

Takulandirani ku netiweki
yaikulu ya alimi a **biogas!**



Pezani phindu lochuluka kuchokera ku
biodigester yanu!

**BUKU LA
MALANGIZO
OGWIRITSA
NTCHITO**



SISTEMA.bio[®]
CREATING VALUE FROM WASTE

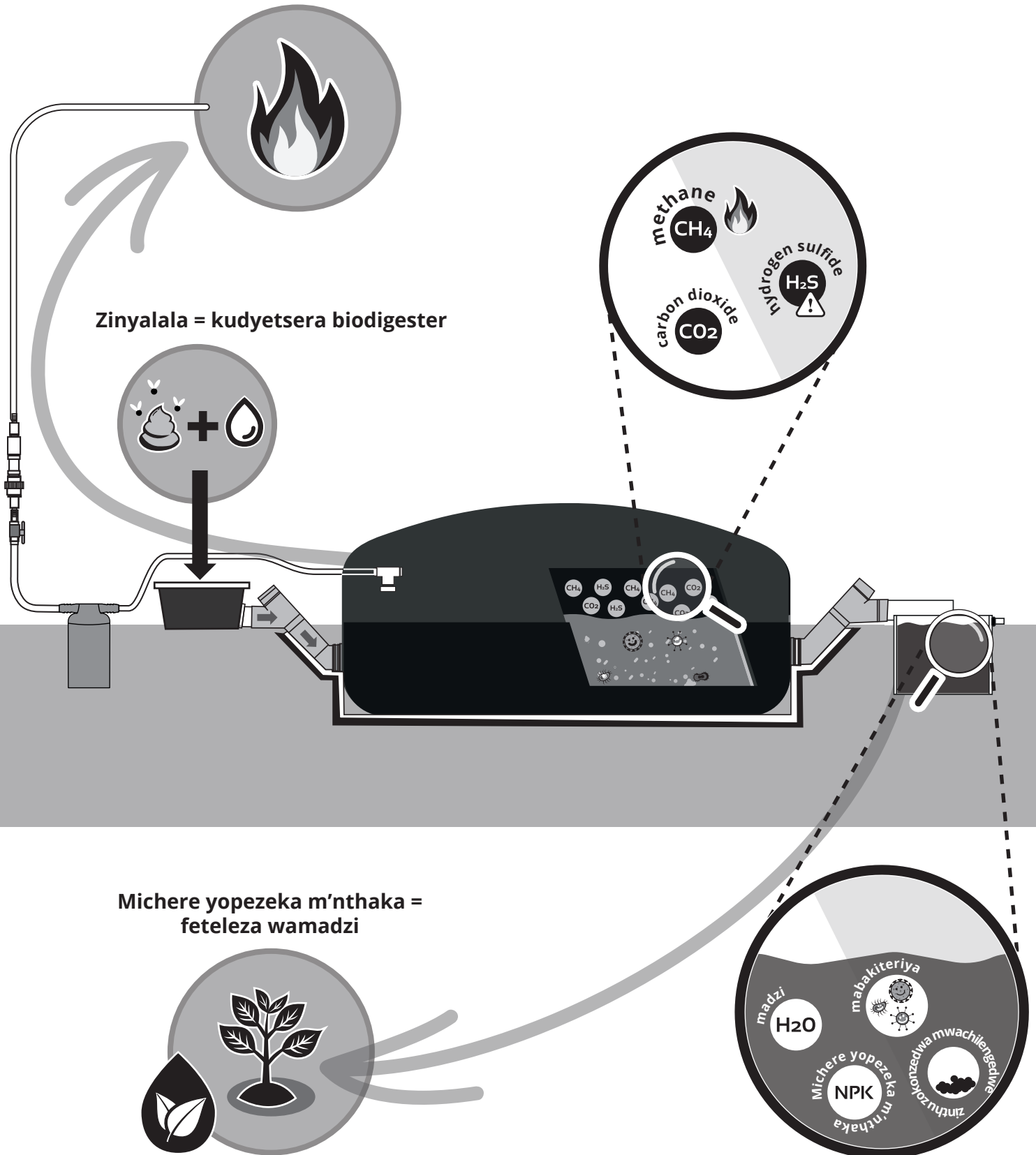


Kuyivetsetsa bwino biodigester yanu

Mphamvu = Biogas

Zinyalala = kudyetsera biodigester

Michere yopezeka m'nthaka = feteleza wamadzi



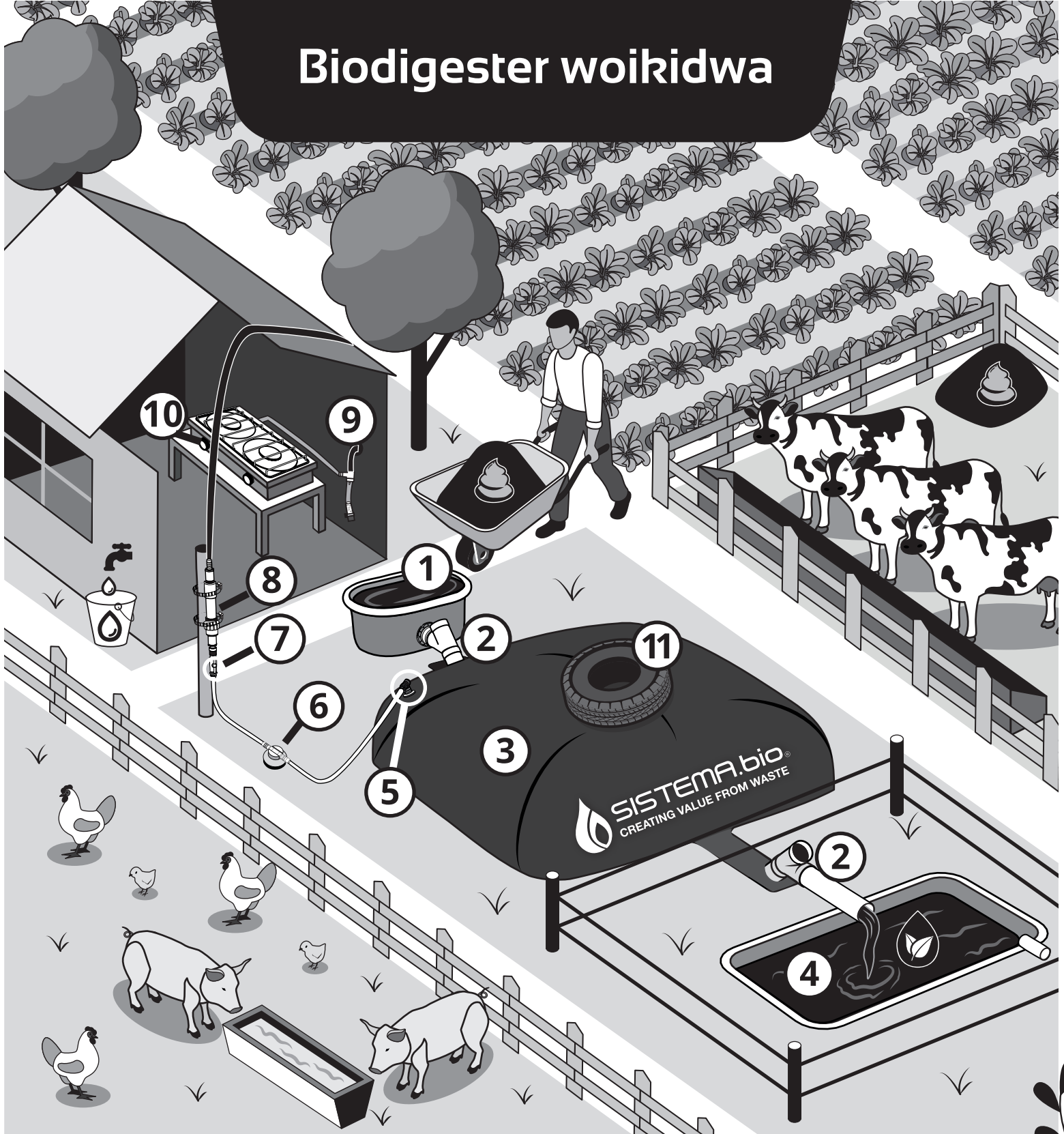
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Mawu opita kwa matekinishani ndi ochititsa maphunziro:

- Pa tsiku lakulumikiza, phunzitsani wogwiritsa ntchito zam’kati zopezeka pa tsamba 3 kufika pa 13.
- Pa tsiku lakutsegulira, phunzitsani wogwiritsa ntchito zam’kati za buku lonse.

Biodigester woikidwa



Dziwani zinthu zanu zofunikira poika biodigester

- | | | |
|---|----------------------------|-----------------------|
| 1. Thanki yodyetsera | 5. Kotulukira biogas | 9. Msapha wamadzi |
| 2. Paipi yolowetsa ndi kutulutsa zinthu | 6. Popumira mpweya | 10. BioSitovu |
| 3. Thanki | 7. Chotchinga cholekanitsa | 11. Chinthu cholemera |
| 4. Thanki yafeteleza wamadzi | 8. Filuta ya biogas | |

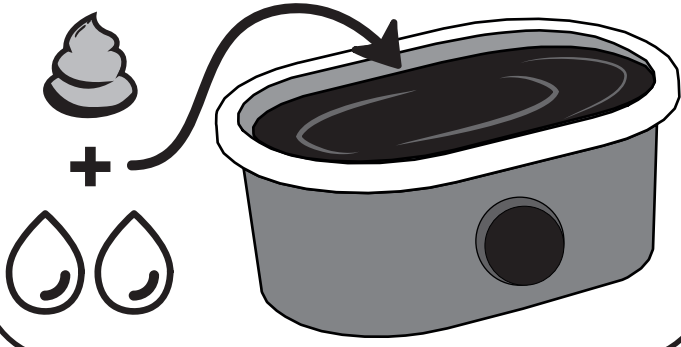
Dziwani izi: Zinthu zikhoza kusiyana malinga ndi kuchigawo komanso kumalo komwe chitukuko ichi chikuchitikira.



Magawo a Biodigester ogwira ntchito

1

Thanki yodyetserera: Thanki yolimba kwambiri, yosakanizira ndowe ndi madzi Imathandizanso kupeza ndi kuchotsa zinthu zosayenera.



4

Thanki yafeteleza wamadzi: Imakulolani kusungiramo feteleza wanu wamadzi musanayambe kumugwiritsa ntchito!



DZIWANI IZI: Zinthu zonsezi zimafunika kumagwirabe ntchito komanso kuzikonza mwapafupipafupi monga zafotokozeredwa mu buku!

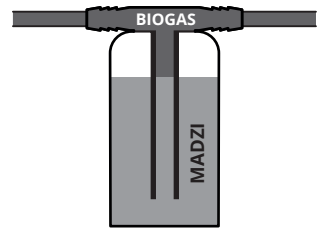
Zinthu zikhoza kusiyana malinga ndi kuchigawo komanso kumalo komwe chitukuko ichi chikuchitikira.

6

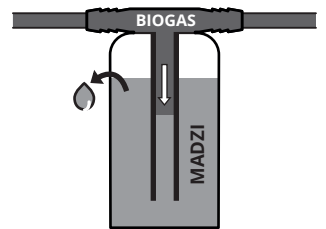
Popumira mpweya (PVR): Imathandiza kuti mpweya uzikhala wochulukira pa mlingo woyenera mu biodigester pogwiritsa ntchito madzi kuti azichepetsa mpweya.



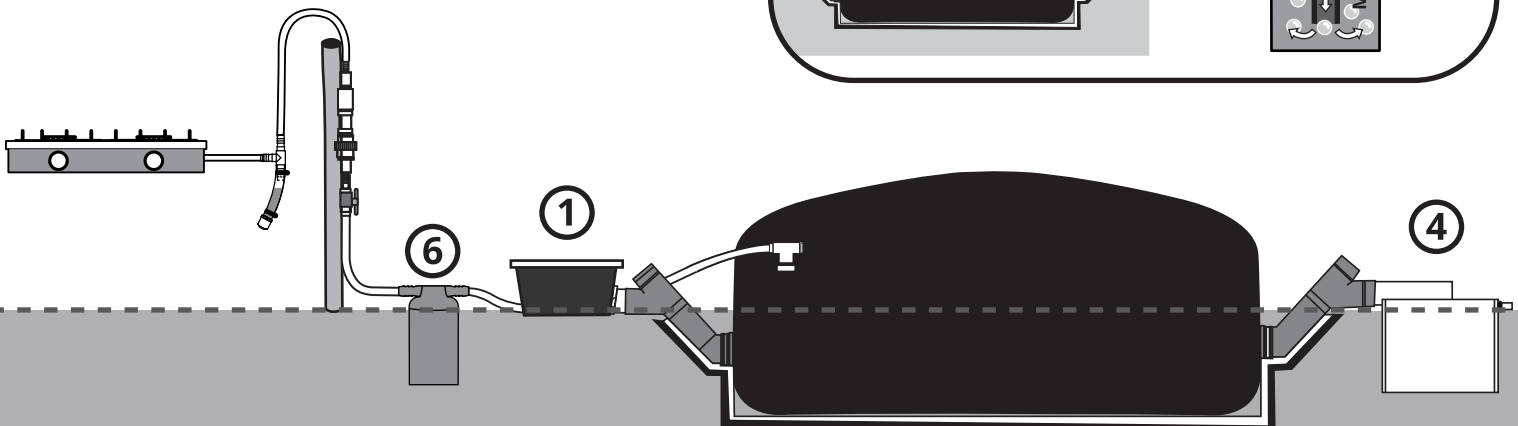
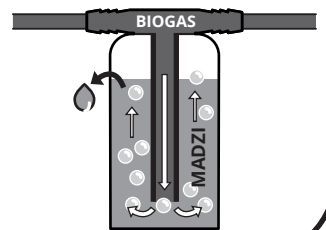
a. MPWEYA WOCHEPA



b. MPWEYA WOWONJEZERA

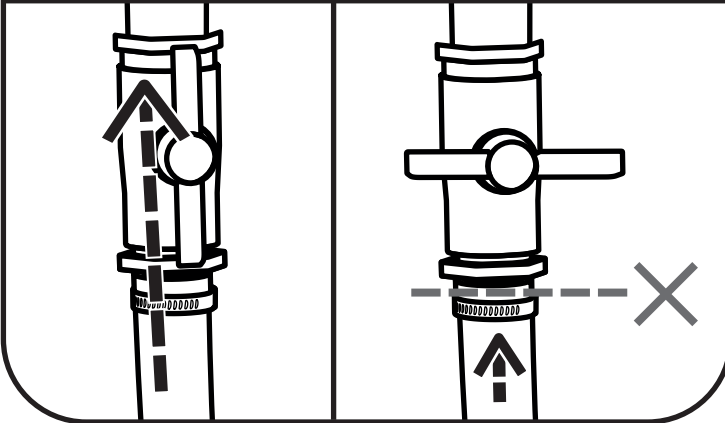


c. MPWEYA WAMBIRI

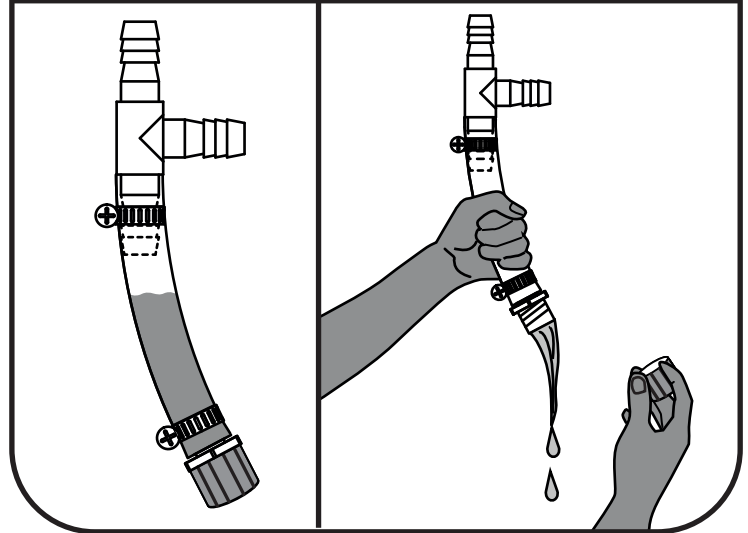




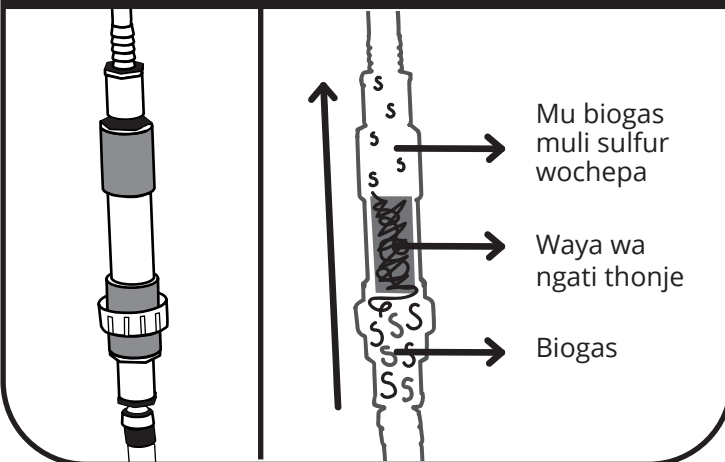
7 Chotchinga cholekanitsa: Chimakulolani kutseka ndi kuimitsa kayendedwe ka biogas.



9 Msampha wa madzi: Pamene kwazizira, madzi mu biogas amakhala pamodzi ndipo amatengedwa mu msampha wa madzi.



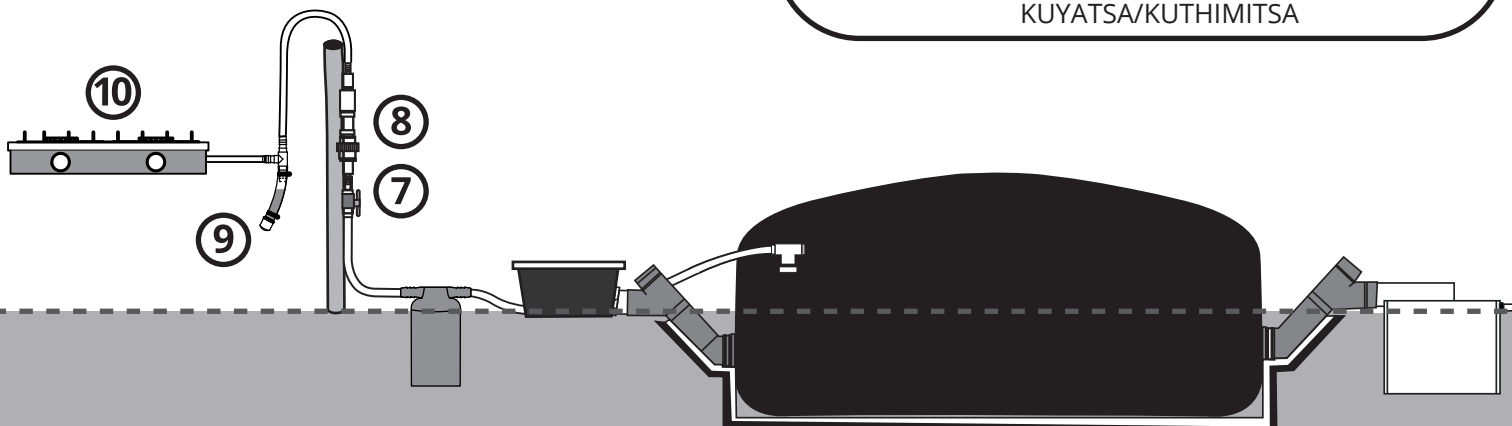
8 Filuta ya biogas: Rlmachepetsa kununkha kwa sulphur wokhala mu biogas. Zimalikitsa umoyo wa zipangizo zonse zitsulo zogwira ntchito mu biogas.



10 BioStove: Chipangizochi chimaikidwa mu bokosi pamodzi ndi zipangizo zina zonse.



DZIWANI IZI: Zinthu zonsezi zimafunika kumagwirabe ntchito komanso kuzikonza mwapafupipafupi monga zafotokozeredwa mu buku!
Zinthu zikhoza kusiyana malinga ndi kuchigawo komanso kumalo komwe chitukuko ichi chikuchitikira.





Kupewa ngozi

Biodigester



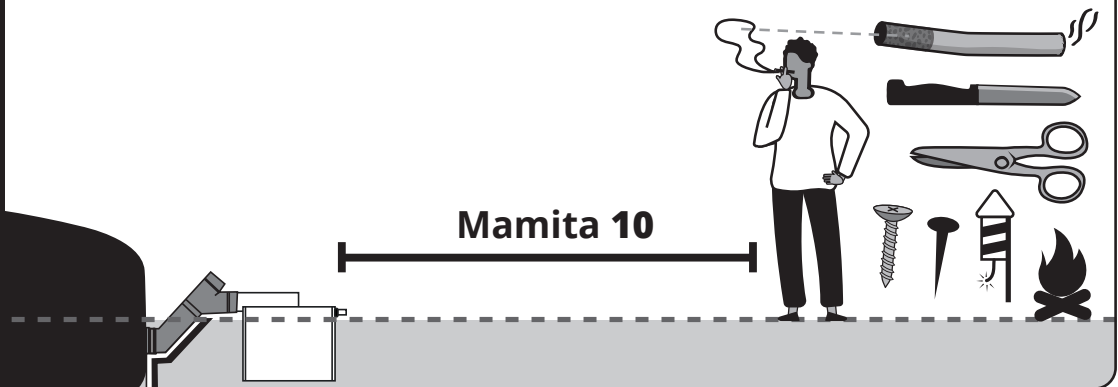
MUSALOLE
ana kukhala okha
pafupi ndi digester,
OSALUMPHIRA
kapena
KUTHAMANGA
pa digester.



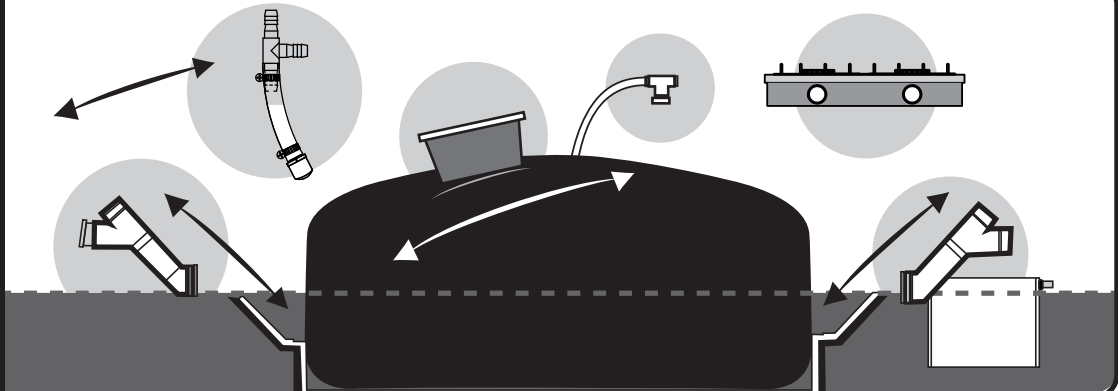
MUSAKOKE,
kunyamula kapena
kukweza mlingo
wa mapaipe olowa
kapena kutuluka
mu digester.



MUSASUTE
fodya, kugwiritsa
ntchito zinthu
zakuthwa kapena
kuyatsa moto
pafupi ndi malo a
biodigester.



MUSASINTHE
malo a zinthu za mu
biogas.



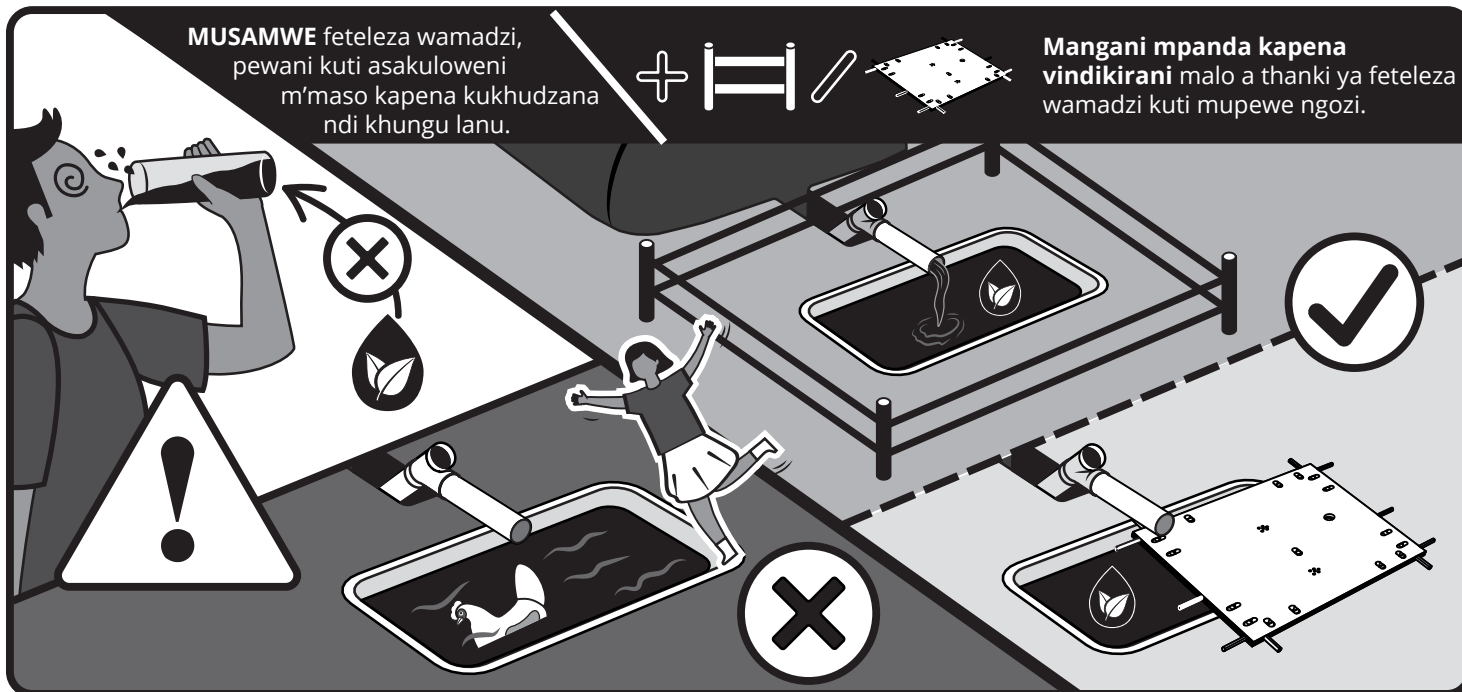


Feteleza wamadzi

MUSAMWE feteleza wamadzi, pewani kuti asakuloweni m'maso kapena kukhudzana ndi khungu lanu.

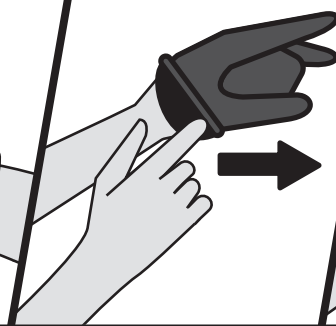


Mangani mpanda kapena vindikirani malo a thanki ya feteleza wamadzi kuti mupewe ngozi.



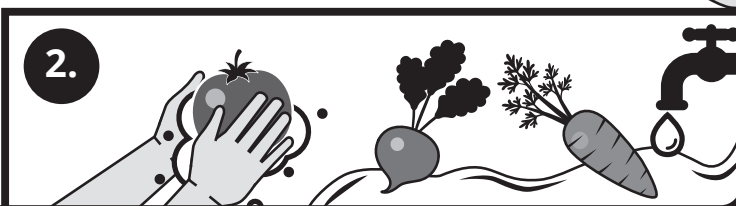
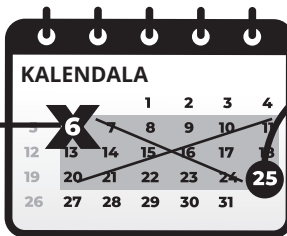
1. Gwiritsani ntchito magolovesi pogwira manyowa ndi feteleza wamadzi.

2. Sambani m'manja mutatha kuzigwira.



1. SIYANI kuthira feteleza wamadzi kukatsala masabata atatu kuti mukolole.

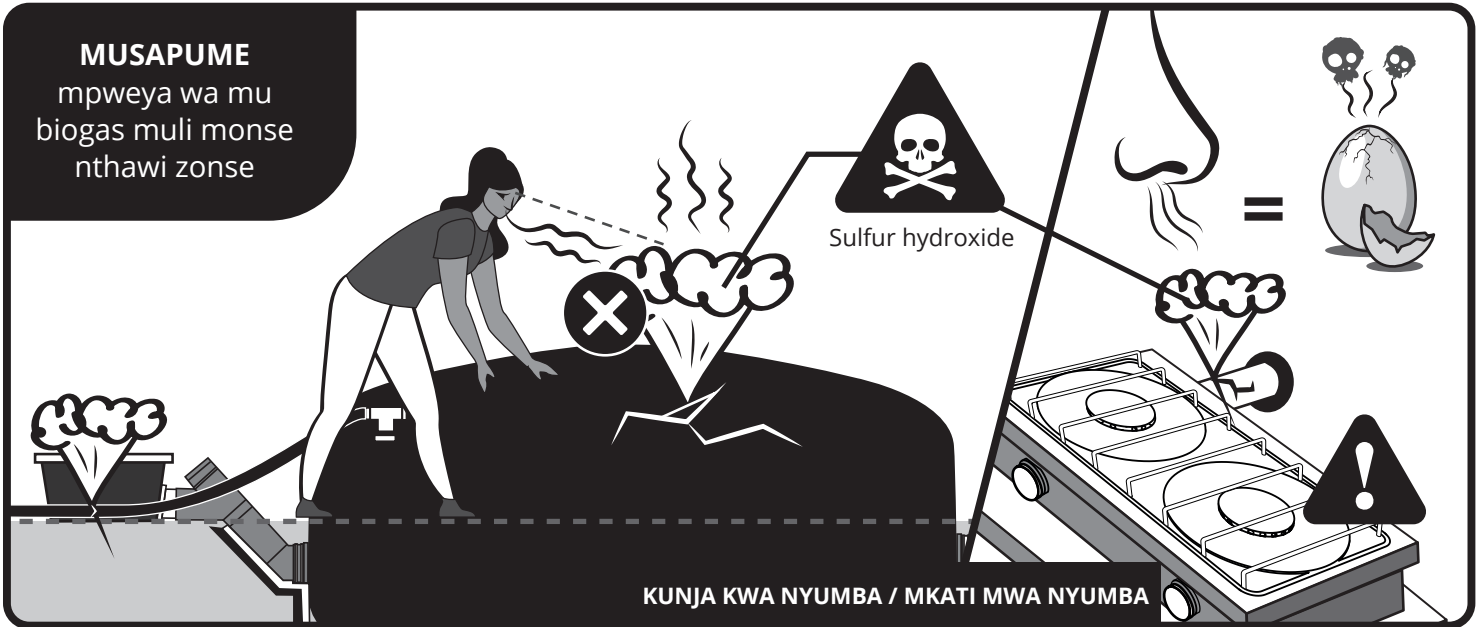
2. TSUKANI zipatso ndi ndiwo zamasamba musanadye.





MUSAPUME

mpweya wa mu biogas muli monse nthawi zonse



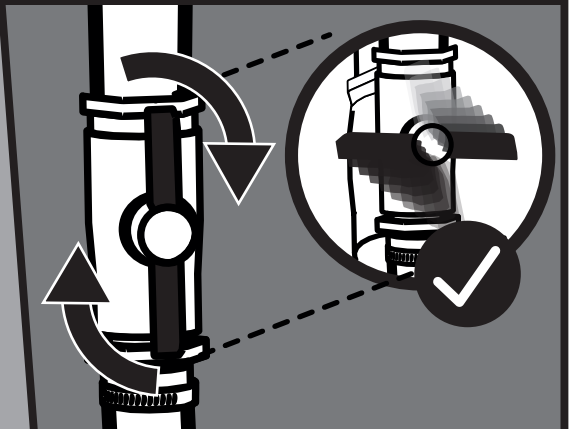
1. Kudontha kwa biogas kumanunkha mofanana ndi **MAZIRA OWOLA**.



2. Mukangopeza pomwe gasi akutaika m'nyumba, **TULUKANIMO** chifukwa pali **chiopsezo choti moto ukhoza kubuka**.



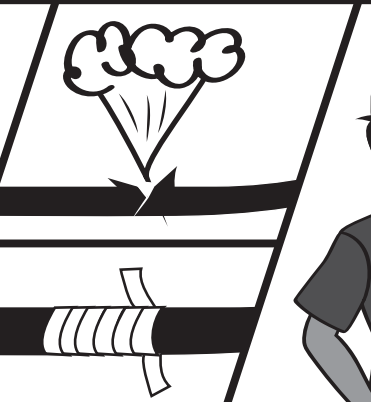
3. **TSEKANI** chotchinga **cholekanitsa** kuti **MUIMITSE** kayendedwe ka biogas.



4. **LOLANI KUTI MPWEYA** ulowe m'nyumba kuti gasi uchotsedwe.



5. **PEZANI** ndi **KUKONZA** malo omwe gasi akutaika.

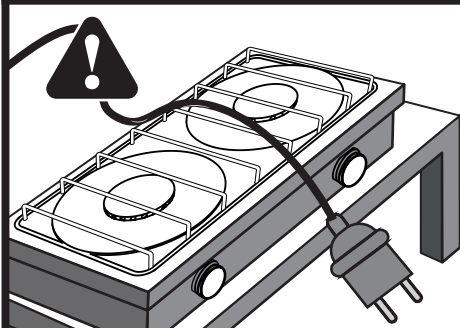


6. **ITANITSANI** thandizo.





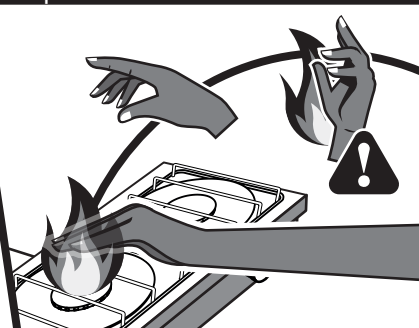
MUSALOLE kuti mawaya ena alionse kapena molumikizana zidutse pamwamba pa sitovu. Ikani BioStove pamalo abwino komanso okhazikika.



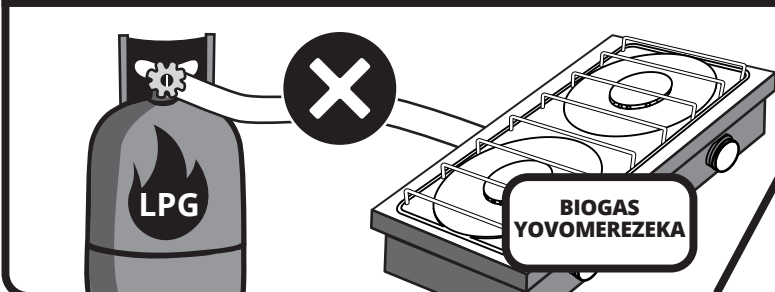
MUSAIKE makatani kapena zinthu zina zilizonse zogwira moto pafupi ndi moto.



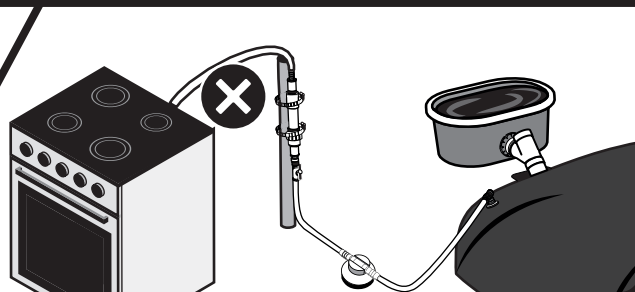
SAMALANI pomwe mukugwiritsa ntchito BioStove. Pali chiopsezo choti munthu akhoza kupsa ndi moto.



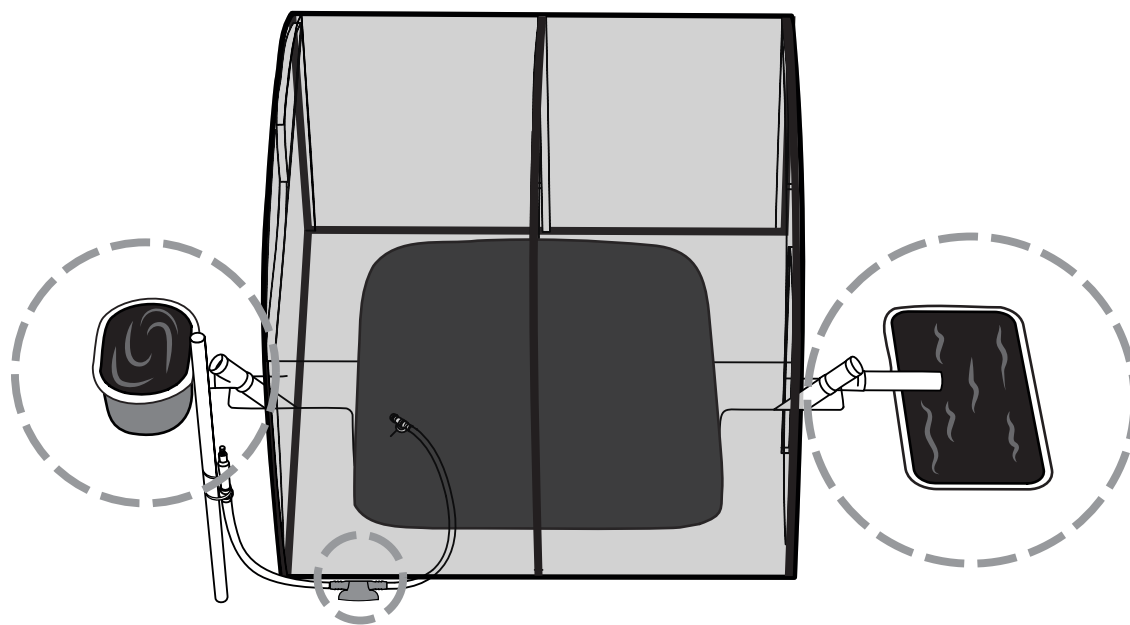
MUSALUMIKIZE BioStove ku gasi wina kupatulako ku biodigester.



MUSALUMIKIZE paipi ya biogas ku sitovu ya gasi wachilengedwe.



NGATI BIODIGESTER YAIKIDWA MU GREENHOUSE, **popumira mpweya ndi thanki yafeteleza wamadzi** ziyenera kuikidwa **kunja** kwa greenhouse. Musanalowe mu greenhouse, onsetsani kuti muli mpweya wambiri.





Kulumikiza biodigester



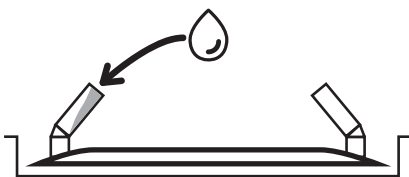
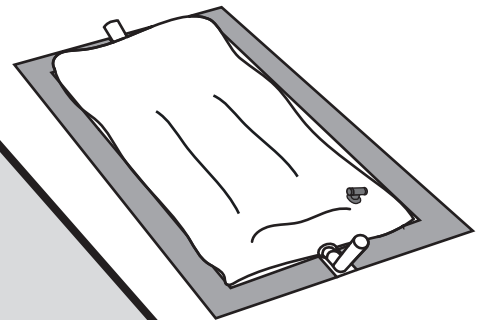
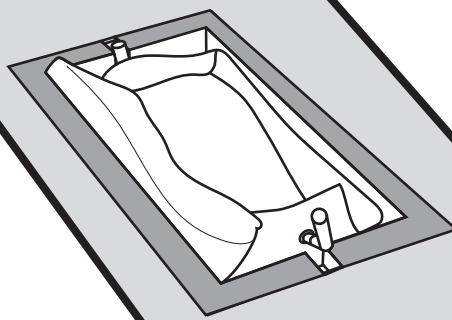
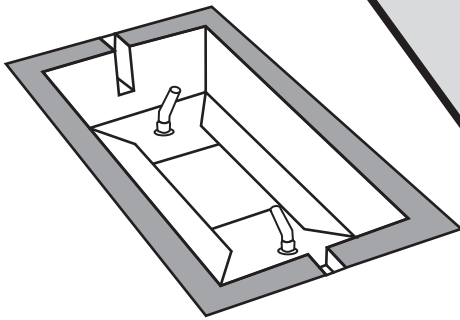
Gwiritsani ntchito **QR KHODI** kuti muwonere makanema a momwe mungalumikizire digester yanu kuti iyambe kugwira ntchito.



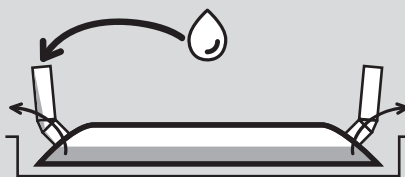
SITEPE 1 Thirani madzi mu thanki kufikira atafika polowera ndi potulukira.



15



Kuikamo = 0%



Kuikamo = KUKUCHITIKA



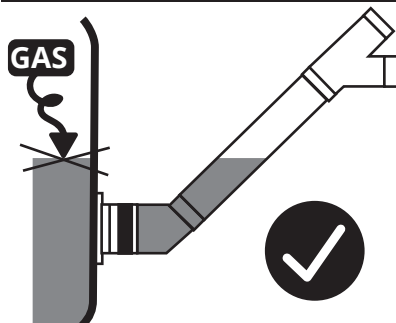
Kuikamo = 100%



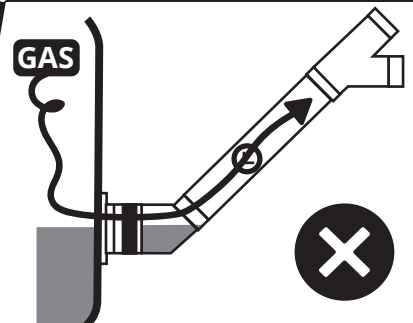
Muyeso wa madzi ofunikira kuika mu biodigester.

	m3	malita
Sistema 6	3	3,000
Sistema 8	4	4,000
Sistema 12	6	6,000
Sistema 16	8	8,000
Sistema 20	10	10,000
Sistema 30	15	15,000
Sistema 40	20	20,000

Silu yabwino ya hydrolic: gasi ali mkati mwa thanki.



Palibe hydrolic silu: gasi akhoza kumatuluka.





SITEPE 2
Zadzani PRV ndi madzi.

SITEPE 3 Tsekani paipi ya gasi.
(OM3), (OM3bis), (OM4)

SITEPE 4 Kudyetsera koyamba.

Zimayenera kugwiritsa ntchito **manyowa a ng'ombe** pa **kudyetsera koyamba**.

Kusunga mulu wa manyowa wovindikiridwa ndi lona kwa masiku 10/15 musanadyetsere koyamba zidzathandiza kuti manyowa ayambe kuphikana mwachangu muthanki

Wonjezani **feteleza wamadzi** (wodziwikanso kuti **digestate kapena bio slurry**) wochokera mu thanki kuti muchepetse nthawi yoyambitsira.

SITEPE 4

	Manyowa a ng'ombe Kudyetsera koyamba - L kapena Kg			Manyowa a ng'ombe Kudyetsera koyamba - mabigili a 20L		
	Kutenthera >23 °C	Muyeso wa kutenthera 15 kufikira 23 °C	Muyeso wa kuzizira kwa 12 kufika 15 °C	Kutenthera >23 °C	Muyeso wa kutenthera 15 kufikira 23 °C	Muyeso wa kuzizira kwa 12 kufika 15 °C
Sistema 6	450	350	250	23	18	13
Sistema 8	650	500	350	33	25	18
Sistema 12	900	650	450	45	33	23
Sistema 16	1300	1000	650	65	50	33
Sistema 20	1800	1350	900	90	68	45
Sistema 30	2600	2000	1350	130	100	68
Sistema 40	3500	2650	1800	175	133	90

*DZIWANI IZI: Pa mtundu wina uliwonse wa zinyalala, tekinishani wanu adzalemba malangizo pa tsamba 32 (kumapeto kwa buku lamangizo)

NTHAWI ZONSE SUNGUNULANI 1 gawo limodzi la ndowe za ng'ombe ndi magawo awiri a madzi

Chitsanzo: **SISTEMA 6 Nyengo yotentha**

450L kapena kg kapena mabigili 23 + 900L kapena Kg kapena mabigili 46

Musanadyetsere, onani ndi kusefa manyowa

CHOTSANI

- Mchenga, miyala
- Udzu, masamba, nsaza, mitengo, zikuni
- Dothi
- Mapulasitiki, zitsulo, magalasi
- Zipatso za m'gulu la malalanje
- Mafuta ophikira, akhoza kubweretsa vuto pa kugwiridwe ntchito ka zipangizo

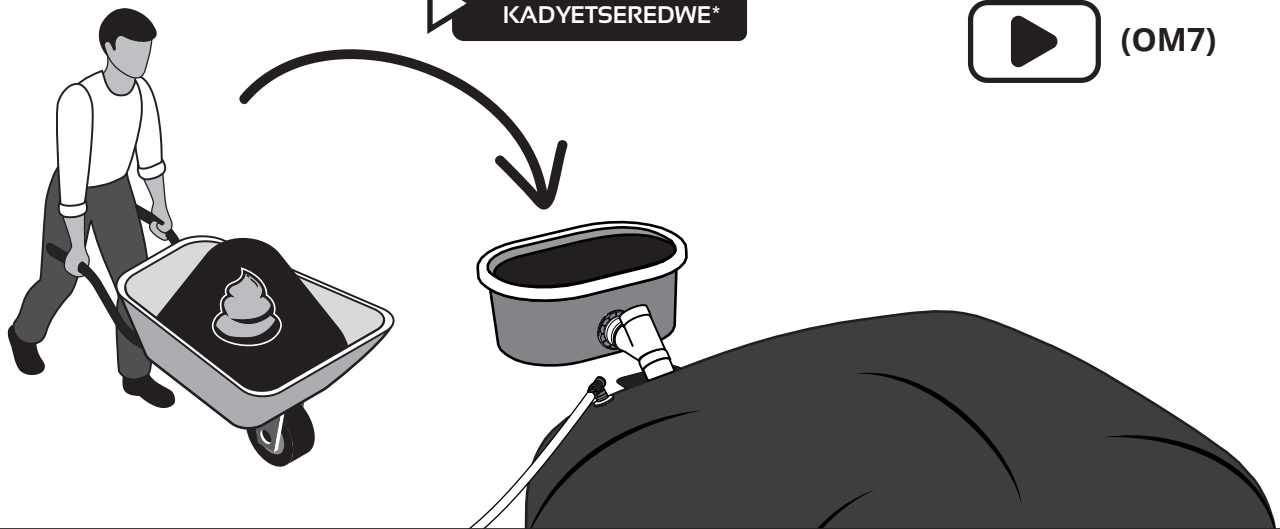


MADYETSEREDWE ndi manyowa a ziweto zoti **sipanadutse masiku 5** zitalandira mankhwala a antivairo kapena antibayotiki.



<Masiku osachepera 5 musanadyetsere

▶ **NDONDOMEKO ZA KADYETSEREDWE***



1. **Sungunulani** manyowa.

2. **Sakanizani** manyowa ndi madzi.

3. **Dikirani** kwa mphindi 5 kuti zikhazikike

4. **Chotsani** zoyandama zoyandama.

5. **Dyetserani** mu thanki.

6. **Muzichotsa** mwapafupipafupi zinthu zokhazikika monga miyala ndi mchenga.



1.



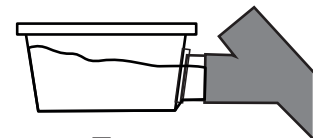
2.



3.



4.



5.



6.

*Zimenezi ziyenera kutsatidwa podyetsera koyamba komanso kwa masiku onse.



DIKIRANI KUTI
THANKI IFUFUME

NTHAWI YOFUFUMA:*



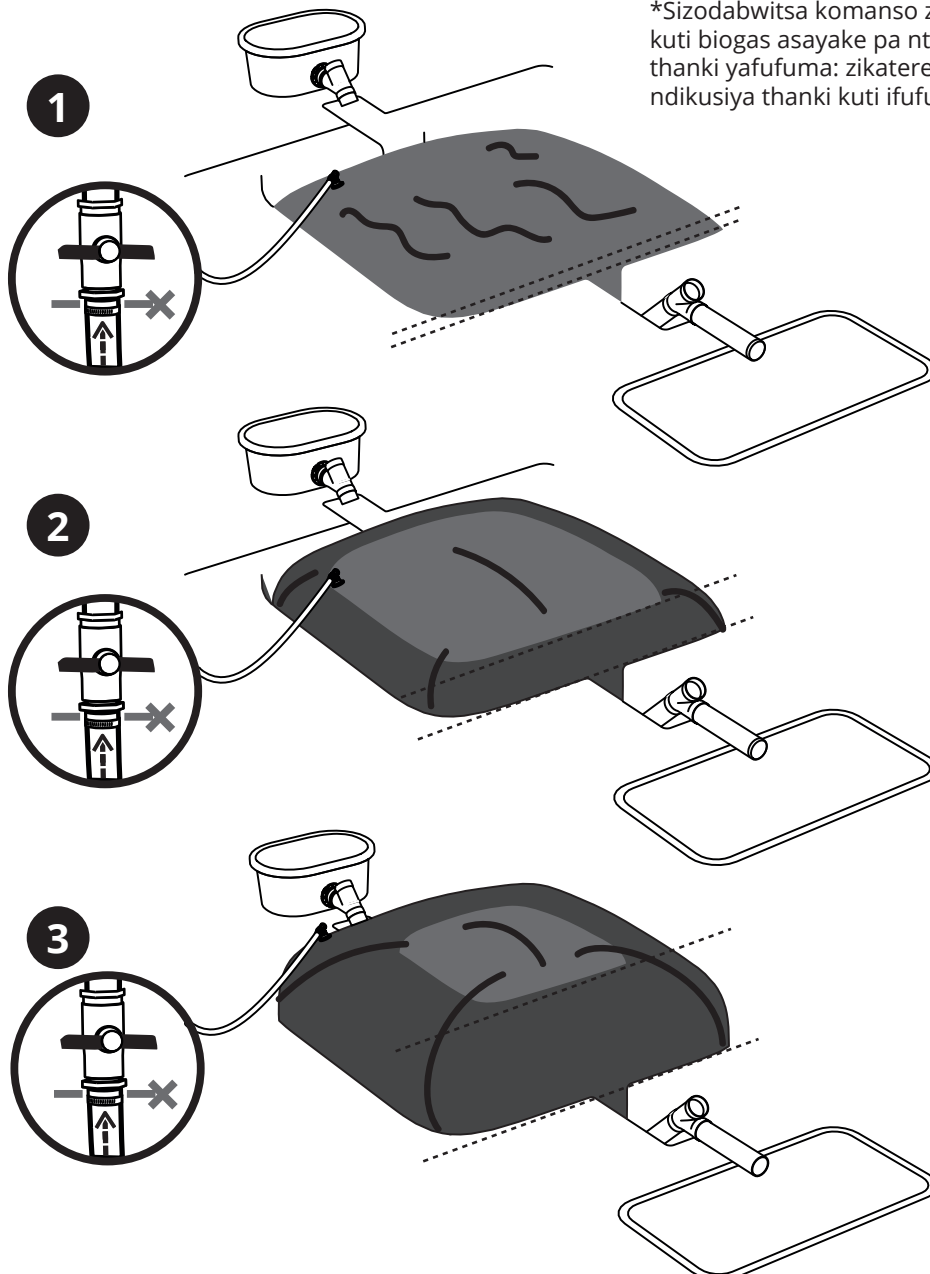
Kufikira ma sabata atatu mu nyengo yotentha



Ma sabata atatu kufika pa mwezi umodzi ndi hafu (1.5) mu nyengo yotentha mwa pakatikati



Mwezi umodzi ndi hafu kufika pa miyezi iwiri ndi hafu mu nyengo yozizira



*Sizodabwitsa komanso zimachitika kawirikawiri kuti biogas asayake pa nthawi yoyamba pamene thanki yafufuma: zikaterere chotsanimo gasi ndikusiya thanki kuti ifufumenso.

DZIWANI: Zochitika pa tsiku la maphunziro a kagwiritsidwe kake ntchito komanso kalumikizidwe zathera pamenepa.

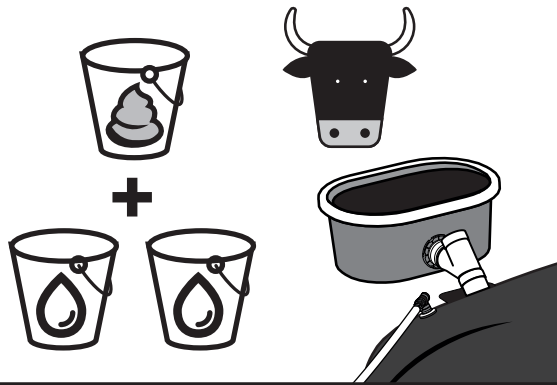


Mmene mungagwiritsire ntchito zipangizo zanu



Kusamalira digester yanu

KUDYETSERA. TSIKU LILILONSE muzidyetsera digester yanu ndi mlingo umodzi wa ndowe zang'ombe komanso milingo iwiri ya madzi.



Kudyetsera **tsiku lililonse***

*Onani ndondomeko ya kadyetseredwe pa tsamba 10



KALENDALA				
	1	2	3	4
5	6	7	8	9
10	11	12	13	14
15	16	17	18	19
20	21	22	23	24
25	26	27	28	29
30	31			

KUGUNYUZA

Gunyuzani kamodzi pa sabata

MUSAGUNYUZE



ngati YAPHWERA

KALENDALA						
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



ngati YAFUFUMA

1

Chotsani chinthu chilichonse chakuthwa ku nsapato poopetsa kuwononga thanki



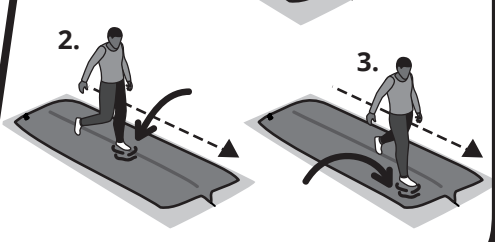
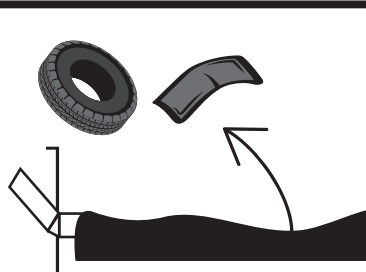
3

Gunyuzani poyenda mwapang'onopang'ono pamwamba pa biodigester ndi kumapondaponda.



2

Chotsani zinthu zolemera zoikidwa pamwamba pa thanki musanayambe kugunyuzza



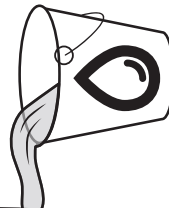


KUMATA LONA YOBOWOKA

1. CHAPANI
ndi sopo komanso bulashi



2. TSUKULUZANI
ndi madzi oyera



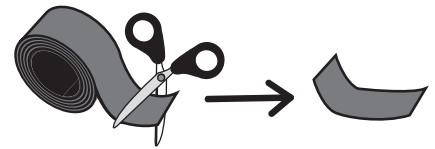
3. Ilekeni IWUME



4. MATANI
ndi chigamba chaching'ono cha tepi womatira wosalowa madzi



5. MATANI
ndi chigamba chachikulu pamwamba pa chigamba choyamba chija



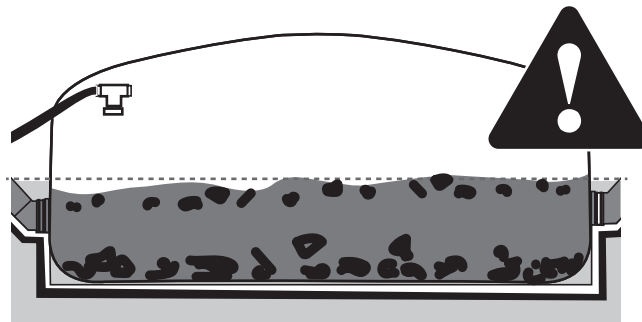
KUSAMALIRA KWA NTHAWI YAITALI

KALENDALA

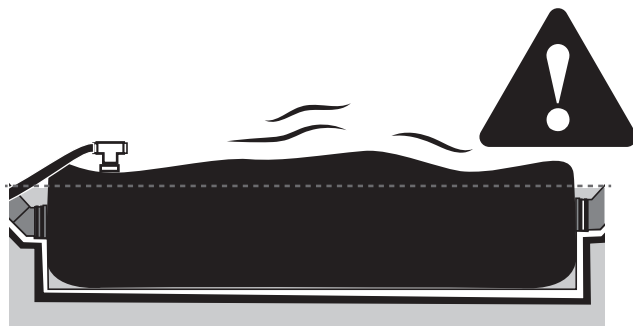
Pakapita ZAKA 5 kufikira **7** zilizonse kapena nthawi iliyonse imene kungafunikire kutero.

Pangafunike kuchotsa chilichonse muthanki ndi kuchuna zipangizo kuti ziyambirensa kugwira ntchito ngati:

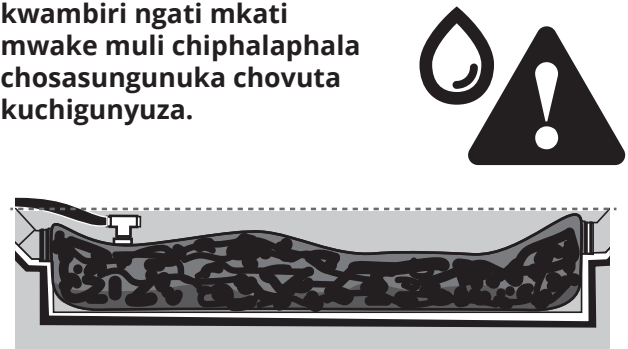
- Muli zinthu zolimba zokhalira mkati.



- Siinagunyuzidwe kwa nthawi yaitali.



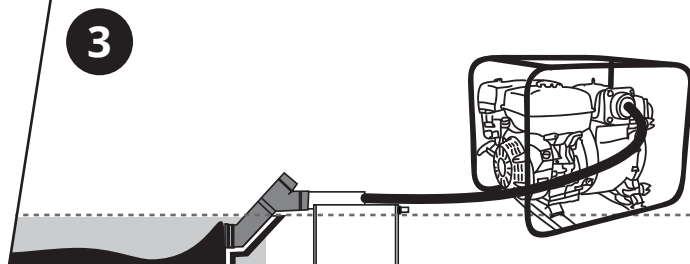
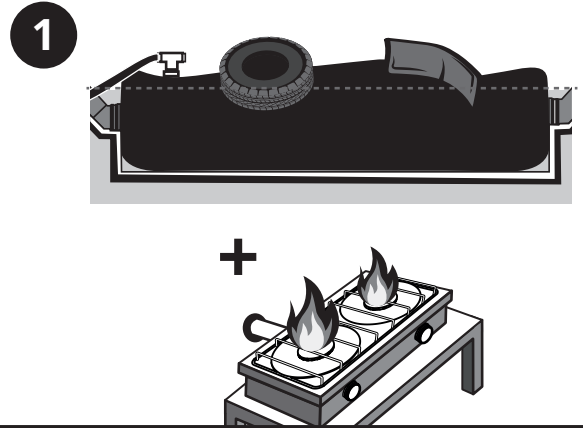
- Simunaikidwe madzi okwanira. Digester idzakhala yolembera kwambiri ngati mkati mwake muli chiphalaphala chosasungunuka chovuta kuchigunyuzwa.



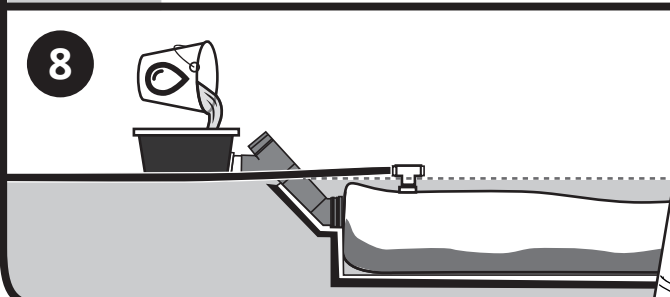
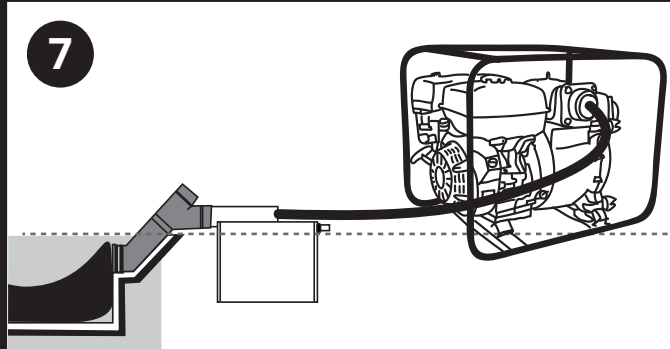
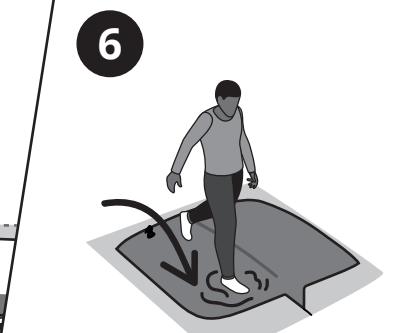
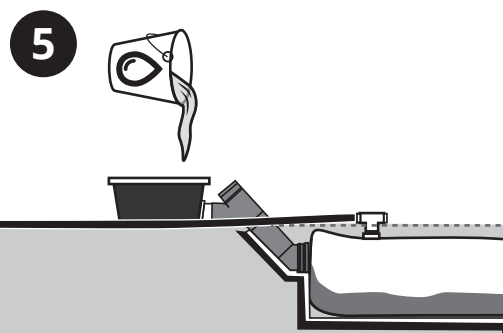


Ndondomeko yake

1. **Phwetsani** digester poika zinthu zolemera pamwamba pake. Kenako yatsani masitovu onse a BioStove kuti mugwiritse ntchito biogas yemwe watsala mu digester.
2. **Gunyuzani** digester mwamphamvu.
3. **Chotsani** chiphalaphala chonse mu digester pogwiritsa ntchito pampu ya mainchesi atatu mpaka digester yo itaphwera n'kufika theka la kuzama kwa dzenje limene yaikidwamo.
4. **Gunyuzani** mwamphamvu.



5. **Thiranimu** madzi mpaka idzadzze.
6. **Gunyuzani** mwamphamvu.
7. **Chotsani** chiphalaphala chonse mu digester kuti iphwere n'kufika theka la kuzama kwa dzenje limene yaikidwamo.
8. **Thiranimu** madzi mpaka idzadzze.
9. **Pitirizani** ndi kuyamba **kudyetsera koyamba!**





	Kukula kwa digester 	SIS 6	SIS 8	SIS 12	SIS 16	SIS 20	SIS 30	SIS 40
 Nyengo yotentha >23 °C	Kudyetsera tsiku ndi tsiku: manyowa a ng'ombe 	45 L kapena Kg pa tsiku	65 L kapena Kg pa tsiku	90 L kapena Kg pa tsiku	130 L kapena Kg pa tsiku	180 L kapena Kg pa tsiku	260 L kapena Kg pa tsiku	350 L kapena Kg pa tsiku
	Kuchuluka kwa biogasi wopangidwa pa tsiku 	2 m3 pa tsiku	2.4 m3 pa tsiku	3.3 m3 pa tsiku	4.8 m3 pa tsiku	6.7 m3 pa tsiku	9.6 m3 pa tsiku	12.9 m3 pa tsiku
	Nthawi yophikira pa malo amodzi asitovu tsiku lililonse 	Maola 3.4 pa tsiku	Maola 4.8 pa tsiku	Maola 6.6 pa tsiku	Maola 9.6 pa tsiku	Maola 13.4 pa tsiku	Maola 19.2 pa tsiku	Maola 25.8 pa tsiku
	Kuchuluka kwa feteleza wamadzi wopangidwa pa sabata 	0.9 m3 pa sabata	1.4 m3 pa sabata	1.9 m3 pa sabata	2.7 m3 pa sabata	3.8 m3 pa sabata	5.5 m3 pa sabata	7.4 m3 pa sabata
 Nyengo ya mwa pakatikati kuyambira 15 kulekezera 23 °C	Kudyetsera tsiku ndi tsiku: manyowa a ng'ombe 	35 L kapena Kg pa tsiku	50 L kapena Kg pa tsiku	65 L kapena Kg pa tsiku	100 L kapena Kg pa tsiku	135 L kapena Kg pa tsiku	200 L kapena Kg pa tsiku	265 L kapena Kg pa tsiku
	Kuchuluka kwa biogasi wopangidwa pa tsiku 	1.3 m3 pa tsiku	1.8 m3 pa tsiku	2.3 m3 pa tsiku	3.6 m3 pa tsiku	4.9 m3 pa tsiku	7.2 m3 pa tsiku	9.6 m3 pa tsiku
	Nthawi yophikira pa malo amodzi asitovu tsiku lililonse 	Maola 2.6 pa tsiku	Maola 3.6 pa tsiku	Maola 4.6 pa tsiku	Maola 7.2 pa tsiku	Maola 9.8 pa tsiku	Maola 14.4 pa tsiku	Maola 19.2 pa tsiku
	Kuchuluka kwa feteleza wamadzi wopangidwa pa sabata 	0.7 m3 pa sabata	1.1 m3 pa sabata	1.4 m3 pa sabata	2.1 m3 pa sabata	2.8 m3 pa sabata	4.2 m3 pa sabata	5.6 m3 pa sabata
 Nyengo Yozizira kuyambira 12 mpaka 15 °C	Kudyetsera tsiku ndi tsiku: manyowa a ng'ombe 	25 L kapena Kg pa tsiku	35 L kapena Kg pa tsiku	45 L kapena Kg pa tsiku	65 L kapena Kg pa tsiku	90 L kapena Kg pa tsiku	135 L kapena Kg pa tsiku	180 L kapena Kg pa tsiku
	Kuchuluka kwa biogasi wopangidwa pa tsiku 	0.8 m3 pa tsiku	1.2 m3 pa tsiku	1.5 m3 pa tsiku	2.2 m3 pa tsiku	3 m3 pa tsiku	4.5 m3 pa tsiku	6 m3 pa tsiku
	Nthawi yophikira pa malo amodzi asitovu tsiku lililonse 	Maola 1.6 pa tsiku	Maola 2.4 pa tsiku	Maola 3 pa tsiku	Maola 4.4 pa tsiku	Maola 6 pa tsiku	Maola 9 pa tsiku	Maola 12 pa tsiku
	Kuchuluka kwa feteleza wamadzi wopangidwa pa sabata 	0.5 m3 pa sabata	0.7 m3 pa sabata	0.9 m3 pa sabata	1.4 m3 pa sabata	1.9 m3 pa sabata	2.8 m3 pa sabata	3.8 m3 pa sabata



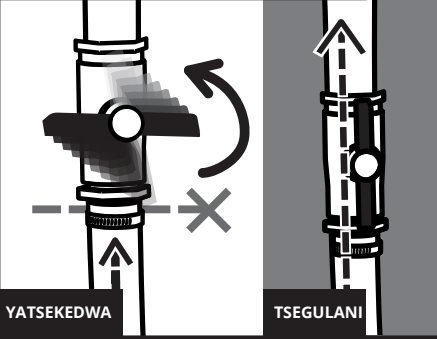
Kagwiritsidwe ntchito ka biogasi

Muzigwiritsa ntchito mphamvu ya gasi amene mwapanga ndipo samalani paipi yanu ya biogas nthawi zonse!



(OM9), (OM11), (OM12), (OM2), (OM3), (OM4)

MOTO WOYAMBA WA BIOGAS



1. TSEGULANI vavu

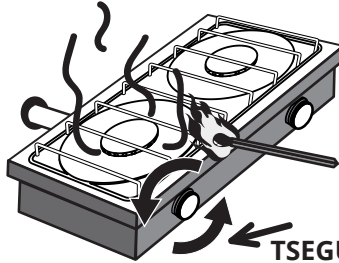
A



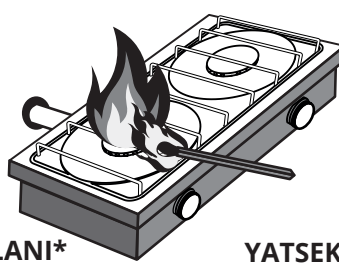
1 MPHINDI IMODZI**

B

C



TSEGULANI*



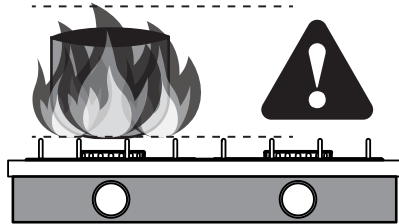
YATSEKEDWA

*Ngati ndikoyenera, kankhani ndi KUYATSA/KUTHIMITSA

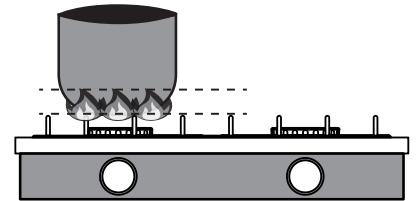
2. POTOKOLANI chogwirira kuti biogas atuluke (A) pomwe mukuyesa kumuyatsa ndi machesi. Pamene moto woyaka wa gasi ungafike pophikira, moto udzaoneka (B). **Nthawi zina zikhoza kutenga mphindi imodzi kuti moto uyake Kuti MUTSEKE, potokolerani kumanja (C).



MUSALOLE
kuti moto ukhale wambiri zedi.



ONETSETSANI
mwaika poto pakati penipeni pa moto wa sitovu.



IKANI ZINTHU ZOLEMERA PA THANKI KUTI MOTO UKHALE WAMPHAMVU

Ikani chinthu cholemera pamwamba pa thanki

Gwiritsani ntchito chinthu chimodzi CHOKHA mwa zinthu zotsatirazi:

- a. Matumba olemera obwera ndi thanki ya biogas
- b. Matayala
- c. Matumba a mchenga



a.



b.



c.

MUSAGWIRITSE ntchito zinthu zakuthwa zimene zingawononge thanki.



(TS5)



KUKUPUTA PAMALO OPHIKIRA

KALENDALA

Sabata iliyonse mpaka mwezi uliwonse malinga ndi mmene zinthu zilili

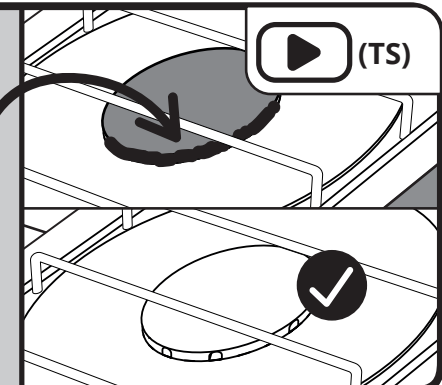
Gwiritsani ntchito

- bulashi
- madzi othira mandimu
- madzi asopo

Pukutani sitovu yophikira yanu ndipo muchotse zinthu zimene zatseka mabowo.



(TS)





POPUMIRA MPWEYA (OM2), (O&M1)

POPUMIRA MPWEYA (PRV) Podzadza: **Gasi wasungidwa mu thanki**

Tsekani popumira mphweya (PRV): **Gasi angathe kutuluka**

KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

KAWIRI PA SABATA, thirani madzi popumira mpweya mpaka adzadze

ONANI PA MSAMPHA WA MADZI

KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Kawiri pa sabata

Ngati mu msampha wa madzi ndi modzadza:

1. **Tsekani** zotsekera ndi kutsegulira za biogas
2. **Chotsani** madzi amene ali mu msampha wa madzi
3. **Tsekani** msampha wamadzi
4. **Tsekani** zotsekera ndi kutsegulira za biogas

(OM6)

MADZI OPEZEKA MU PAIPI YA GAS

Muziona paipi yoonekera mkati ngati mwakhazikika madzi ndipo muziwachotsa nthawi ndi nthawi potukula paipiyo. Madzi okhazikiwao n'kupita kwa nthawi atha kutsekereza gasi.

KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Tsiku lililonse

(TS1)



KUSINTHA FILUTA



KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Masabata awiri aliwonse

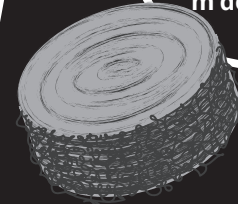
Zizindikiro zoonetsa kuti **waya wa ngati thonje** mu filuta akuyenera **kusinthidwa**:

- Biogas wopita kukhitchini **wachepa**,
- Biogas akumakhala ndi **fungo loipa**,
- **Madzi akuda** kutuluka mu filuta.

Pamene **mwaona bwinobwino** waya wangati thonje:

- Kodi wayayo wasowa/watha?
- Wada kwambiri komanso wafufuma.

\$
WAYA WANGATI THONJE akhoza kugulidwa m'dera lanu

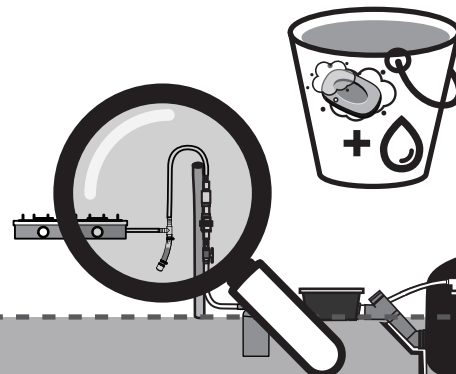


- 1** Tsekani zotsekera ndi kutsegulira za biogas
- 2** Tsegulani filuta
- 3** Chotsani waya wangati thonje
- 4** Sinthani. Musadzadzitse filuta mopitirira moyeso chifukwa ikhoza kutsekereza gasi
- 5** Onetsetsani kuti **gasiketi ya labala** ndi **yoyera** ndipo layikidwa bwino filuta lisanatsekedwe
- 6** Tsekani filuta
- 7** Tsegulani zotsekera ndi kutsegulira za biogas

KUONA NGATI PAIPI YA GASI IKUDONTHA

KALENDALA

Kamodzi pa chaka



Gwiritsani **ntchito madzi a sopo** paliponse palumikizana ndi **paipi ya gasi** (mafiluta, zotsekera ndi kutsegulira, mapaipi ndi zoyenera) pa nthawi imene digester yanu ili yokhuta kuti muone pomwe pakutulutsa mpweya.

Onetsetsani kuti **chotchinga cholekanitsa chanu** ndi **chotseguka!**



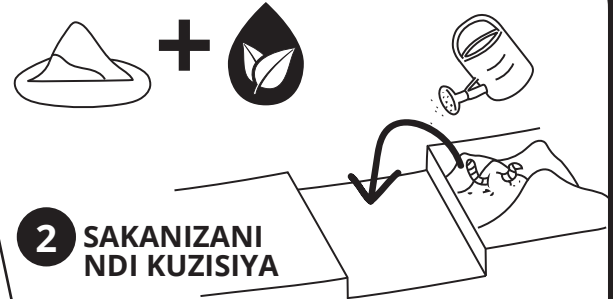
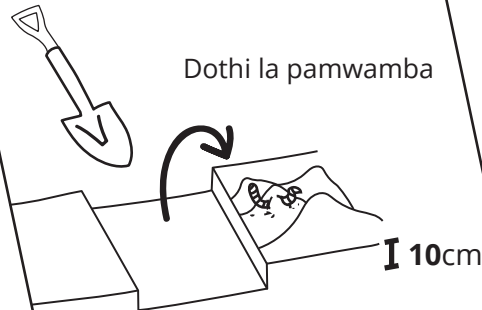
Kukonza nthaka musanadzale:



Thirani mpaka **malita 20 a feteleza wamadzi pamalo okula mita imodzi m'litali ndi m'lifupi** (kapena sitepe imodzi iliyonse), kenako sakanizani fetelezayo ndi dothi.

Dikirani nthakayo kwa masiku awiri musanadzalepo mbewu (pakati pa masitepe atatu kapena anayi).

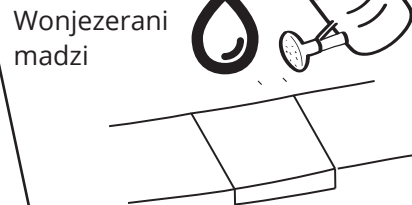
1 CHOTSANI



2 SAKANIZANI NDI KUZISIYA

Gawo limodzi la feteleza wamadzi: gawo limodzi la dothi lochotsedwa

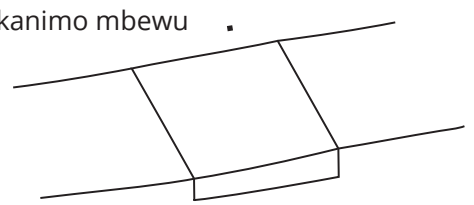
3 MADZI



Wonjezerani madzi

4 DZALANI

Ikanimo mbewu



Kuthira feteleza ku mbewu ndiponso ndiwo zamasamba

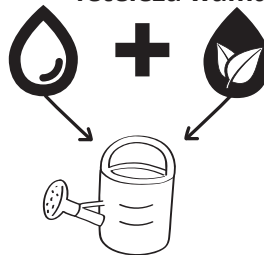
M'nyengo za dzuwa, M'nyengo za dzuwa, sungunulani gawo limodzi la feteleza wamadzi ndi gawo limodzi la madzi. Sumuyenera kusungunula feteleza wanu m'nyengo za mvula.

Feteleza wosungunula: Thirani malita oyambira awiri mpaka 10 a feteleza wosungunira pamalo aakulu mita imodzi m'litali ndi mita imodzi m'lifupi (kapena pa sitepe lililonse).

Feteleza wosasungunula: Thirani feteleza woyambira lita imodzi mpaka 5 pamalo aakulu mita imodzi m'litali ndi mita imodzi m'lifupi (kapena pa sitepe lililonse).

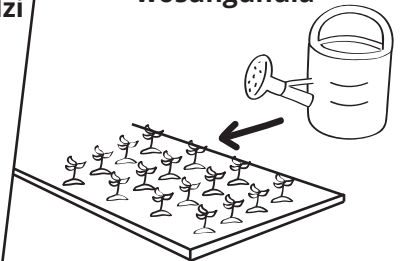
1 SAKANIZANI

Sakanizani **gawo limodzi la madzi: gawo limodzi la feteleza wamadzi**

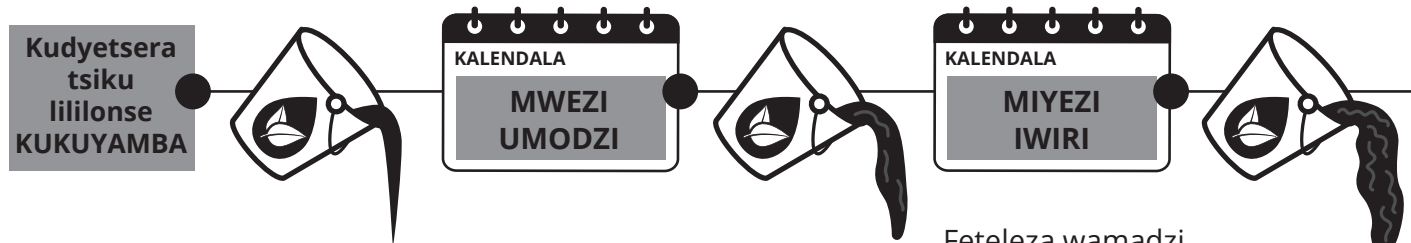


2 THIRANI

Ikani **feteleza wamadzi wosungunula**



KUSASINTHASINTHA KWA FETELEZA WAMADZI



Pa miyezi iwiri yoyambira, feteleza wamadzi:
- amakhala wamadzimadzi kwambiri
- akhoza kumadunkha
- akhoza kukopa udzudzu

Feteleza wamadzi **adzakhala waphalaphala m'kupita** kwa nthawi



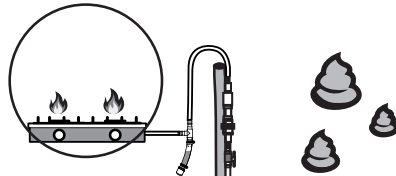
Pezani phindu lalikulu ndi digester yanu

NTHAWI YODYETSERA



KUDYETSERA KWA MWA APO NDI APO:

- Digester sikudyetseredwa mokwanira
- Moto wochepa

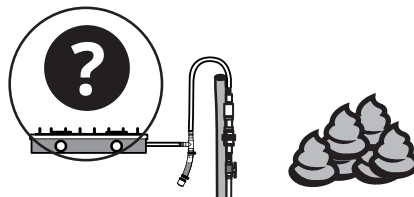


KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



KUDYETSERA KOPITIRIRA MUYESO:

- Digester ndi yodzaza kwambiri ndi CO2 ndipo ikusowekera CH4
- PALIBE moto

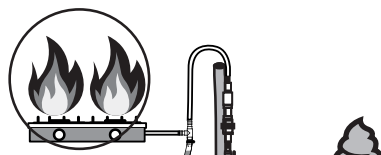


MUSADYETSERE KOPITIRIRA						
muyeso wovomerezeka.						



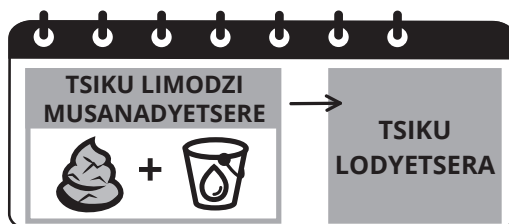
KUDYETSERA KOYENERERA:

- Digester yochita bwino
- Moto woyaka wabwino

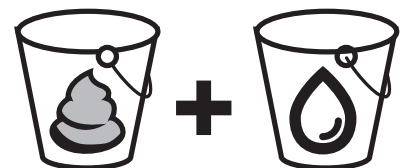


KALENDALA						
	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NDOWE ZOUMA





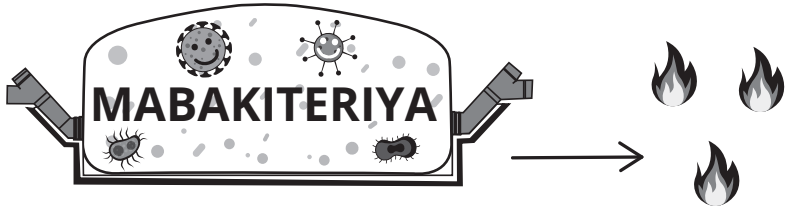
1. Tsiiku LIMODZI musanadyetsere: fewetsani mlingo umodzi wa ndowe mubigili, kenako thiranimo madzi ndi kutakasa kuti ndowezi zikhale zaphalaphala.




2. Pa nthawi yodyetsera, sungunulani madzi moyenerera (mlingo umodzi wa ndowe za ng'ombe ndi mlingo umodzi wa madzi).



<p>KUTENTHA NDI KUZIZIRA KUMAKHUDZA KAPANGIDWE KA GASI KOMANSO FETELEZA MU BIODIGESTER</p>	
<p>Nyengo IKAZIZIRA KWAMBIRI biogas amapangidwa mochedwa komanso amakhala wochepa.</p>	<p> <15°</p>
<p>Nyengo ikakhala YOTENTHA, mabakiteriya amapanga biogas wambiri komanso mwachangu.</p>	<p> >20°</p>



KUCHEDWA ndi **KUCHEPA** kwa mlingo wopangidwa



KUFULUMIRA ndi **KUCHULUKA** kwa mlingo wopangidwa

KUBWEZERA KWA FETELEZA WAMADZI MU DIGESTER

Zimenezi zimathandiza kuti thanki izigwira bwino ntchito m'madera ozizira kapena m'nyengo yozizira ndipo zimathandizira kuchepetsa madzi ogwiritsidwa ntchito.

BWEZERETSANI FETELEZA WAMADZI MU DIGESTER TSIKU LILILONSE:



1 Mlingo umodzi **feteleza wamadzi** (wokhala ndi zinthu zogwirana zochepa kwambiri)

+



1 Mlingo umodzi wa **manyowa**

+




1 Mlingo umodzi wa **madzi**


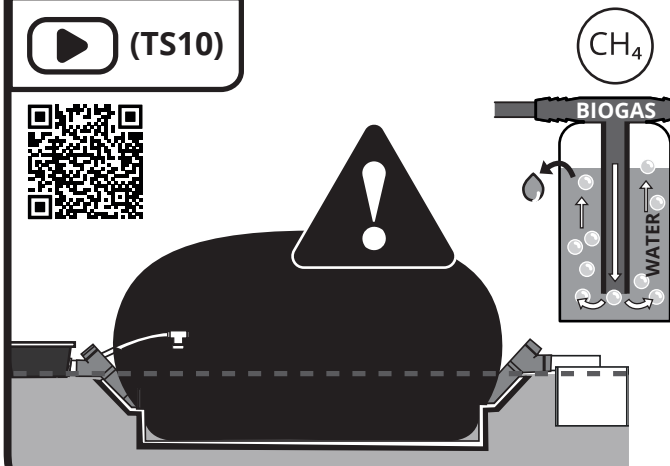
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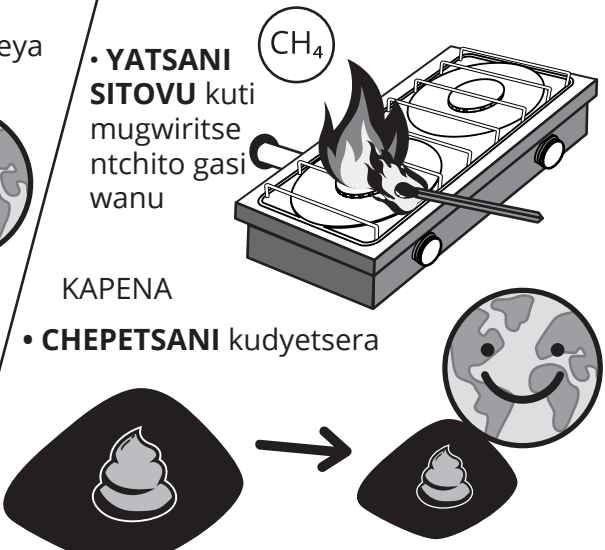
MUSALOLE KUTI BIOGASI WANU AWULUKE

Ngati digester yanu ili yokhuta **kwambiri** ndipo popumira mpweya (PRV) pakuwira:

 (TS10)

- **YATSANI SITOVU** kuti mugwiritse ntchito gasi wanu
- **CHEPETSANI** kudyetsera

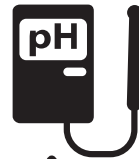




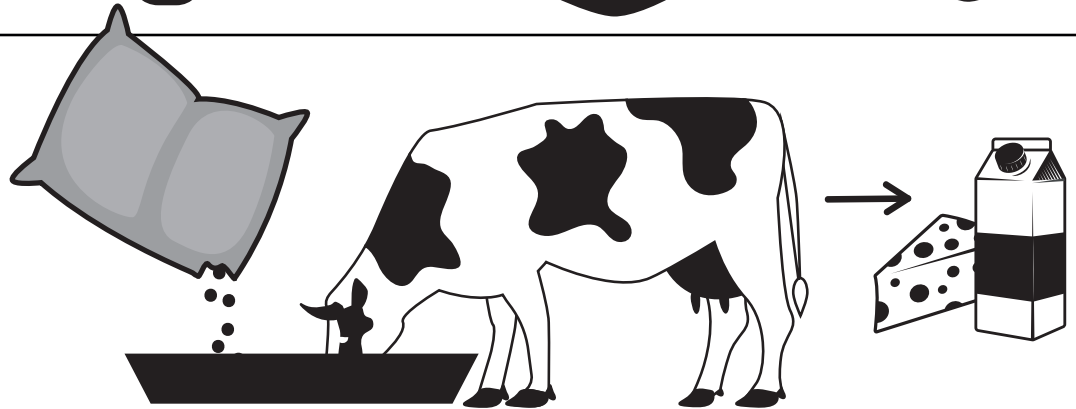
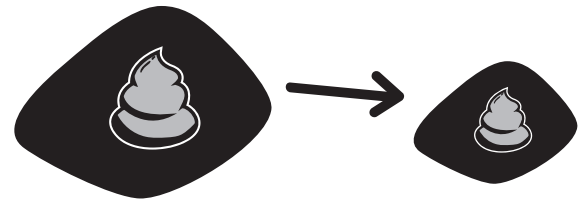
CHAKUDYA CHA ZIWETO

Ngati ng'ombe zanu zikudya chakudya chabwino choonjezera, ndowe zidzakhala zabwino kwambiri ndipo zidzapangitsa kuti asidi woononga akhale wambiri mu digester. Chepetsani pang'ono kudyetsera ngati mukugwiritsira ntchito ndowe zachoncho!

WAMBIRI

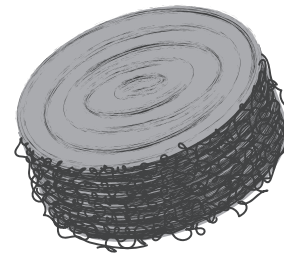


Chepetsani zodyetsera tsiku lililonse



Masipeyala

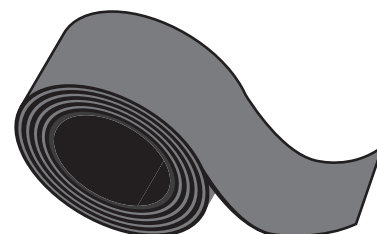
Kusinthwa WAYA WA NGATI THONJE: kamodzi pa masabata awiri aliwonse kapena pamwezi. Mutha kugula wayayu m'dera lanu lomwelo.



Kusinthwa PAIPI YOFEWA YOONEKERA MKATI: kamodzi pa zaka ziwiri kapena zitatatu zilizonse. Lankhulani ndi a Sistema.bio ngati mukufuna paipi yosinthira.



TEPI WOMATIRA yemwe mungagwiritse ntchito pomata mongoyembekezera digester yanu yikabowoka.





Zokhudza thanki/digester

GAWO LA CHIPANGIZO	CHIPANGIZO	ZOKHUDZA CHINTHU
Thanki yodyetsera	HDPE	Onani chitsanzo cha digester
Thanki	LLDPE	Onani chitsanzo cha digester
Thanki yafeteleza wamadzi	HDPE	Onani chitsanzo cha digester
Popumira mpweya	HDPE ndi UPVC	6" dayamita, 20 mbar mphamvu ya mpweya
Chotsekera ndi kutsegulira	UPVC	1" dayamita
Filuta ya biogas	PVC	2" dayamita
Paipi ya gasi yomwe ndi yofewa komanso yoonekera mkati	UPVC	1" dayamita
Paipi ya gasi	HDPE	1" dayamita
msampha wa madzi	ABS ndi UPVC	1" dayamita
Sitovu yokhala ndi malo amodzi ophikira (ngati ili yofunika)	Aluminiyamu wolimba	7 x 45 x 10 cm (h x l x w)
BioStove	Kapangidwe: chopangidwa ndi chitsulo chosachita dzimbiri kapena chokutidwa ndi chitsulo cholimbirapo Sitovu: Aluminiyamu wolimba	Sitovu yophikira: 12 x 68.5 x 38 cm (h x l x w) BioStove 2: 19 x 58 x 36 cm (h x l x w)

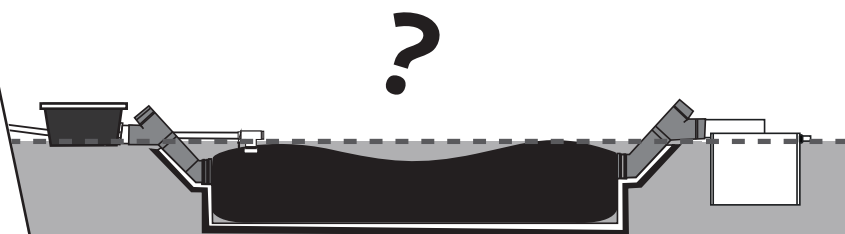
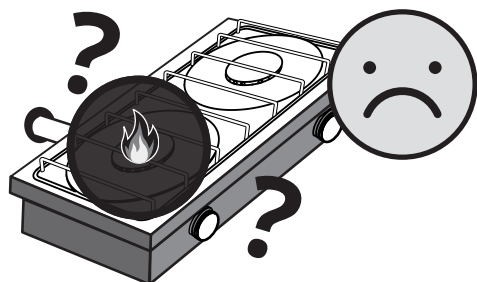
Kukula kwa digester	Kulemera koyerekezera kwa zinthu zonse pamodzi	Kakulidwe kwa thanki yodyetsera	Kachulukidwe ka feteleza wamadzi mu digester	Masungidwe a gasi mu digester	Kakulidwe ka thanki yafeteleza wamadzi	Kukula kwa malo ofunikira, m'litali * m'lifupi (osawerengera thanki ya feteleza wamadzi)
	kg	Ma lita	m ³	m ³	m ³	m * m
Sistema 6	67	110 L	4	2	1	5 * 3.6
Sistema 8	93	110 L	5.5	3	2	6 * 3.6
Sistema 12	109	160 L	8	4	2	7 * 3.6
Sistema 16	137	160 L	11	6	4	9 * 3.6
Sistema 20	163	160 L	15	8	4	11 * 3.6
Sistema 30	219	160 L	22.5	12	8	15 * 3.6
Sistema 40	257	160 L	30	15	8	19 * 3.6



Zoyenera kuchita pothana ndi mavuto mwachangu

VUTO:

- Biogas wanga ndi wosakwanira kuphikira
- Mu BioStove mwanga mulibe biogas, ndipo digester yanga ndi yophwera!



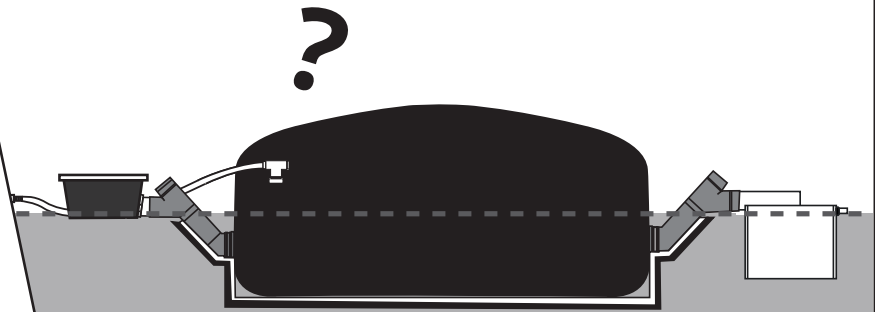
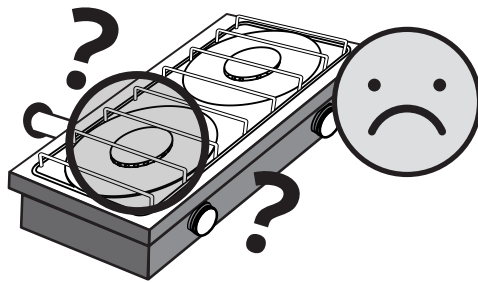
- **Kodi mumapaipi olowetsera ndi kutulutsira zinthu muli madzi okwanira?** Onetsetsani kuti ndizodzadza n'cholinga choti biogas asamatuluke. Onani chigawo chakuti **"Kulumikiza biodigester"** "Thirani madzi mu thanki kufikira atafika polowera ndi potulukira." pa tsamba 10. Makanema: I3, I5.
- **Kodi mwatsiriza kudyetsera kwanu koyamba?** Onani chigawo chakuti **"Kulumikiza biodigester"**, "Kudyetsera koyamba" pa tsamba 11. kanema: OM7.
- **Kodi papita nthawi yokwanira bwino kuchokera pomwe munadyetsera koyamba?** Onani chigawo chakuti **"Kulumikiza biodigester"**, "DIKIRANI KUTI THANKI IFUFUME" pa tsamba 13.
- **Kodi mukutsatira malangizo okhudzana ndi kudyetsera?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "Kusamalira digester yanu" pa tsamba 14 ndiponso **"Pezani phindu lalikulu ndi biodigester"**, "NTHAWI YODYETSERA" pa tsamba 22. Makanema: OM7, OM8.
- **Kodi potsekera ndi kutsegulira mpweya ndi podzadza ndi madzi?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "POPUMIRA MPWEYA" pa tsamba 19. Makanema: OM2, O&M1.
- **Kodi zotsekera ndi kutsegulira za BioStove, pa msampha wa madzi kapena filuta ya biogas zinali zotseguka?** Zitsekeni! Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "MOTO WOYAMBA WA BIOGAS" pa tsamba 18, "ONANI PA MSAMPHA WA MADZI" pa tsamba 19 ndiponso **"KUSINTHA FILUTA"** pa tsamba 20. Makanema: OM6, TS12, OM5.
- **Kodi pali gasi akutuluka pamalo ena?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "KUONA NGATI PAIPI YA GASI IKUDONTHA" pa tsamba 20.
- **Nyengo yozizira, nyengo ya mvula?** Mutha kubwezeretsa feteleza wamadzi mu thanki pofuna kuti biodigester izigwira bwino ntchito kwambiri m'nyengo yozizira. Onani chigawo chakuti **"Kulitsani phindu la biogester"**, "KUTENTHA NDI KUZIZIRA KUMAKHUDZA KAPANGIDWE KA GASI KOMANSO FETELEZA MU BIODIGESTER" pa tsamba 23.
- **Kodi malo oyatsapo moto a sitovu ndi BioStove zinaikidwa m'zipinda zosiyana?** Onani ngati wina wake akugwiritsa ntchito biogas!

Ngati biogas wanu akupangidwabe wochepe: LANKHULANI NDI TEKINISHANI WANU!



VUTO:

- Mu BioStove yanga mulibe biogas kapena sikuyaka ndipo digester yanga ndi yakuphwa!



- **Kodi mwaika chinthu cholemera pa digester yanu?**

Onani chigawo chakuti **“Mmene mungagwiritsire ntchito zipangizo zanu”**, **“IKANI ZINTHU ZOLEMERA PA THANKI KUTI MOTO UKHALE WAMPHAMVU”** pa tsamba 18. kanema: TS5.

- **Kodi zotsekera ndi kutsegulira gasi zinali zotseka?** Zitseguleni! Onani chigawo chakuti **“Mmene mungagwiritsire ntchito zipangizo zanu”**

“Muzigwiritsa ntchito mphamvu ya gasi amene mwapanga ndipo samalani paipi yanu ya biogas nthawi zonse!” pa tsamba 18. Makanema: OM3, OM3bis, OM4.

- **Kodi mukuchotsa madzi kawirikawiri mu msampha wa madzi?** Onani chigawo chakuti **“Mmene mungagwiritsire ntchito zipangizo zanu”**, **“ONANI PA MSAMPHA WA MADZI”** pa tsamba 19. kanema: TS3.

- **Kodi paipi yanu ya biogas ndi yokhwefuka?** Madzi akhoza kukhazikika mupaipi ya biogas m'malo amene paipiyo ndi yokhwefuka ndipo zingachititse kuti biogas azilephera kuyenda! Tukulani paipi ya gasiyo n'cholinga choti madziwo apite kumene kuli msampha wa madzi kapena kumalo opumira mpweya. Onani chigawo chakuti **“Mmene mungagwiritsire ntchito zipangizo zanu”**, **“MADZI OPEZEKA MU PAIPI YA GASI”** pa tsamba 19. Makanema: TS1, TS6.

- **Kodi waya wa ngati thonje mu filuta ya biogas akutsekereza kayendedwe ka biogas?**

Ngati biogas wanu akupangidwabe wochepa: LANKHULANI NDI TEKINISHANI WANU!

Tsegulani filuta ndi kusolola waya wangati thonje. Gwiritsani ntchito kamtengo kuti mutsimikizire kuti mkatimo simunatsalire waya wakale wangati thonje. Yesani kuyatsa BioStove kuti mugwiritse ntchito gasi! Onani chigawo chakuti **“Mmene mungagwiritsire ntchito zipangizo zanu”**, **“KUSINTHA FILUTA”** pa tsamba 20. kanema: OM5.

- **Kodi paipi ya gasi ndi yopindika pena pake?** Iwoneni bwino kwambiri paipi ya gasi ndi kutsimikiza kuti palibe pena pake pali potchingika.

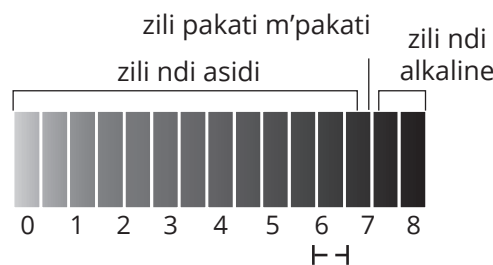
- **Ngati malo amodzi mwa malo awiri ophikira a BioStove sakuyaka,** n'kutheka kuti popumira mpweya patsekeka. Itanani tekinishani wanu!

- **Kodi mukudyetsera digester yanu mopitirira muyezo?** Onani ku chigawo cha **“Pezani phindu lalikulu ndi biogester”**, **“NTHAWI YODYETSERA”** pa tsamba 22. Gwiritsani ntchito chipangizo choyezera mlingo wa pH kuti muyeze pH imene ili mu feteleza wamadzi yemwe mwamutenga kupaipi yotulutsira zinthu (chonde tsatirani malangizo okhudza kuyeza pH). Ngati mlingo wa pH mufeteleza wamadzi ndiwotsika ndipo mukupitiriza kudyetsera digester yanu, zikhoza kuchititsa mabakteriya kuti asamapange biogas: carbon dioxide wochulukira zedi koma methane wochepa kwambiri.



VUTO:

- Asidi wochulukirapo:
pH 6 mpaka 6.5



1. Siyani kudyetsera thanki ndi **kuchotsa chilichonse** mu digester ya biogas potsegula popumira mpweya.

2. Gunyuzani digester bwinobwino. kanema: OM13.

3. Isiyeni kwa masiku atatu kapena mpaka pamene idzapopeke bwinobwino.

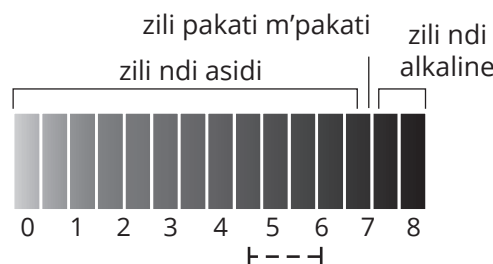
4. Yesani kuyatsa sitovu ya biogas.

5. Ngati gasi sakuyaka, bwerezani kuyambira pa ndondomeko yoyamba.

Ngati biogas yanu siikuyakabe: LANKHULANI NDI TEKINISHANI WANU!

VUTO:

- Asidi wochuluka kwambiri:
pH 4.5 mpaka 6



1. Siyani kudyetsera thanki ndi **kuchotsamo** biogas yense.

2. Gunyuzani digester bwinobwino. kanema: OM13.

3. Pungulani zinthu mu digester mpaka zitafika pa hafu.

4. Zadzaninso digester ndi:
A) madzi osakaniza ndi feteleza wamadzi wochokera mu digester yomwe ikugwira ntchito
B) madzi osakaniza ndi ufa wa miyala ya laimu wokwana 5 mpaka 10kg ngati ili Sistema 6 (muziwonjezera kuti zigwirizane ndi kukula kwa digester).

5. Isiyeni kwa nthawi yoyambira sabata imodzi mpaka masabata atatu, kapena mpaka pamene idzafufume bwinobwino.

6. Yesani kuyatsa BioStove.

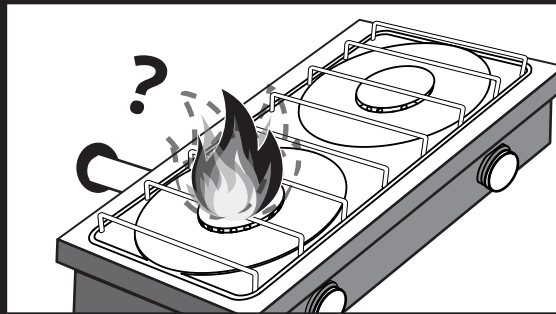
7. Ngati gasi sakuyaka, chotsani yabiogas mu digester pogwiritsa ntchito popumira mpweya ndipo isiyeni kwa nthawi yoyambira sabata imodzi mpaka masabata atatu kapena mpaka pamene idzafufume bwinobwino n'kuyamba kupanga gasi woyaka.

Ngati biogas yanu siikuyakabe: LANKHULANI NDI TEKINISHANI WANU!



VUTO:

- Moto wa pa BioStove yanga ukuthimathima



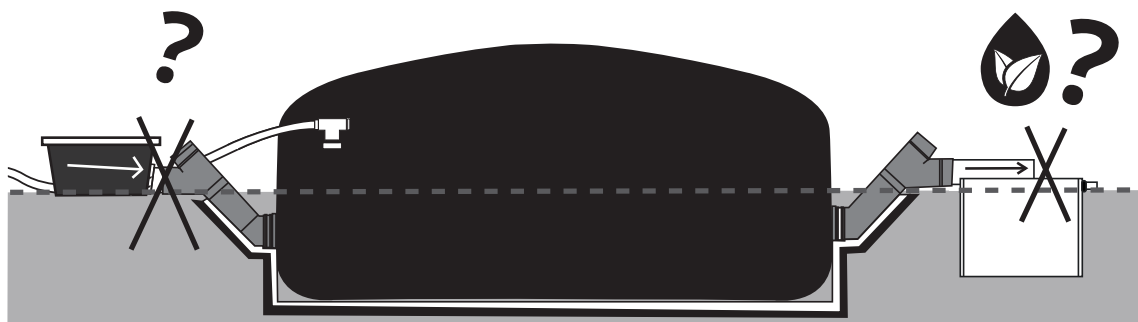
Mwina muli madzi amene akhazikika pena pake mu paipi ya gasi.

- **Kodi paipi yanu ya biogas ndi yokhwefuka?** Madzi angakhazikike m'malo okhwefuka a paipi ya biogas n'kumalepheretsa biogas kuyenda bwinobwino! Tukulani paipi ya gasiyo n'cholinga choti madziwo apite kumene kuli msampha wamadzi kapena kumalo opumira mpweya. Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "MADZI OPEZEKA MU PAIPI YA GASI" pa tsamba 19. Makanema: TS1, TS6.

- **Kodi mukuchotsa madzi kawirikawiri mu msampha wa madzi?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "ONANI PA MSAMPHA WA MADZI" pa tsamba 19. Makanema: TS3, OM6.
Ngati moto wa pa sitovu yanu ukuthimathimabe: LANKHULANI NDI TEKINISHANI WANU!

VUTO:

- Feteleza wamadzi sakulowa mu digester
- Feteleza wamadzi sakutuluka mu digester



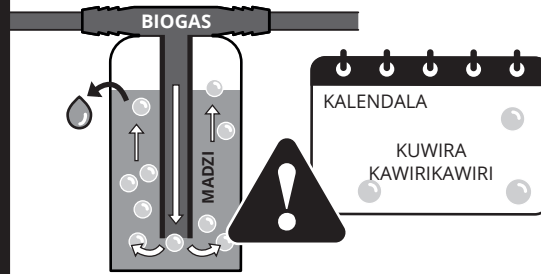
- **Ngati feteleza wanu wamadzi amatuluka pokhapokha digester yanu ikafufuma ndiye kuti palibe vuto lililonse!**
- **Chotsani zinthu zimene zatsekereza mapaipi olowetsera** ndi kutulutsira zinthu mu digester monga zinthu zogwirana / zoundana zomwe zingachititse kuti biogas azilephera kuyenda bwino. Gwiritsani ntchito kamtengo kofewa (monga nsungwi) kuchotsa zomwe zatsekereza paipi ndipo mungalowetse kamtengoko pamalo olumikizira a Y. kanema: TS11.

- **Kodi paipi yolowetsera zinthu ili m'munsi poyerekezera ndi paipi yotulutsira zinthu?** Kwezekani pang'ono thanki yodyetseramo poika miyala kapena dothi pansu pake.
Ngati feteleza wamadzi sakuyendabe: LANKHULANI NDI TEKINISHANI WANU!



VUTO:

- Pamalo potsekera ndi kutsegulira mpweya wanga pakumawira kawirikawiri!



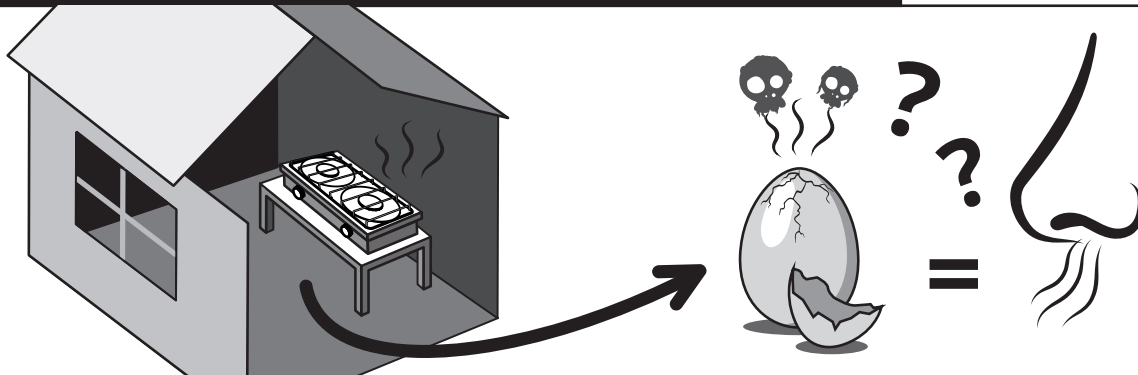
- **Kodi mukumaonetsetsa kuti popumira mpweya ndi podzadza ndi madzi nthawi zonse?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "POPUMIRA MPWEYA" pa tsamba 19. Makanema: OM2, O&M1.
- **Mwina mukupanga biogas wochuluka mopitirira muyezo!** Chonde yatsani sitovu kuti mugwiritse ntchito gasi woonjezerayo kapena mungatereke madzi pa

sitovuyo! Ngati imawira nthawi ndi nthawi, chepetsani kudyetsera mwapang'onopang'ono. Onani chigawo chakuti **"Kulitsani phindu la biogester"**, "MUSALOLE KUTI BIOGASI WANU AWULUKE" pa tsamba 23. kanema: TS10.

Ngati digester wanu apangabe biogas wopitirira muyezo: LANKHULANI NDI TEKINISHANI WANU!

VUTO:

- Kukhitchini kukumveka fungo la gasi lofanana ndi la mazira owola



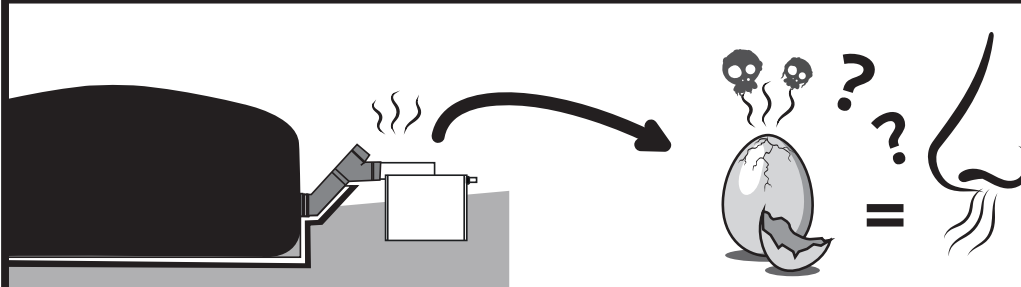
- **Kodi fungolo likumamveka mukamayatsa sitovu yanu yophikira?** Ngati ndi choncho, musamachedwe kuyatsa sitovuyo mukangotsegula gasi. Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "IKANI ZINTHU ZOLEMERA PA THANKI KUTI MOTO UKHALE WAMPHAMVU" pa tsamba 18. Makanema: OM11, OM12.
- **Kodi mukusintha pafupipafupi waya wa ngati thonje mu filuta yanu?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "KUSINTHA FILUTA" pa tsamba 20. kanema: OM5.

- **Kodi zotsekera ndi kutsegulira gasi za sitovu yophikirayo, misampha ya madzi kapena filuta ya biogas zinali zotseguka kapena zosatseka bwino?** Zitsekeni! Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "MOTO WOYAMBA WA BIOGAS" pa tsamba 18, "ONANI PA MSAMPHA WA MADZI" pa tsamba 19 ndiponso "KUSINTHA FILUTA" pa tsamba 20. Makanema: OM6, TS12, OM5.
- **Kodi pali gasi akutuluka pamalo ena?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "KUONA NGATI PAIPI YA GASI IKUDONTHA" en la pa tsamba 20 ndiponso **"Chitetezo"**, "Biogas" en la pa tsamba 8.

Ngati mukumvabe kununkha kwa biogas mukhitchini mwanu: LANKHULANI NDI TEKINISHANI WANU!

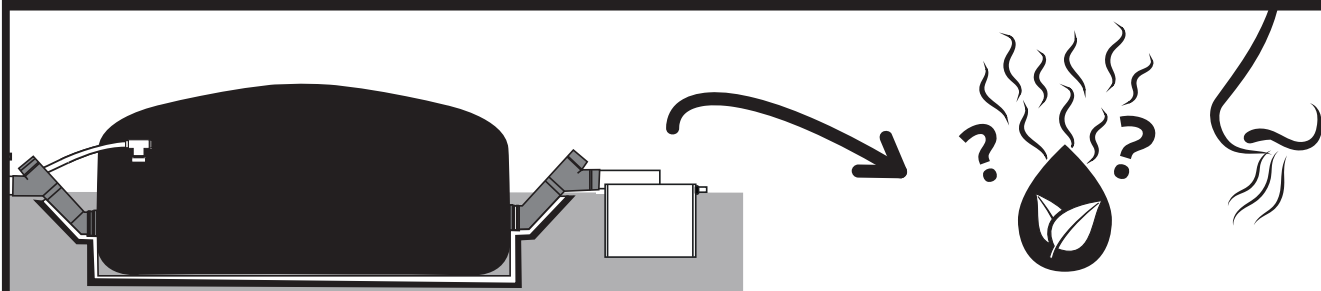


VUTO: • Fungo la gasi lofanana ndi la mazira owola likumveka pafupi ndi digester



- **Kodi mukutha kuona madzi mumapaipi olowetsa ndi kutulutsa zinthu?** Onetsetsani kuti mapaipiwo ndi odzadza n'cholinga choti biogas asathe kutuluka. Onani chigawo chakuti **"Kulumikiza biodigester"** "Thirani madzi mu thanki kufikira atafika polowera ndi potulukira." pa tsamba 10. Makanema: I3, I5.
- **Kodi potsekera ndi kutsegulira mpweya ndi podzadza ndi madzi?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "POPUMIRA MPWEYA" pa tsamba 19. Makanema: O&M1, OM2.
- **Kodi pali gasi akutuluka pamalo ena?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "KUONA NGATI PAIPI YA GASI IKUDONTHA" pa tsamba 20.
- **Kodi filuta ya biogas wanu ndi yomanga bwino ndi gasiketi filuta?** Onani chigawo chakuti **"Mmene mungagwiritsire ntchito zipangizo zanu"**, "KUSINTHA FILUTA" pa tsamba 20. kanema: OM5.
- **Kodi paipi yofewa yoonekera mkati yolumikiza digester ndi filuta yabowoka?** Itanani tekinishani wanu!

VUTO: • Feteleza wanga wamadzi akununkha!



- **Kodi mukudyetsera digester yanu mopitirira muyezo?** Onani ku chigawo cha **"Pezani phindu lalikulu ndi biogester"**, "NTHAWI YODYETSERA" pa tsamba 22. Gwiritsani ntchito chipangizo choyezera mlingo wa pH kuti muyeze pH imene ili mu feteleza wamadzi yemwe mwamutenga kupaipi yotulutsira zinthu (chonde tsatirani malangizo okhudza kuyeza pH). Ngati mlingo wa pH mufeteleza wamadzi ndiwotsika ndipo mukupitiriza kudyetsera digester yanu, zikhoza kuchititsa mabakteriya kuti asamapange biogas: carbon dioxide wochuluka zedi koma methane wochepa kwambiri.
- **Kodi mu digester yanu mukudyetseramoyo zinyalala zina zosachedwa kuolerana zosiyana ndi ndowe?** Zinyalala zina zimasiyana mmene zingagaidwire ndipo pafunika kudyetsera pa mlingo woyenera! Lankhulani ndi tekinishani wanu.



- **Choikamo** zipangizo zanu za biodigester chitha **kugwiritsidwa ntchito kangapo**. Tikukulimbikitsani kuti mupite nacho kumalo okonza zoikamozi kuti zigwiritsidwenso ntchito omwe ali pafupi ndi kumene mumakhala **kuti akakukonzereni kapena akupatseni choikamo china**.
- **Waya wa ngati thonje** akhoza **kutayidwa** ku dzala kapena kuikidwa **mu manyowa kuti awonjezeremo iron ndi sulphur -koma amafunika kumunyenyananya** kaye musanaike!
- **Zaka 20 za umoyo wa digester yanu zikatha** ndipo sikuthanso kugwira ntchito, **tangani zipangizo zake ndi kupita nazo ku malo akwanuko komwe angathe kuzigwiritsa ntchito popanga zipangizo zina**.
- Ngati mukufuna kudziwa zambiri zokhudza malo ogwiritsa ntchito zinthu zakale pokonza zatsopano, khalani omasuka kutiimbira foni.



Zoyenera kukumbukira

Dzina la tekinishani:

Tsiku lolumikiza:

Mtundu wa zinyalala:

Mlingo wodyetsera tsiku lililonse:

Kusungunula:

Nambala yodziwikitsa chinthu:



Maadiresi ndi manambala a foni

ADIRESI/NAMBALA YA FONI YA WOTHANDIZA MAKASITOMALA WA KU SISTEMA.BIO:

Dzina:

Foni:

Adiresi ya imelo:

<https://sistema.bio/contact-us/>

Tsiku komanso siginecha kuchokera kwa ophunzitsidwa kuvomera kuti ALANDIRA MAPHUNZIRO:

KUTI MUDZIWE ZAMBIRI, PITANI PA:

www.sistema.bio
www.ecogenmw.com

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