mbadala kutoka kwa Mkulima wa TIST Sylvester Mtondo

Mkaa mbadala ni nishati ya kupikia inayotengenezwa kwa mabaki ya kilimo kama mabua ya mahindi na mtama, mabaki ya mpunga, nyasi kavu au takataka kavu na karatasi zilizolowekwa badala ya kukata miti. Ni rafiki wa mazingira, hudumu muda mrefu zaidi, na hupunguza gharama za nishati ikilinganishwa na mkaa wa kawaida wa kuni.

Mkaa huu ni rafiki wa mazingira kutokana na kutumia taka, lakini pia teknolojia hiyo ikiendelezwa zaidi itakuwa mbadala wa mkaa wa kawaida ambao hutokana na kukata kwa miti hali inayotishia ustawi wa misitu na mazingira kwa ujumla.

Faida za Mkaa Mbadala:

- **Ulinzi wa Mazingira:** Hutengenezwa bila kuharibu misitu, hivyo kusaidia kupambana na mabadiliko ya tabianchi.
- **Malighafi:** Hutumia malighafi ambazo hupatikana kwa urahisi mfano mabua ya mahindi na mabua ya mtama, mabaki ya mpunga, nyasi kavu au takataka kavu na karatasi zilizolowekwa bada
- **Ufanisi:** Huwaka kwa muda mrefu na kutoa joto jingi, huku ukitoa moshi mchache kuliko mkaa wa kawaida
- **Ubunifu:** Ni suluhisho la kiuchumi linalotumia teknolojia ya kutengeneza *briquettes*.
- Ni rahisi kutengeneza
- **Hupunguza ukataji miti:** Hupunguza mahitaji ya miti migumu.
- **Udhibiti wa Taka:** Hubadilisha taka za kikaboni na vumbi la mbao kuwa mafuta.

Vifaa vinavyotumika kutengeneza mkaa

1. Mtambo (una sehemu kuu tatu)

- Tanuru ambalo ni pipe
- Mfuniko
- Dohani na pancha
- Mashine ya kufyatulia mkaa (mould)

2. Malighafi (takataka, mabaki ya mazao, nk)

3. Gundi: Unga wa muhogo, sembe au udongo

4. Maji

Hatua za kutengeneza

1. Chambua malighafi na weka kwenye tanuru, (hakikisha tanuru liko kwenye mafiga matatu)

2. Washa moto pande mbili za mtambo na funika mfuniko wenye dohani

3. Choma malighafi katika mazingira yenye oksijeni kidogo, yenye joto la juu ili kuzigeuza kuwa unga wa kaboni

4. Ondoa mfuniko wenye dohani kisha zima moto kwa kutumia pancha na nyunyizia maji ya kutosha ili kuzima moto

5. Ondoa majivu ndani ya mtambo

6. Kusanya unga wa sembe na unga wa mhogo ili kutengeneza gundi

7. Koroga uji wa sembe au uji wa mhogo kisha changanya na majivu

8.Weka mchanganyiko huo kwenye mashine ya kutengenezea mkaa

9.Washa mashine ili kutengenezea mkaa

10.Kausha mkaa wako kwenye jua kwa siku mbili mpaka 3, mkaa utakuwa tayari kwa matumizi



Picha 4: Mashine ya kutengenezea mkaa mbadala



Picha 5: Mtambo wa kienyeji kwa unaotumika kuchoma malighafi za kutengenezea mkaa mbadala

TIST HABARI MOTO MOTO

MAADILI YA TIST

Kama Familia ya TIST tuna Maadili yetu ambayo wengi wa Wanavikundi Vidogo vya TIST wanayajua na kuyatekeleza. Daima tunatafakari juu ya Maadili haya na kuhakikisha kwamba sote tunaishi kulingana nayo. Mafanikio ya TIST yanatokana na uadilifu na juhudi za wanachama binafsi ndani ya TIST. Tunachoweza kufikia inategemea kila mmoja wetu kufuata Maadili haya;

Sisi ni Nani?

- 1) Sisi ni waaminifu.
- 2) Sisi tunatoa taarifa sahihi.
- 3) Sisi ni wawazi
- 4) Sisi tunatumikiana.
- 5) Sisi ni wawajibikaji
- 6) Bajeti Ndogo, Matokeo Makubwa

Jinsi tunavyofanya mambo ambayo watu wengine wanaweza kuona

- 1) Sisi tunajitolea.
- 2) Tunafanya kazi zetu katika vikundi vidogovidogo
- 3) Tunatafuta na kutumia njia bora
- 4) Tunatumia akili na mikono yetu.

Tunachofanya

- 1) Tunapanda aina mbalimbali za miti itakayodumu kwa muda mrefu.
- 2) Tunafanya mambo kuboresha afya zetu.
- 3) Tunafanya Kilimo Hai.
- 4) Tunafanya miradi na biashara zingine.
- 5) Tunafanya biashara ya hewa ya kaboni.

Tunafanya.

- 1) Tunaunda kazi ya timu—kwa kufanya mambo kwa njia hii; tunaishia kufanya kazi kama timu.
- 2) Tunajenga Uwezo-tunaunda shirika, nguvu, na mfumo ambao ni imara.
- 3) Tunafanya mambo yanayotufurahisha-tunaona matokeo, tunatimiza mambo makubwa ambayo tunafurahia
- 4) Tunafanya mambo yanayoleta matokeo makubwa-matokeo makubwa ya upandaji miti. matokeo makubwa katika Kilimo Hai na matokeo makubwa kutokana na miradi na biashara zingine tunazofanya.