

Resource Material for Homestead Food Gardeners

Chapter 2: Handouts (isiZulu)

Handout 1 Ucwangingo Lwabalimi (Farmer experimentation)

1. Ucwangingo Lwabalimi

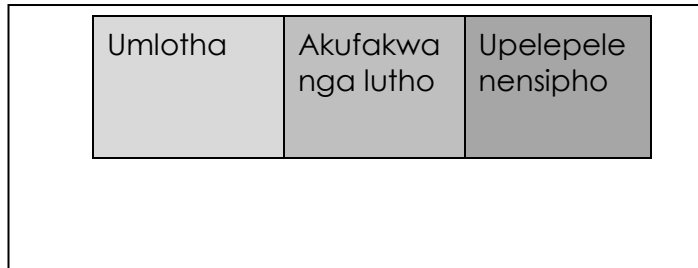


Ekulimeni ,sihlengana nezinkinga ezintsha njalo ngasosonke isikhathi sidinga ukuthola izindlela zokuxazulula lezinkinga .Singafuna ukuzama izindlela ezintsha kwesinye isikhathi .Kumele sizizame lezindlela ngaphandle kokuzifaka enkingeni thina noma ngaphandle kokuzandisela izinkinga .Singakwenza lokhu ngokuthi senze ucwangingo .

Ucwangingo ukuhlola indlela esenza ngayo izinto ukuze sibone ukuthi umphumela uzophumelela yini . Uma sithola ukuthi zikuphi izinkinga bese sithola izimbangela zezinkinga ,singaqhamuka nezindlela noma nomphumela walezizinkinga.Singenza ucwangingo ukuze sibone ukuthi indlela esenza ngayo iyasebenza ngempela. Senza ucwangingo endaweni encane kuqala ,umakwenzeka lungasebenzi , zonke izitshalo zonakele .

Nasi isibonelo sika nkosikazi Ngobese wakwaHlongwa(Umzumbe,South Africa) .Wanquma ukwenza ucwangingo ngezindlela ezahlukeni ukulwa nezintwala zekhabishi ezitshalweni zekhabishi lakhe.Wayeke wezwa ngezinto ezimbili ayengazizama . Okukuqala ukufaka umlotha emacembeni ekhabishi , okunye kwakunguchela ngensipho enopelepele ekhabishini lakhe . Lemiphumela yezintwala zekhabishi wazitholela yena ,ngaphandle kokuthi achithe imali eningi .

Unkosikazi Ngobese wathatha inxenywe encane yengadi yakhe (engangokunye eshumini 1/10) njengesibonelo . Wahlukanisa ingadi yakhe izinxenywe ezintathu wazibekisa ngokukhulu ukucophelela.



1. Kweyokuqala wafafaza umlotha ekhabishini lakhe .
2. Kweyesibili akafakanga lutho.Okusho ukuthi akazamanga eminye yemiphumela yakhe lokhu wakwenza ngoba efuna ukubona ukuthi ngabe imiphumela yakhe isebenza ngempela .Ngamanye amazwi ,wayefuna ukubona ukuthi umphumela usebenza kangcono kunokungafaki lutho
3. Kweyesithathu wafaka noma wachelela ngensipho enopelepele.

Wagada futhi wabheka ocwaningweni lakhe. Njalo ngesonto wayebheka ikhabishi lakhe futhi abhale phansi ukuthi mangaki amakhabishi anezintwala .Wakwenza lokhu ukuze akhumbule ngqo okwenzekile ,ekugcineni ukuze akwazi ukunquma ukuthi iyiphi indlela esebenza kangcono.

Isonto	1 Umlotha	2 Akufakwangwa lutho	3 Upelepele –nensipho
1,2 kanye no 3	Azikho izintwala zekhabishi	Azikho izintwala	Azikho izintwala
4	Fafaza umlotha uma izintwala zekhabishi zivela	Izintwala ziyavela;ezingangeshumi esitshalweni ngasinye.Ezinye zezitshalo zinezintwala kuphela.	Chela upelepele nensipho uma izintwala ziqhamuka
5	Zikhona izintwala ezingangezinhlanu isitshalo ngasinye	Manje izintwala sezigcwele kuwo wonke amacembe zingangekhulu isitshalo ngasinye	Izintwala kubonakala sengathi zinyamalele
6	Ziyanda izintwala manje sezivela nasezitshalweni lapho ebezingekho khona phambilini.Fafaza umlotha	Izintwala zivela nakulezo zitshalo ebezingenazo phambilini.	Ziyanda izintwala.izintwala zivela nasesitshalweni ebezingenazo .Fafaza upelepele nensipho futhi
7	Ziyancipha izintwala .ezinye izitshalo azinazo izintwala.isimo sezulu esishisayo ,amacembe abukeka eshile .Ingabe umlotha na?	Izintwala seziyazigcogcomela kuzo zonke izitshalo.Isimo esishisayo sezulu akukho ukuhashuka	Izintwala zincane ,ezinye zezitshalo azinazo izintwala .Isimo sezulu esishisayo , alishi ikhabishi
8	Amacembe ahashukile /nashile asekhishiwe kwoda isitshalo sisakhula- kukhona izintwala ezincane	Izitshalo azimili kahle . izintwala sezisuka lapha ziye lapho kukhona umlotha nalapho kukhona upelepele-	Zibalwa izintwala ,kodwa ziyanda

		nesipho .	
9	Izintwala ziyanda kancane ngemuva kwemvula enamandla .Awusebenzisanga umlotha oningi	Waquma ukulikhipha ikhabishi enndaweni okungafakwangwa lutho ,ngoba bezingamili futhi zigcwele izintwala Besezigcogcomela nakweminye imibhede	Izintwala ziyanda kakhulu ngemuva kwemvula enamandla. Chela futhi
10	Ezinye zezintwala kuzo zonke izitshalo ,kodwa aziziningi kakhulu		Izintwala zincane kakhulu .Izitshalo ziqala ukukhipha amakhanda
11	Makhathaleni ziyanda izintwala kunzima ukusebenzisa umlotha ezitshalweni ngoba sezikhipha izigaqa manje, kodwa zama ukufafaza imbijane nje		Ziyanda izintwala .Izitshalo zikhipha izigaqa manje .Chela futhi.
12	Ukuvuna		Ukuvuna
Umpfumela	Izintwadlana nje,izigaqa sezinomlotha futhi azibukeki zizinhle .	Azikho izigaqa .Izitshalo zibulawe izintwala	Izintwala zincane ezitshalweni , Izigaga zinhle ezitshalweni

Wacabanga ukuthi enye indlela yokubona ukuthi ucwaningo lusebenzile wukukala isisindo samakhabishi ngemuva kocwaningo.Wakala amakhabishi angu10 kulowo nalowo mubhede .

Wabhala imiphumela yakhe ethebuleni ngenzansi.

Isisindo sesikhabishi nga KG	Umlotha	Lapho kungafakangwa lutho khona	Upelepele oxujwe nensipho
	Inombolo yekhabishi	Inombolo yekhabishi	Inombolo yekhabishi
1.	0.85kg	1-	0.75kg
2.	0.56kg	2-	0.82kg
3.	0.55kg	3-	0.59kg
4.	0.81kg	4-	0.62kg
5.	0.33kg	5-	0.86kg
6.	0.76kg	6-	0.88kg
7.	0.54kg	7-	0.45kg
8.	0.59kg	8-	0.73kg
9.	0.62kg	9-	0.55kg
10.	0.88kg	10-	0.65kg

INANI	6.49kg	0	6.90kg
-------	--------	---	--------

Umlotha	Lapho kungekhokhona lotho	Upelepele-nensipho
<p>Ngicabangani:</p> <p>Kusekhona umlotha ezigaqeni zekhabishi, omunye umlotha ungene ekugoqekeni kwamacembe ekhabishi. Ngicabanga ukuthi umlotha ulihashulile ikhabishi. Umlotha futhi uyagezeka emvuleni, futhi kumele ngiphinde ngiwufake</p>	<p>Ngicabangani:</p> <p>Zibeningi kakhulu izintwala zekhabishi kwaze kwamele ukuthi ngilikiphe lonke ikhabishi lapho nginga fakanga lutho khona, futhi ngeke ukwazi ngisho nokuwakala amakhabishi. N</p> <p>Gicabanga ukuthi abengeke aze abe nezigaqa. Ukusebenzisa umlotha noma upelepele-nensipho kuncono kunokungenzi lutho.</p>	<p>Ngicabangani :</p> <p>Ikhlabishi kulombhede libukeka lilile kakhulu futhi linesisindo esikhulu kakhulu kunawonke . Kumele ngifafaze umphumela kanye ngemuva kwamasono amabili, okukakhulu uma linile . Upelepele nensipho ubukeka ubulala izintwala zekhabishi okuyinto enhle ngoba azibalekeli kwezinye izitshalo . Ngizosebenzisa upelepele-nensipho ngesikhathi esizayo.</p>

Akesicabange kakhudlwane ngalokhu UNkosikazi Ngobese akwenzile. ngasenzisa isibonelo sakhe ukuhlela ucwaningo engadini yakho.

Sizosebenzisa lesithombe ukukusiza ngocwaningo lwakho.

Ucwaningo



Ngesikhathi ubona lesithombe, kuzoba isikhathi sakho sokuthi ucabange ukuthi ungazenzela ucwaningo engadini yakho uzitholele imiphumela emihle .

Ngenkathi enza lolucwaningo, uNkosikazi Ngobese wazibuza imibuzo ethile, futhi wayiphendula yena

1. Okokuqala, wazibuza ukuthi ikuphi inkinga. Iphendulo ithi kunezintwala zekhabishi ekhabishini lakhe ucabanga ukuthi lokhu kuyinto embi .
2. Siyini isixazululo kule nkinga ? uNkosikazi Ngobese wacabanga isixazululo esisodwa ukuthi akafafaze umlotha ekhabishini lakhe, esinye ukuchela ngopelepele –nensipho kuxutshiwe .
3. Kungani lomphumela uzoyixazulula inkinga? UNkosikazi Ngobese wacabanga ukuthi lemiphumela izoziqeda izintwala zekhabishi

4. Ngizowuhlola kanjani lomphumela ?uNkosikazi Ngobese wafaka umlotha kwamanye amakhabishi , kanye no pelepele-nensipho kwamanye futhi , wase engenzi lutho kwenye inxenywe yocwaningo .Wabe esebala izintwala zekhabishi .
5. Ngingawubheka kanjani umphumela.Yini engizoyibheka ? uNkosikazi Ngobese wabheka ukuthi zingaki izintwala zekhabishi ekhabishini lakhe njalo ngeviki ,futhi wayebhala ukuthi utholeni . Wathola ukuthi lapho engenzanga khona lutho kwakunezintwala eziningi ,eziningi kakhulu ukwendlula lapho okwakukhona umlotha nalapho kuno pelepele –nensipho wabona ukuthi angazinciphisa izintwala zekhabishi uma enza lokhu njalo ngemuva kwamasonto amabili.
6. Ngingayibheka kanjani imiphumela yami futhi . Yini engizoyikala?uNkosikazi Ngobese wakala amakhabishi angu 10 kuleyo naleyo nxenye lapho ayenze khona ucwaningo ngemuva kokuvuna .Wathola ukuthi amakhabishi angu 10 okwakusebenziswe umlotha ayenesisindo esingu 6.49 futhi angu 10 ayelaphokusebenziswe upelepele –onensipho ayenesisindo esingu 6.9kg . Lokhu kusho ukuthi ikhabishi okwakusebenziswe upelepele –nensipho lalinesisindo esikhulu .Lapho kungafakanga lutho khona alizange lize likalwe .
7. Ngingawukala kanjani umphumela noma isibonakaliso? Ikhabishi elinezintwala ezincane kakhulu futhi elinesisindo esikhulu kakhulu kunawo wonke ilo elihle.
8. Ngingaqhathanisa kanjani ucwaningo lwami nendlela ejwayelekile engilima ngayo? Indlela ejwayelekile ka Nkosikazi Ngobese kwakungezi lutho ngezintwala zekhabishi , njengalenxenywe lapho ayengafakanga lutho khona .Kulolucwaningo,uNkosikazi Ngobese wabona ukuthi umlotha kanye nopelepele nensipho kuyalehlisa izinga lezintwala zekhabishi ezitshalweni zakhe.Wabona ukuthi kumele aphindelele ukukufaka kokubili,Okukakhulukazi umalina.Manje usecabanga ukuthi upelepele oxutshwe nensipho ikhona okuyindlela esebenzayo yokuqeda izintwala zekhabishi.

Ethebuleni elilandelayo uzothola imibuzo ezokusiza ukuthi ukwazi ukudlela ucwaningo lwakho,futhi kunesikhala lapho uzobhala khona izimpendulo.

Uhlelo locwaningo endaweni encane	
1. Yini nkinga?	
2.Siyini isixazululo kulenkinga?	
3.Kungani lomphumelo uzoyixazulula	

lenkinga?	
4.Uzowuhlola kanjani lomphumela?	
5.Ngizowuhlola kanjani umphumela.Yini okumele ngiyibheke?	
6.Ngigayibheka kanjani futhi imiphumela yami.Yini okumele ngiyikale?	
7.Ngingawukala kanjani umphumela wami noma isigcino?	
8.Ngingaliquhathanisa kanjani ucwaningo lami nendlela engijwayele ukulima ngayo	

Uma wenza ucwaningo kubalulekile ukukala imiphumela yakho,bese ubheka imiphumela yocwaningo ukuthi iyasebenza yini. Uma uzama izinto eziningi ngesikhathi esisodwa,ngaphendle kokucabanga ukuthi uzoyikala kanjani imiphumela yakho,kungenzeka ungazi ukuthi isiphi isixazululo esisebenzile.

Into enhle ngokwenza ucwaningo ukuthi ungabelana nomakhelwane kanye nabangane bakho ,lokhu kungezeka kubasize . Uma nabo benza ucwaningo, nabo bangabelana nawe ngolwazi lwabo, kuze nawe ungazenzeli ucwaningo .Umphakathi ungaquma ukuthi iyiphi indlela ongayisebenzisa , wonke umuntu angasebenzisa lindlela yokulima.

Resource Material for Homestead Food Gardeners

Chapter 3: Handouts (isiZulu)

- | | |
|-----------|--|
| Handout 1 | Ukuphila kanye nokudla ngendlela efanele (Living and eating well) |
| Handout 2 | Izincomo ezilishumi zokudla ukudla okunomsoco (The 10 food-based dietary guidelines) |
| Handout 3 | Ukugcina imininingwane yokudla okudliwa ekhaya nsuku zonke (What did we eat today?) |
| Handout 4 | Engihlela ukukutshala kulelo nalelo sonto (Planting Plan) |

1. Ukuphila kanye nokudla ngendlela efanele



KUYINI UKONDLLEKA KAHLE?

Sonke siyakudinga ukudla. Imizimba yethu idinga ukudla ukuze ihlale iphilile, ibe nomfutho futhi ikhule ibuye ikwazi ukwelapheka uma igula. Ukudla esikudlayo kusetshenziswa imizimba yethu ngezindlela ezahlukene. Izingxenye ezahlukene zokudla esikudlayo zisetshenziselwa izingxenye ezahlukahlukene emizimbeni yethu njengokusinika amandla nokusisiza ezifeni ukuze sihlale siphilile.

Sidinga ukudla okuningi okunhlobonhlobo futhi okunempilo ukuze imizimba yethu izokuthola konke ekudingayo. Uma sidla kahle sisemathubeni angcono okuphila kahle futhi siphile impilo engcono.

Kunconyiwe ukuba umntwana ancele ubisi lukamama kuphela. Abantwana bathola konke abakudingayo obisini lukamama.

Izingane kudingeka ukuba zidle imifino nezithelo ukuze zihlale ziphilile. Kudingeka futhi ukuthi zidle ukudla okuzobasiza ukuba bakhule okunje namaqanda, ushizi, inyama, ibhotela lamantongomane, ubhontshisi, ama "lentils" kanye nobhontshisi okuthiwa yi Soya, Izingane ezincane kumele zihle kahlanu ngosuku.

Abantu abadala kudingeka ukuba badle ukudla okuningi okunhlobonhlobo ukuze imizimba yabo ihlale isebenza ngendlela ekahle. Kubalulekile kakhulu ukwenza lokhu ikakhulukazi uma ugula noma ukhulelelwe.

Singadla kanjani ngendlela efanele ukuze siphile kahle?

Ukudla ngendlela efanele kusho ukudla izinhlobo ezahlukene zokudla ukuze umzimba uthole konke okuhle okukudingayo. Lokhu akusho ukuthi kumele uthenge ukudla okubizayo. Ngokucabangisisa kahle ngalokho okudlayo, nalokho ozokulungisela umndeni wakho, kanye nokukhetha kahle ukudla ungakwazi ukudla ukudla okufanele nsuku zonke ngendlela engembi eqolo.

Kunezinhlobo ezintathu ezibalulekile zokudla:

- ❖ Okukunika amandla (Go Foods)
- ❖ Okukhulisa umzimba (Grow foods) kanye
- ❖ Nokusivikela ezifeni (Glow foods).

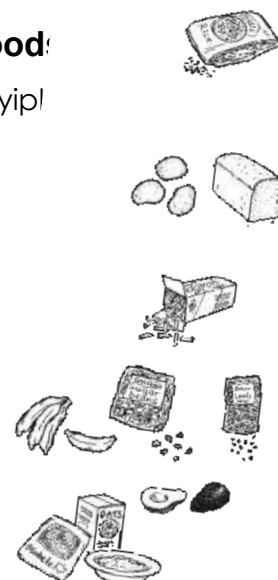
Kumele udle ukudla okunakho kokuthathu okungenhla nsuku zonke. Kufanele futhi uphuze izingilazi zamanzi ezingu 8 ngosuku nsukuzonke.

Ukudla okusinika amandla (Go Food):



Ukudla okusinika amandla (Good energy/Go Food):

Ubhatata; Amazambane noma ngabe alungiswe ngayip!
 Ilayisi elinsundu noma elimhlophe
 Imacaroni noma ispagethi
 Isinkwa
 Ubhontshisi owomile noma uphizi
 Ukudla okuyo "oats"; Amabele
 Amacereal (ukudla kokwenza idokwe)
 Ukwatapeya
 Ubhanana



Ukudla okukhulisa umzimba nezicubu (Grow Food)



Lolu wuhlobo lokudla olunama “protein” amaningi. Loluhlobo lokudla lugcina umzimba wakheke kahle futhi lusiza umzimba ukuthi ube nezicubu ezomelele. Luyasiza futhi ekuvikeleni umzimba ekuhlaselweni yizifo. Kubalulekile ukuthi udle ukudla okukhulisa mzimba nsuku zonke ikakhulukazi uma ugula. Izingane zidinga ukudla okunamaprotein amaningi ngoba zisakhula. Nakanjalo nabesifazane abakhulelwe.

Izinhlobo zokudla okwakha umzimba

Ubhontshisi

Uphizi

Undumbanjane (Soyabeans)

Amantongomane

Inyama yenkukhu

Isibindi senkukhu

Inyama yenhlanzi

Inyama ebomvu

Amaqanda

Ushizi

Amasi

Ibhotela lamakinati (peanut butter)

Ama - nati akhiwa esihlahleni

Ujikanelanga noma ubhekilanga



Amaqanda mahle kakhulu ezinganeni nakwabesifazane abakhulelwe, njengoba enama “protein”, amavithamini, amafutha, nesiqinisamathambo (calcium).

Izingane zingadla nobhontshisi noma uphizi nsuku zonke.

Kuncomekile ukuthi izingane ziphakekelwe ukudla okuncane kodwa izikhathi eziningi ngosku.

Ukudla okwenziwe ngelayisi elinsundu nobhontshisi kunomsoco kakhulu kunenyama! Ilayisi elinsundu liyinto eyodwa nelayisi elimhlophe umahluko kuphela ukuthi elinsundu alingasuswanga isikhumba. Lokhu kusho ukuthi leli elinsundu linama protein, amaminerali kanye namavithamini amaningi kunaleli elimhlophe.

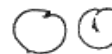
Ukudla okusivikela ezifeni (Glow Foods)



Loluhlobo lokudla ukudla okusiza ekulweni nezifo ezihlasela imizimba yethu. Lokhu ukudla okunamavithamini kanye namaminerali amaningi. Kumele udle izinhlobo eziningi ezahlukene zokudla okusivikela ezifweni ngoba zonke zinibuhle bazo ngokwehlukana kwazo.

Izinhlobo zokudla okusivikela ezifweni

Ama - olinshi,, Ama "grape fruits"
 Amagilebhisi noma Umvini (grapes)
 Ubhanana
 Amagranadela
 Amapentshisi aphuzi, Amabhilikosi (apricots)
 Ama – aphula, Amaganandoda (pears)
 Ulamula (lemon),
 Uphayinaphula
 Isipinashi
 Utamatisi
 Amazambane
 Ubrokholi
 Amaqabunga amathanga
 Iziqathi (Carrots)
 Ubhontshisi oluhlaza
 Uphizi
 Umbila
 Ubhitrudi
 Ukwatapheya
 I stambu



Khumbula ukugeza izithelo nemifino kahle ngaphambi kokuba uzidle ngamanzi ahlanzekile.

Imifino enamaqabunga aluhlaza nezithelo eziphuzi kubalulekile ezinganeni.

Izingane kanyenabesifazane abakhulelwe kubaluleki ukuba badlelokudla nsuku zonke.

Imbuya, Amarabha
(Rape)



Izaluleko zokuphepha ezibalulekile

Njalo kumele ugeze izandla zakho ngensipho nangamanzi ngaphambi kokuba uthinte ukudla nangemuva kokuya endlini yangasese.

Geza izandla zakho nhlangothi zomabili uthathe isikhashana ngokubala ka uze ufike ku15 ngesikhathi ugeza.

Bopha izilonda noma wemboze lapho ulimele khona ngaso sonke isikhathi lapho upheka noma unikeza abantu ukudla.

Ukukhetha nokulungisa ukudla ozokuphekwa

Phuza amanzi kakhulu

Udinga okungenani amanzi angamaglaz i ayisishiyagalombili ngosuku. Kumbé awuzukucabanga ukuthi udinga amanzi angaka. Kodwa ungazama uzibonele ngokwakho. Phuza amaglas amanzi ayisishiyagalombili ngosuku izinsuku ezintathu zilandelana. Lokhu akuhlanganisi iukuphuza itiye noma ikhofi. Ngemuva kwalezonsuku ezintathu, uzizwa njani? Ngabe uzizwa unomdlandla



noma uphile kahle?

Isixwayiso esiphephile sokudla.

Amanzi ompompi aphephile. Uma usebenzisa amanzi omfula noma ipitsi kumele uwabilise noma ufake i – tea spuni likajikhi emanzini angango 25litha ngaphambi kokuba uwaphuze. Gcina amazi akho esitsheni esihlanzekile.



2. Izincomo ezilishumi zokudla ukudla okunomsoco

1. Thokozela ukudla okunhlobonhlobo

- ❖ Yidla ukudla okunhlobonhlobo okunezondlo ezinhlobonhlobo
- ❖ Qikelela indlela okupheka ngayo ukudla kwakho
- ❖ Kugweme ukudla ukudla ukunezondlo ezincane nalokho okungakuniki umdlandla owenele
- ❖ Kugweme ukuphila impilo engakuholela ezifeni ezingamahlalakhona (chronic disease).

*Kufanele udle ukudla okuhlukahlukeni okungu
20 kuya ku 30 esontweni ngalinye*

2. Yina ngumuntu ojwayele ukunyakazisa umzimba

- ❖ Zijwayeze ukuthi uvamise ukuyakazisa umzimba nsuku zonke isikhathi esingaba yimizuzu engamashumi.
- ❖ Lokhu kuyakuvikela kumahlalakhona (chronic diseases, noma izifo ezikuphatha isikhathi eside, ogcina uphila nazo) anjenge "hayihayi", isifo sikashukela, isifo senhliziyo kanye nomdlavuza.

Nyakazisa umzisa izikhathi eziyimizuzu engamashumi amathathu cishe nsuku zonke

3. Akungenzeki kungabibikho ukudla okunesitashi ekudleni okudlayo

- ❖ Yidla ukudla okusanhlamvu (cereals) kanye namaveji ayizimpande (root vegetables) kunjengoba kuvela ensimini kungaphekiwe noma kuphekwe nje kancane. Lokhukudla kunomhadlalahadliso (fibre) omningi. Kanti futhi lokhukudla kunawo futhi umsoco (micro nutrients), amafutha kanye namaprotein.
- ❖ Abesifazane abadala kufanele bathole lokhukudla okungu 260gram/ngosuku (ipuleti elijwayelekile), bese kuthi abesilisa banikezwe okungango 325gram/ngosuku (ipuleti eliqongile) ukuze bathole umfutho owenele.

Yilowo nalowo muntu omdala kufanele athole u 50 gram/wesitashi ngosuku (cishe okungangenkomishi)

4. Yidla amaveji amaningi kanye nezithelo eziningi ngosuku, nsukuzonke

- ❖ Yidla izithelo ezisa olintshi (citrus), u anyanisi, u-garlic, ukherothi noma izaqathi kanye notamatisi (ngoba kuno vitamin C no A omningi) kanye nokudla okusakhabishi (crucifers) okunjenge khabishi, kale, u-broccoli kanye no kholiflawwa.
- ❖ Yidla ukudla ukudla okunamacembe aluhlaza ngokujulile kanye nanombala osa-olintshi.
- ❖ Kufanele umuntu omdala athole izinxenyanana ezinhlanu noma u-400gram/ngosuku zalokhukudla

Yidla izithelo ezimbili kanye namaveji amahlanu ngosuku

5. Ukuze impilo ibe yinhle kakhulu, kumele kudliwe ukudla okusabhontshisi okuthe xaxa

- ❖ Yidla ubhontshisi owomile, uphizi, ama"lentils", kanye ne "soy" njalo nje
- ❖ Grain legumes are beans, lentils, cowpeas, chickpeas, peas, etc.
- ❖ Izimbewu ezinowoyela, njenge "soya" kanye namantongomane esinye isibonelo.
- ❖ Lokhu kwenza ukuthi umzimba uthole lezizondlo ezilandelayo: amaprotein, ama"carbohydrates" I "fibre" noma umhadlahadliso, amavitamini kanye nama "minerali".

Umuntu omdala kufanele adle amagram ayikhulu kuya emakhulwini amabili (100-200gram) okudla okusabhontshisi (legumes) ngosuku. Lokhu kusho inxenye yenkomishi.

6. Ukudla okuvela ezilwaneni kungadliwa nsuku zonke

- ❖ Lokhu kusho lokhu okulandelayo: inyama, inhlanzi, inyama yenkukhu, ubisi kanye namaqanda.
- ❖ Ngaphandle kokuthi lokhu kudla kunika amaprotein, kuphinde futhi kondle umzimba bge "calcium", "iron" noma insimbi, I "zinc", kanye ne "omega-3" nama "fatty acids".
- ❖ Yidla ukudla okungenawo amafutha kakhulu kanti futhi akumele ube ngumngane awo amafuthe.
- ❖ Thatha imbijana yalokhukudla okuvela ezilwaneni, ukufake esidlweni sakho esenziwe ngezitshalo.

Thatha isilinganiso esingu 400-500ml wokudla okwenziwe ngobisi/ngosuku (okunjengo bisii, iyogathi, amasi, ishizi...)

Yidla mamqanda amane ngesonto

Yidla ukudla okunenhlanzi kabili noma kathathu ngesonto

NOMA

Akufuneki ukuthi udle inyama ebomvu noma yenkukhu engaphezulu kuka 560 grams ngesonto

7. Akufuneki udle ukudla okunamafutha kakhulu

- ❖ Awangabi maningi amafutha enyama owadlayo, kanjalo futhi nasobisi okungelona lwenkomo.

8. Ungabowudla usawoti omningi

- ❖ Ukudla kakhulu usawoti kungaholela ekutheni uzithole usunehayihayi. Uma ungumuntu one "hayihayi" kufanele udle ukudla okunamaveji amaningi kanye nezithelo. Uma wenze lokho isikhathi esingangamasonto ayisishiyagalombili, umfutho wegazi emzimbeni odala l"hayihayi" uyehla.

Wufafaze usawoti, ungawuxukuzi

9. Amanzi, ngesinye isondlo somzimba esinganakekile








Phuza okungenani amalitha amabili ngosuku

10. Uma ungumuntu ophuza uphuzo oludakayo, phuza ngokuzicabangela.

[illegible]

Resource Material for Homestead Food Gardeners

Chapter 3 Handout 3

			Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincane	Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincane	Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincane
UKUDLA OKUNIKEZA AMANDLA (Go Foods - ukudla okune - starch)	ummbila, amazambane, ubhatata, uphuthu	Inkomishi eyodwa nohhafu kuya kwezimbili ngosuku									
											
											
UKUDLA OKUKHULISA IZICUBU (Grow Foods - ukudla okunamaprotein)	Ubisi, amasi, amaqanda, umnyama, inkhuku, ubhontshisi, uphizi, amakinati	Inkomishi eyodwa ngosuku									
											
											
UKUDLA OKUVIKELA EZIFENI (Glow Foods - njengamaveji nezithelo)	Vit C, Vit A ikharothi, ubhatata, ithanga, imifino, ispinashi, utamatfisi, ugreen peppa, ama- oranges, upapaya,	izinkomishi ezimbili ngosuku									
											
											
	vitamins and minerals Noma iluphi uhlobo lwamaveji ukhabishi, uanyanisi, green beans, lettuce, beetroot	Izinkomishi ezintathu kuya kwezinhlanu ngosuku									
											
Amafutha no oyela: u oyela kabhekilanga, ibhotela, imajirini, amafutha avela ezilwaneni											
Ushukela, izicimakoma njenge Coke kanye neSweetAid; amakheke, amaswidii											

Engihlela ukukutshala kulelo nalelo sonto																			
		Umhlaka																	
		Isondo	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
UKUDLA OKUNIKA AMANDLA (Go Foods - starch)	ummbila, amazambane, ubhatata, uphutu	isitshalo																	
		isitshalo																	
		isitshalo																	
		isitshalo																	
UKUDLA OKUKHULISA IZICUBHU (Grow Foods - okunama - protein)	Ubhontshisi, uphizi, amankinate, izindlubu, imbumba...	isitshalo																	
		isitshalo																	
		isitshalo																	
		isitshalo																	
UKUDLA OKUYIKELA EZIFENI (Grow Foods - niengamaveji nezithelo)	Noma iuphi untabo lwesithelo noma iuphi untabo wamaveji	isitshalo	Ikhazothi; Cape Market			Ikhazothi; Cape Market				Ikhazothi; Cape Market				Ikhazothi; Cape Market				Ikhazothi; Cape Market	
		isitshalo																	
		isitshalo																	
		isitshalo																	
	Ukhabishi, uGreen beans, ulethisi, ubeetrooti,	isitshalo																	
		isitshalo																	
		isitshalo																	
		isitshalo																	

Resource Material for Homestead Food Gardeners

Chapter 4: Handouts (isiZulu)

- | | |
|-----------|---|
| Handout 1 | Ukutshala izitshalo ezinhlobonhlobo engadini (Mixed cropping) |
| Handout 2 | Ukushinshanisa izitshalo engadini (Crop rotation) |
| Handout 3 | Lwezinye zezitshalo, ezisiza ekwakheni amakhambi kanye nezichazelo zokuthi asetshenziswa kanjani nokuthi alungiswa kanjani (Some plant remedies for pest and disease control, how the remedy is prepared and what it is used for) |
| Handout 4 | Ukubekwa kwezimbewu (Seed saving) |
| Handout 5 | Ukutshalwa kwezihlahla zezithelo (Growing fruit trees) |
| Handout 6 | Ukukhiqizwa Kwezihlahla Zezithelo (Pruning Fruit Trees) |
| Handout 7 | Ama "Tower Gardens" |
| Handout 8 | Ukukhiqizwa kwezithelo – Ukwandiswa kwezitshalo (Making cuttings) |

1. Ukutshala izitshalo ezinhlobonhlobo engadini

Singathanda ukuthi sibone ezingadini zethu kutshalwe izinhlobonhlobo zezitshalo, uma kungenzeka. Izinhlobonhlobo zezitshalo engadini zenza sibe nesiqiniseko sokuthi izingadi zethu ziqukethe konke okudingekayo ngokwemvelo (natural balance). Lokhu kubandakanya ukwenza umhlabathi wethu ube ngophile kahle, amanzi asebenziseke ngendlela efanele, kwehliseke nezinga lezinambuzane/lezilokazane kanye nezifo ezihlasela izitshalo zethu.

Lokhu kuchaza ukuthi eplothini iyinye sizobona kutshalwe izinhlobonhlobo zezitshalo. Izitshalo zingatshalwa ndawonye eplotini ngesikhathi esisodwa (inter planting), noma kungatshalwa izitshalo ngendlela yokushintshanisa (rotation). Lokhu kuchaza ukuthi izinhlobonhlobo zezitshalo ziyatshalwa lapha ngezikhathi ezahlukeneyo. Ukusebenzisa zombili lezindlela - ukutshala izitshala ezinhlobonhlobo ndawonye (inter- planting) kanye nokushintshaniswa kwezitshalo olunye uhlobo emuva kolunye (rotation) kungumbono omuhle.

Ukutshala izitshalo ezinhlobonhlobo ndawonye ngesikhathi esisodwa

Uma utshala izinhlobo nhlobo zezitshalo ndawonye kufanele uqikelele lokhu okulandelayo:

- ❖ **Ukusebenziseka komsoco osenhlabathini:** Sixuba ndawonye isitshalo ezinezidingo ezahlukeneyo zezondlo. Ezinye zalezitshalo zidla kakhulu (heavy feeders), ezinye azidli kakhulu (light feeders) kanti ezinye zazo zondla inhlabathi ngokufaka isikhuthaza (nitrogen) enhlabathini. Isibonelo esikahle salokhu yindlela endala yokutshala ubhontshisi nommbila ndawonye. Ummbila udla kakhulu bese kuthi ubhontshisi ube yisitshalo esingadli kakhulu ubuye futhi wondle umhlabathi ngesikhuthaza
- ❖ **Ukujula kwezimpande:** Tshala lezozitshalo ezinezimpande ezijulile ndawonye nalezozitshalo ezinezimpande ezingajulile ukuze uqinisekise ukuthi azibangisani ngamanzi nangomsoco. Izibonelo esihle kulokhu ukutshala ummbila ndawonye nezintanga. Ummbila ukhula ubheke phezulu kanti futhi unezimpende ezijulile, kanti izintanga izitshalo ezenabayo futhi ezinezimpande ezingajulile. Lezizitshalo azibangisani ngendawo ezikhulela kuyona ngaphansi kanye nangaphezulu
- ❖ **Izitshalo ezixosha izinambuzane:** Kukhona izitshalo ezinephunga elixakayo elingathandwa yizinambuzane, lokhu kwenze izinambuzane zibaleke. Ngokwesibonelo, u-anyanisi unephunga elikhethekile elingathandwa yizimvemvane. Uma ngabe u-anyanisi utshalwe ndawonye ne khabishi, kungehlisa inkinga yezibungu ezilihlaselayo. Izitshalo ezitshalwa ndawonye

ngenhloso ethile ezinjengo-anyanisi kanye ne khabishi zibizwa ngokuthi ngama “*companion plants*”. Loluhlelo lokutshala olubizwa nge “*companion planting*” yilona oluhle kakhulu ekuxosheni izinambuzane nezilokazane engadini.

- ❖ **Ukuqondanisa nesikhathi esithile:** Ezinye izinhlobo zezitshalo ziphila isikhathi eside kunezinye. Kungenzeka ukuthi umuntu atshale isitshalo esishesha sivuthwe phakathi kwezitshalo ezephuzayo ukuvuthwa. Ngalandlela ungakwazi ukuthola isivuno engadini noma ensimini lapho olunye uhlobo lwesilimo lusaqhubeka nokukhula kuleyondawo ovuna kuyona. Izinga lokubangisana kwezilimo ngomsoco namanzi liyehla. Isibonelo ukutshala I “radish”, I “mustard spinach” noma umasihlalisane kanye namazambane ndawonye. I “radish” ishesha ivuthwe kanti ingavunwa emasontweni ayisithupha itshaliwe. Amaqabunga e “mustard spinach” ayaqala ukukhiwa ezinyangeni ezimbili kuya kwezintathu. Lokhu kunciphisa umncintiswano futhi njengoba amazambane esezosala wodwa ensimini, futhi esebonakala ekhulile. Amazambane avunwa emuva kwezinyanga ezintathu nesigamu kuya kwezine. Lokhukutshala ngokuhlanganisa kusiza ekuqikeleleni ukujula kwezimpande, ukusetshenziswa komsoco (nutrient consumption) kanye nasekuxosheni izinambuzane.
- ❖ **Ukumelana nethunzi:** Kubalulekile ukuqikelela lokhu uma engadini kutshalwe izitshalo eziphekeme kanye nalezo eziphila isikhathi eside (perennial plants). Lokhu kubandakanya izihlahla zezithelo. Izitshalo ezifana ne “confrey”, u “lettuce” noma uletisi kanye nama strobhisi (strawberries) ziyakwazi ukumelana nethunzi. Lokhu kuchaza ukuthi zingakwazi ukukhula noma zingaphansi kwezihlahla.

Izibonelo zokutshala izitshalo phakathi kwezinye engadini yama veji

Embhedeni

Tshala u-anyanisi ndawonye nokherothi: Ukherothi uvikela u-anyanisi ukuthi ungahlaselwa yimpukane ebizwa ngokuthi yi “Onion fly” kanti u-anyanisi uvikela ukherothi ukuthi ungahlaselwa yimpukane ebizwa ngokuthi yi “carrot fly”. U kherothi unezimpende ezijulajulile kuno-anyanisi kanti ushesha uvunwe kuno-anyanisi, bese unikeza u-anyanisi uma usuvuniwe isikhala esanele sokuthi ukhule kahle uma ususele wodwa.

Tshala ukholiflawwa noma ikhabishi, uletisi, I“fennel” (imbozisi) kanye no-anyanisi ndawonye: Lenhlanganisela yokutshala ivikela ngokuphelele izitshalo zakho kwizintwala zekhabishi, nakwi “diamond black moth” (ibhu elikhonjisiwe esithombeni) elihlasela ukholiflawwa. Lendlela iyakuqikelela ukusebenziseka komsoco (nutrient consumption), ukujula kwezimpande, ukuxoshwa kwezinambuzane (kwenziwa ngu anyanisi nembozisi), ukuqondanisa nezikhathi ezithile (timing) kanye nokumelana nethunzi



kwezitshalo.

Tshala uTamatisi, u anyanisi noma ugalikhi kanye no kherothi ndawonye: Lokhu kubandakanya izitshalo ezixosha izinambuzane, indlela izitshalo ezisebenzisa ngayo umsoco (nutrient consumption) ukujula kwezimpande kanye nokulwa nezifo zezitshalo. Utamatisi lapha utshalwa ugqagqane ukuze izitshalo zingathintani. Lokhu kwenza ukuthi umakufika izifo ezifana ne “early blight” noma “late blight” zingalokothi zigijime kalula kuzo zonke izitshalo.

Tshala isipinashi (swiss chard) kanye nobhontshisi ndawonye: Lendlela iqikelela indlela umsoco osetshenziswa ngayo, ukujula kwezimpande, kanye nokulwa nezifo ezihlasela ispinashi. Ukutshala imigqa yespinashi uyigejanise nemigqa kabhontshisi kwehlisa izinga lokuhlaseleka kwespinashi yisifo esibizwa ngokuthi yi “bacterial spot” esihlasela amaqabunga espinach.



← *Ispinashi utshaliwe nembozisa no galikhi*

Uanhanise utshaliwe nekhlabishi, uletisi nespiniashi. →



Ukutshala inxubevange yezitshalo engadini:

Kukhona izitshalo ezingenankinga uma zitshalwe ndawonye, kanti ezinye azihlalelani. Uma utshala izithombo embhedeni, sebenzisa lezizithombe ezilandelayo ukuze ukwazi ukubona ukuthi yiziphi izitshalo ongazitshala ndawonye futhi ungabinankinga.

Ezinye zezitshalo ongazitshala ndawonye:

Ubhithirudi	-	anyanisi
Ukherothi	-	uphizi, uletisi, anyanisi, utamatisi
Anyanisi	-	ubhithiruthi, amastrobhisi (strawberries), tamatisi, letisi
Ubhilingjolo	-	u bhontshisi
Ikhhabishi	-	amazambane, ubhithiruthi, u-anyanisi
U Green pepper	-	uzwana nawo onke amaveji
U Letisi	-	ukherothi, u "radish", amastrobhisi, ukhukhumba (cucumber)
Amathanga	-	ummbila
Spinashi	-	amastrobhisi
Utamatisi	-	anyanisi, ukherothi
Ummbila	-	amantongomane, uphizi, ubhontshisi, ukhukhumba, amathanga, amazambane
Ujikanelanga	-	ukhukhumba
Ubhontshisi	-	amazambane, ikhabishi, lanye nezinye izinhlobo zamaveji



ukherothi,

Izitshalo okungeke kulunge ukuthi zitshalwe ndawonye:

Zikhona ke lezo zitshalo ezingeke ziphilisane kahle uma sitshalwe endaweni eyodwa. Zama ukugwema ukuthi uzibone usuxuba lezizitshalo endaweni. Zihlolele ngokwakho ukuthi ziyaphilisana na lezizitshalo.

Ubhithiruthi	-	ubhontshisi obizwa ngokuthi yi "pole beans"
Anyanisi	-	uphizi noma ubhontshisi
Ikhhabishi	-	amastrobhisi
Amathanga	-	amazambane
UTamatisi	-	amazambane kanye ne khabishi
Ubhontshisi	-	anyanisi
Ujikanelanga	-	amazambane



Ubuhle nobubi bokutshala izitshala ezinhlobonhlobo ndawonye

UBUHLE BAKHO	UBUBI BAKHO
Indawo yokutshala phezulu naphansi isebenziseka ngendlela efanele nangokuphelele	Kubukeka kabi
Yehlisa izinga lezifo nezinambuzane ezitholakala enhlabathini nasezitshalweni, futhi ikunqande lokhu kungandi	Ingenza kube nzinyana ukudayisa umkhiqizo
Yehlisa izinga lokuhlushwa ukhula	Ezinye izitshalo kungenzela ukuthi sezisithekile, ikakhulukazi uma zingagqagqene ngendlela
Kwemboza inhlabathi yonke futhi isebenzise nomsoco ngendlela efanele. Lokhu kuholela ekutheni kwakheke inhlabathi ephilile nenomsoco	Ukuhlakulela kungadla isikhathi esiningi uma usaqala, njengoba izitshalo zisuke zisagqagqene, uma uqhathanisa nanxa kutshalwe kolayini
Izitshalo ziyaxhasana, zondlane futhi zivikelane nasezifeni kanye nasezinambuzaneni. Lokhu kuholele ekutheni izitshalo zikhule ngomfutho omkhulu.	Ungathola ukuthi ezinye izitshalo zingancinsheka amanzi, kuthi ezinye ziwathole mawala, kuye nendlela ezikhula ngayo. Ngokwesibonelo ezinye izitshalo kungenzeka ukuthi seziyaqhakaza sezizosakaza imbewu entsha kanti ezinye yima zisakhula
Amanzi asebenziseka kahle kakhulu	

Izinguquko esingazenza ngokutshala ngendlela exubile

Ukuze kuhlale kukhona okukhona engadini: Sifuna ukuthi sihlale sinokuthize esingahlala sikuvuna engadini unyaka wonke. (Sidinga ukuthi silinde isikhathi eside ngaphambi kokuthi sikwazi ukuvuna ikhabishi noma isipinashi) Singabandakanya izitshalo ezifana nalezi ezilandelayo:

- ❖ U-anyanisi oxhantayo (Spring onions) - Ugalikhi (Garlic chives)
- ❖ Ishaladi (Leeks) - Parsley
- ❖ Coriander - imbozisa (Fennel)
- ❖ Uletisi (Lettuce) - Kale, Broccoli, Cauliflower
- ❖ Masihlalisane (Mustard spinach) -
- ❖ Sweet potato (ubhatata – kanjalo nalowo obomvana ngaphakathi ngoba unovithamin A)

Ukuze kutholakale amaprotein: Sifuna ukuthi sibe nezitshalo ezizosondla ngamaprotein, ikakhulukazi kubantwana abancane (iminyaka 1 – 5 ubudala).

Singabandakanya izitshalo ezifana nalezi ezilandelayo:

- ❖ Turnip green
- ❖ Imbumba (Cowpeas)
- ❖ Uphizi (Peas)
- Sugar beans, izindlubu (jugo beans)
- Amantongomane (Peanuts)

Kufanele ukuthi ekulimeni kwethu sibuye sibe nemfuyo efana nezinkukhu, amadada, onogwaja, izimbuzi nezingulube, ngoba nenyama yazo isinikeza amaprotein.

Ukuze kutholakale u-vitamin c no vitamin a: sifuna ukuthi sikhale sidla izithelo eziluhlaza neziphuzi nsuku zonke. Lesisondlo sibaluleke kakhulu kubantwana kanye nakulabo abagulayo. Singabandakanya izitshalo ezifana nalezi ezilandelayo:

- ❖ Tree tomato (*isithombe kwesokudla*)
- ❖ Granadilla, uGqumgqum (gooseberry)
- ❖ Upopo, umango, ubhanana, ukwatapeya
- ❖ Amapetshisi, amabhilikosi, ulamula-Amagwava
- ❖ Ama bhathanathi, nezinhlobo ezahlukene zamathanga



Kufanele ukuthi kube nezinhlobo nhlobo zezithelo ekhaya ukuze kuhlale kudliwa izithelo ekhaya unyaka wonke.

Ukomisa izithelo namaveji

Ukulungisa ukudla ngalendlela kwenza ukuthi kube nesiqinisekiso sokuthi kuhlala kukhona ukudla ekhaya ngaso sonke isikhathi.

Indlela yokusebenzisa amashalofana okomisa (drying racks) ambozwe ngofefe (shade cloth) yiyona ekahle ngempela (*njengoba sibona esithombeni*). Cishe noma yini ungakwazi ukuyomisa!! (Lokhu kwacwaningwa esizindeneni zikaHulumeni socwanigo e Dundee – Dundee Agricultural Research Station)

Isithombe esingenhla kwesokudla: Kukhonjiswa ishalofu eleneke amaveji nazithelo ezomiswa ezinjengotamatisi, ubhilijolo, amanantshi, kanye nabopelepe abaluhlaza, abaliphuzi kanye nababomvu. Lomkhiqizo owomiswa wembozwa ngenethi ukuze kuqinisekise inhlanzeko ngaphambi kokuthi kusetshenziswe.



Amaveji omisiwe angagcineka iminyaka emibili nangaphezulu ngaphambi kokuthi asetshenziswe.

Isithombe esingezansi kwesokudla: Amabhodlela okufakwe kuwona amaveji omisiwe, kusukela kwesobunxele uphepha, ubhatata, upelepele ogayiwe, kanye nobhilijolo.



2. Ukushinshanisa izitshalo engadini

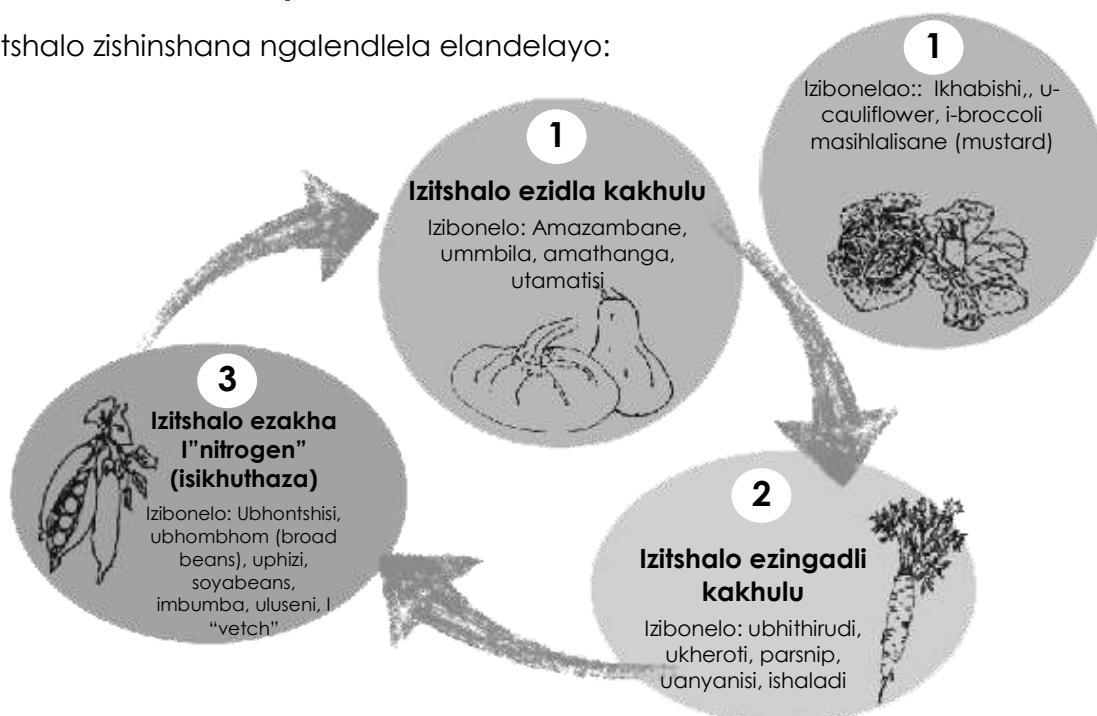
Lapha sichaza ukuthi akufuneki utshale uhlobo lwesitshalo esisodwa endaweni eyodwa iminyaka ilandelayo. Uyaqinisekisa ukuthi itshala isitshalo esehlukile ngonyaka olandelayo. Lokhu kungumqondo omuhle ngoba:

- ❖ Kunqanda ukunqwabelana kwezifo nezinambuzane engadini. Uma utshala uhlobo olulodwa lwesitshalo izifo nezinambuzane ezithile ziyathokoza zigcina sezizwa zisekhaya ngoba ukudla kwazo kuhlala kukhona!
- ❖ Izitshalo ezehlukene zisebenzisa izinhlobo ezehlukene zomsoco ogcinwe enhlabathini. Ngokushinshanisa izitshalo awenzi kusebenziseke uhlobo olulodwa lomsoco enhlabathini olunye uhlobo lomsoco lube kungasebenziseki.
- ❖ Kuhlala kukhona izitshalo engadini unyaka wonke.
- ❖ Ezinye izinhlobo zezitshalo zifaka isikhuthaza (nitrogen) enhlabathini. Isibonelo salezi zitshalo ngu Bhontshisi, uphizi, Ubhombhom (broad beans), isoyabeans kanye ne "Vetch" (isitshalo esifana nophizi esisetshenziselwa ukwenza umanyolo oluhlaza).
- ❖ Kugwema ukuthi inhlabathi ingaze ibe sesimweni sokuthi singezwani nezitshalo ezithile. Isibonelo lapha ukuthi ezinye izinhlabathi zigcina sezinezibungwana ezincane ezibizwa ngama "nematodes", ezenza ukuthi kube lukhuni ukutshala otamatisi nesipinashi kuleyondawo. Lezibungwana ngeke sikwazi ukuzibona ngamehlo enyama. Zihlala enhlabathini kanti ziziphilisa ngokuthi zidle izimpande zezitshalo.
- ❖ Akwenzeki ukuthi sigcine sibona ingadi igcwele ukhula oluthile.

Lapha sizobonisana ngezindlela ezimbili zokushinshanisa izitshalo. Ungazama ukuzihlola zombili ubone ukuthi iyiphi indlela ekusebenzela kangcono.

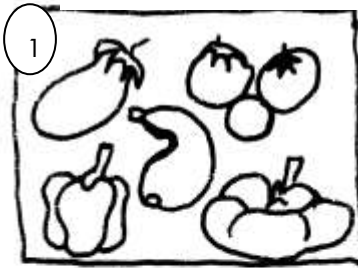
Indlela Yokuqala

Izitshalo zishinshana ngalendlela elandelayo:

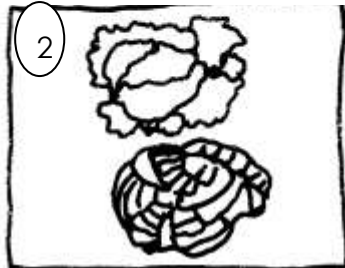


Indlela Yesibili

Ezithela phezulu



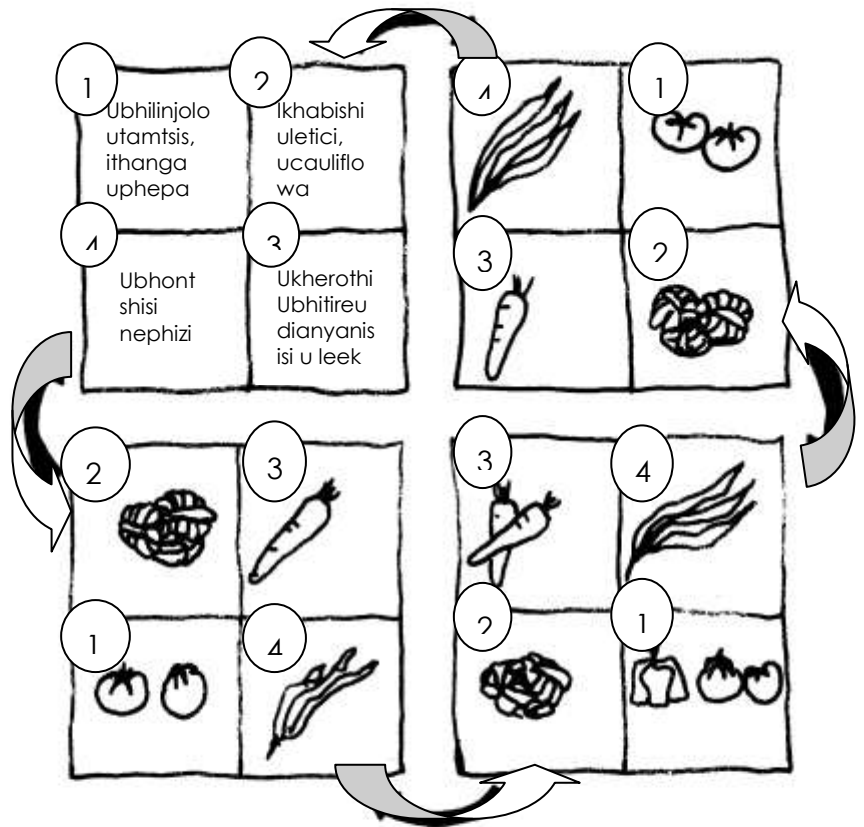
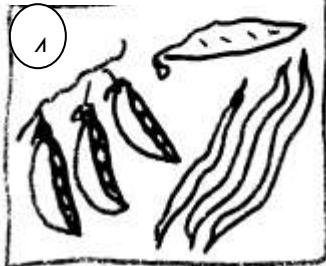
Ezithela ngamaqabunga



Ezithela ngaphansi



Ezine medumba



Ukushinshanisa okulula: ingadi ihlukaniswe amaploti amane alinganayo. Ngesikhathi esilandelayo sokutshala, dlulisela uhlobo lwezilimo eplotini elandelayo.

Lungisa indawo ozotshala kuyo noma umbhede kahle. Faka ikhomposi eningi noma umquba omningi embhedeni wakho (amafosholo amane kwi square metre esisodwa).

Qala ngokuthi utshale isitshalo esithela ngaphezulu (fruiting crop). Lezitshalo zidinga ukudla okuningi. Izitshalo ezithela ngamaqabunga (leaf crops) azikudingi ukudla okuningi, ngakhoke zingalandela ama "fruiting crops". Okulandelayo kungaba yilezo ezithela phansi (root crops) ngaphandle kokuzikhathaza okungakanani ngokuvundisa inhlabathi. Izitshalo ezithela phansi ayawuthanda umhlabathi ovundile kepha aziwudingi umquba osemusha, umquba kumele kube ovuthiwe. Izitshalo

ezisabhontshisi (legumes) zingalandela, kulekelelwe ngokuthi kunezezelwe ngomquba othe xaxa. Emuva kwalokho kumele ulungise indawo olima kuyona kabusha kahle futhi. Qala phansi umjikelezo wakho futhi ngokuthi utshale izitshalo ezithela phezulu (fruiting crops).

Ukulamanisa izitshalo engadini

Ngalokhu sichaza ukuthi kumele utshale imbijana yezitshalo kodwa njalo nje. Lokhu sikwenzela ukuthi sibe nesiqiniseko sokuthi kuhlale kukhona izitshalo engadini esidla kuzo isikhathi eside. Uma sitshala iphakethe lonke lembewu ngesikhathi esisodwa, sizolinda isikhathi sokuvuna, bese sivuna kube kanye sibuye sisonge izandla, kanti lokhu akulungile!!!

Umbono ukuthi uhlukanise iphakethe lakho lembewu izigatshana ezine. Kufanele utshale lezigatshana emasontweni amabili kuya kwamathathu.

Uma sitshala imbijana yembewu ngesikhathi, ungatshala esitsheni ezincane noma emabhokisini. Qinisekisa ukuthi lokho otshala kukho kunezimbobo ngaphansi. Kufanele amanzi akwazi ukuphuma ngaphansi uma kade unisela.

- ❖ Thatha ingxenye eyodwa yesihlabathi, ingxenye eyodwa yekhomposi esefiwe nezingxenye ezimbili zenhlabathi yangaphezulu esefiwe, ukuxube ndawonye.
- ❖ Bulala amagciwane kulenxube ngokuthi uyothele ngamanzi abilayo, bese uyomisa ngaphambi kokuthi utshale imbewu. Lendlela ibulala imbewu yokhula engase ikhuphe kanye nezifo zezitshalo ezitholakala enhlabathini.

Tshala imbewu ngendlela ongatshala ngayo uma utshala embhedeni



3. Lwezinye zezitshalo, ezisiza ekwakheni amakhambi kanye nezichazelo zokuthi asetshenziswa kanjani nokuthi alungiswa kanjani

Inhlaba (aloe)

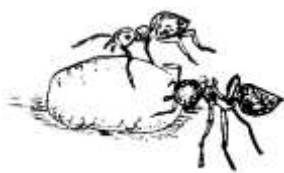
Noma iluphi uhlobo lwenhlaba lungasetshenziswa.

- ❖ Gxoba inhlaba uyifake emanzini isikalo esingango (1:5). Lokhu kusho ukuthi sebenzisa amanzi aphindwe kahlanu kunesikalo senhlaba. Sefa ngendwangu bese ufafaza ngayo. Noma
- ❖ Yomisa amacembe bese uwagaya abeyimpushana. Lokhu kungathintithelwa embewini noma ezitshalweni.



Loluhlobo lokwelapha luqeda lokhu okulandelayo:

Izinambuzane; izintothoviyane nezintethe, izintwala zezitshalo, imiswenya; Izilokazane ezitholakala ezingqolobaneni eziyinkinga emmbileni, kukolo, kanye nasemabeleni; Umuhlwa kanye nezintuthwane.



Ikhambi okuthiwa yi Wormwood noma iLengana

Sika amacembe alelikhambi uwafake emanzini isikalo esingango (1:4) bese ulinda izinsuku ezimbili kuya kweziyisikhombisa (2 – 7 days) ngaphambi kokuba uyisebenzise.



Loluhlobo lokwelapha luqeda lokhu okulandelayo:

Izinambuzane ezejwayelekile kanye neminenke

Ucadolo (blackjack)

Gcwalisa inkomishi egcwele imbewu kacadolo ngamanzi bese ubilisa imizuzu elishumi (10 minutes), noma uma uthanda ungakubilisi, uvele ukuyeke kulale ubusuku bonke. Emuva kwalokho faka ilithat elilodwa lamanzi anensipho bese ufafaza.

Loluhlobo lokwelapha luqeda lokhu okulandelayo:

Izinambuzane: Izintwala zezitshalo, izintuthane, amabhungane, amacimbi, imiswenya, imihlwa, izinhlwabusi kanye ne "white fly".

**Upelepele (chillies)**

- ❖ Qoba upelepele obabayo futhi obomvu uwugcwalise enkomishini (qaphela ungazithinti emehlweni)
- ❖ Faka amalitha amabili amanzi
- ❖ Ungakuyeka lokhu kuhlale emanzini isikhathi esingangezinsuku ezimbili kuya kwezintathu noma ukubilise imizuzu engu 15.
- ❖ Faka uhhafu wenkomishi yensipho ecweciwe bese ukuhlanganisa insipho ize incibilike.
- ❖ Sefa lengxube ukuze ususe amakhafiliti kapelepele
- ❖ Fafaza lomuthi ezitshalweni zakho kanye ngesonto uma izulu libalele.

***Loluhlobo lokwelapha luqeda lokhu okulandelayo:***

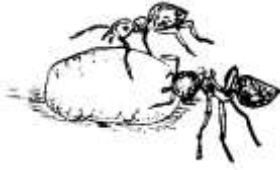
Amacimbi, izintwala zezitshalo kanye

**Ugaliga kanye noanyanisi**

Gxoba izigaqa ezintathu ezinkulu zikagalikhi noma u anyanisi bese uxuba lokhu nezipuni ezimbili zika cooking oil noma uphalafini, ukubeke lokhu izinsuku ezimbili. Xuba lomxube namalitha amabili amanzi anensipho. Lona sekungumxube onamandla kakhulu odinga ukwehliswa amandla. I Litha elilodwa lalomxube lihlanganiswa namalitha alishumi amanzi (1:10). Usungawufafaza ke uma usuhlanganise namanzi.

Loluhlobo lokwelapha luqeda lokhu okulandelayo:

Izinambuzane: Izintwala
zezitshalo, ama "mites",
izibungwana
zenhlabathi
(wireworms), imihlwa
kanye nezintuthwane.



Izifo ezifana ne "leaf spot", "blight" kanye ne "damping off". Ezinye izibonelo isifo esigqwalisa ubhontshisi okuthiwa yi "beans rust" kanye nesifo esibunisa isihlahla sika tamatisi okuthiwa yi "blight".

Amakhambi emvelo

Lamakhambi akhiwa ngezinto ezaziphila ngaphambilini kepha hhayi ngezitshalo. Ezinye zezibonelo yilezi ezilandelayo.

Umlotha wezinkuni (wood ash)

- ❖ Xuba isipuni esisodwa somlotha elitheni elilodwa lamanzi anensipho .Kuyeke ubusuku bonke. Fafaza ukulwa nezinambuzane ngokujwayelekile
- ❖ Xuba isipuni esisodwa somlotha wezinkuni elitheni lamanzi anensipho .Xuba nenkomishi eyodwa yamasi bese ufaka 3 wamalitha wamanzi.

Ukugwema: ukukhunta ezitshalweni kanye nokulwa nezinambuzane

- ❖ Thela umlotha wezinkuni kwisiyingi uzungeze lapho kuqala khona isitshalo sakho bese uthlela kancane emhlabathini .



Ukugwema: Iminenke umswenya kanye nezinye izilokazane

Ufulawa (flour)

Xuba isipuni esikhulu sikafulawa ku 1litha wamanzi .Bhulasha lokhu ecaleni elingaphansi lamacembe lapho izibungu kanye nezintwala zezitshalo

zitholakala . Bhulasha ekuseni elangeni elishisayo

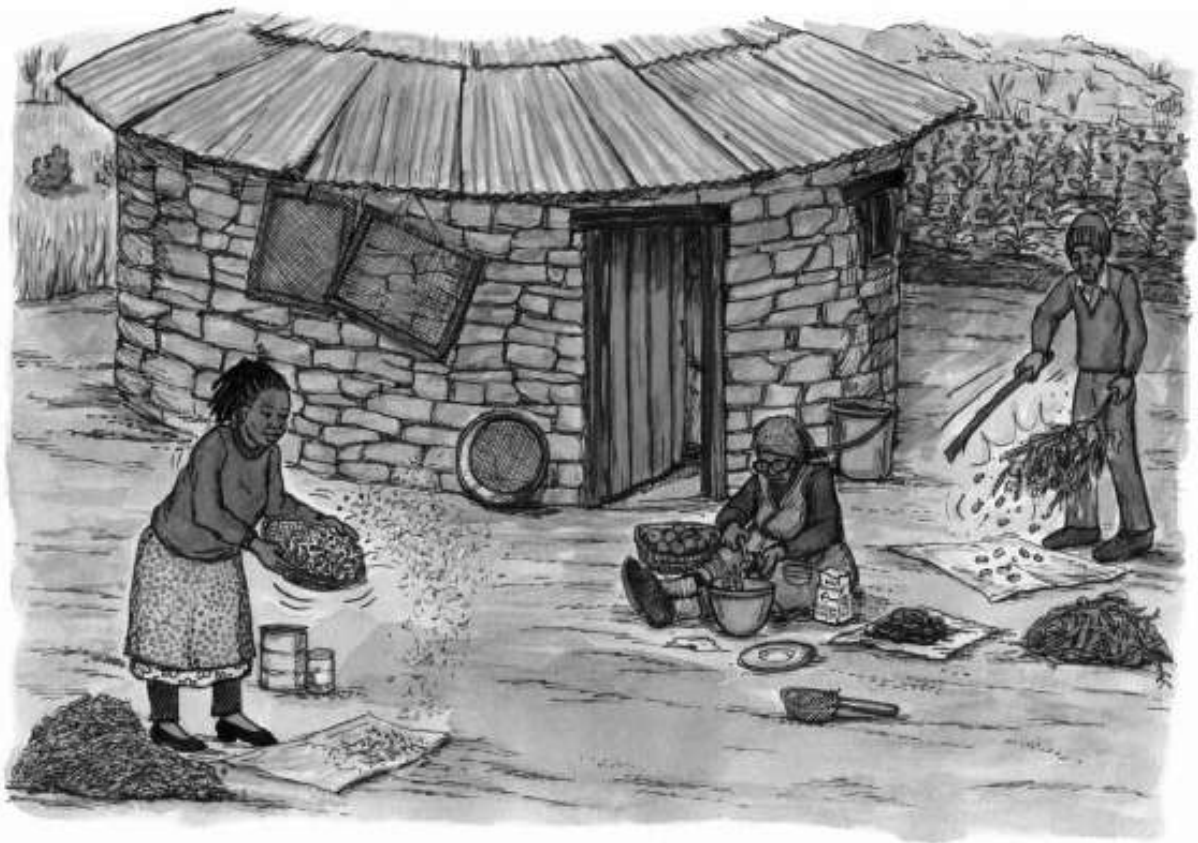


Ukugwema: Izicabucabu ,izibungu ,amacimbi kanye nezintwala zezitshalo .

Ubisi (milk)

Fafaza inxubevane yobisi elingango 1litha emanzini alingana no 10 litha ukugwema izibungu eziyizicabucabu kanye nezifo ezifana nokukhunta emathangeni ,ukusha kutamatisi nasemazambaneni kanye nasegciwaneni eliba kuphepha. Kwenze lokhu njalo ngemuva kwezinsuku eziyishumi.

4. Ukubekwa kwezimbewu



Ukuzigcina imbewu kungumgogodla wokuzimela unguMlimi. Uyakwazi ukuzikhethela ukuthi nhlobo zini zezithsalo ofuna ukuzitshala. Awunasidingo sokuyothenga izimbewu esitolo.

Kunezinhlobonhlobo eziningi zezimbewu ongazigcina zona noma uzithenge esitolo bese ugcina izimbewu emva kwesivuno.

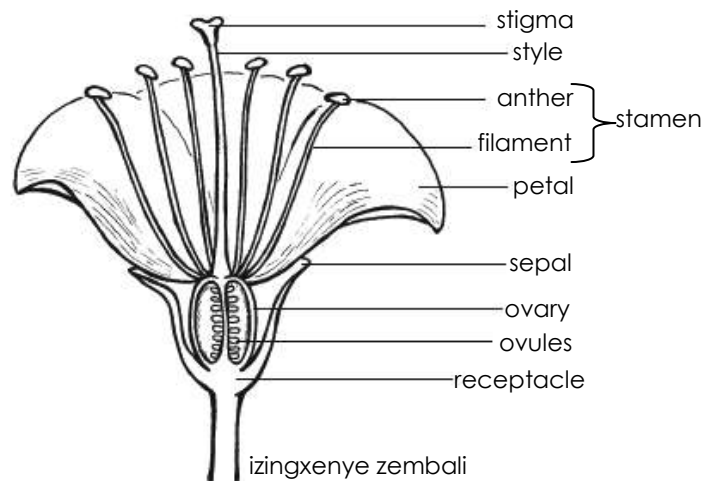
Ukutshala ngembewu ukuze uthole enye imbewu kudlula ezigabeni eziningi okuhlanganisa nokugqunywa kwezithombo, ukutshalwa kwazo kuze kube ukukhetha izitshalo ezinempilo lapho uzovuna khona imbewu yakho.

Izitshalo zikhula zejwayele indawo ezimile kuyo bese zikhiqiza imbewu ekwaziyo ukumelana nezimo zendawo ezikhulele kuyo.

Ukwakheka kwembewu (IPholineshini)

Lena indlela yokukhwelana kwezitshalo lapho impova ephuma engxenyeni yesilisa (stamen) yesitshalo iqathakela noma indizela engxenyeni yesifazane (stigma) yesitshalo. Uma impova seyithubeleze yaze yafika esizalweni sesitshalo kuba sekulumbana bese imbewu yakheka.

Kwezinye izitshalo zinezimbali eziqethe ubulili bobubili embalini eyodwa lezo ke zibizwa ngezimbali eziphelele.



- ❖ Ohlobeni lwezimbali eziphele singabeka eceleni amaKhabe, amathanga, umbila kanye no khukhumba, lezizitshalo zinembali yesilisa neyesifazane ezahlukene esitshalweni esisodwa.
- ❖ Kunezinye izihlahla ezifana ne sikaPopo, zona zinezimbali eyesilisa neyesifazane ezihlahleni ezahlukene.

Izimbewu zemvelo kanye namabhasistela (ezilumbanisiwe ngabantu):

Ngokwemvelo izitshalo zonke zazizizalanela ngokwemvelo, zizandela njengabantu, impova kufanele iwele engxenyeni yesifazane yesitshalo bese zande. Lendlela yokukwanda kwezitshalo isizwa yizimo zemvelo ezinjengomoya kanye nezilwanyazane ikakhulukazi izinyosi.

Amabhasistela alunjani swa abantu ezindaweni ezihlelelwe. Lezizitshalo ngokuvamile azilumbani nezinye. Lokhu kuchaza ukuthi akufanele/ noma angeke ukwazi ukubeka imbewu yalezizitshalo. Imbewu yalezizitshalo ayimili futhi ingakwenzela imihlola ehlukeni. Izitshalo zalezimbewu azifani nhlobo no nina bazo futhi zivamise ukuba ntekenteke.

Lezizimbewu zibonakala ngophawu  ephaketheni lazo.

Ukulumbana ngokwemvelo -imbali eyodwa (Self Pollination)

Lendlela yenzeka lapho impova isuka engxenyeni yesilisa ingena engxenyeni yesifazane embalini eyodwa.

Izitshalo ezilumbana ngaloluhlobo: Utamatisi, ulethisi, Uphepha kanye nobhontshisi wona okwenzeka ngaphambi kokuba imbali ivuleke.

Lezizitshalo zingamila ziminyane ngaphandle kokuba zilumbane nezinye, kodwa kuyinto enhle ukuhlukanisa izimbewu ezahlukene zisitshalo ezifanayo ngoba ukulumbana kusengenzeka.

Izitshalo ezilumbana ngokwemvelo –imbali eyodwa:

Ubhontshisi izinhlobo ezahlukene, Izindumba ,Amakinati, Uphizi, Utamatisi kanye nogrini phepha.



Ukulumbana ngokwemvelo – Izimbali ezahlukene (Cross Pollination)

Kulezizitshalo impova isuka embalini enye iye kwenye imbali esihlahleni esisodwa noma kwezihlukene zohlobo olufanayo. Izitshalo ezilumbana ngaloluhlobo zikhiqiza izimbewu ezikwazi ukumelana kangcono nezimo ezishintshayo zemvelo.

Ukulumbana kwenzeka uma impova ihamba isuka kwenye imbali iya kwenye ngomoya noma izinambuzane ezifana nezinyosi, amalulwane kanye nezinyoni. Izinyosi yizo ezibamba elikhulu iqhaza ekulumbaneni noma ekwandeni kwezitshalo.

Asithathe isibonelo samathanga, uma utshale izinhlobo ezingafani zamathanga ndawonye izimbali zawo zizolumbana bese imbewu yakhona ikhiphe ithanga elimofuzo lwezinhlobo zombili ezazitshaliwe. Kwenzeka kanjena kuzo zonke izitshalo ezilumbana ezimbalini ezahlukene.

Izitshalo ezilumbana ngokwemvelo - izimbali ezahlukene (ngenxa yezinambuzane)

Ubrinjolo, iKabishi, uKherothi, uPelepele, iNtufeshe, uMbila, uAnyanisi kanye neSipinashi.



Izinsiza kwanda/kulumbana kwezitshalo

Izinyosi zidlala indima enkulu ekulumbaneni kwezitshalo ikakhulukazi

amaveji, uma zindiza ziqoqa uju lwezimbali ezenza ngalo olwazo, impova inamathela emilenzeni yazo. Kuthi lapho zidlulela kwenye imbali, impova ibe isisalela esizalweni saleyombali, bese kwenzeka ukulumbana (pollination).

Izitshalo ezilumbaniswa izinambuzane:

Ubrinjolo, iKabishi, uKherothi, uPelepele, uGrini phepha, iNtufeshe, Intufeshe, Ishaladi/itshobho, masihlalisane, uAnyanisi kanye neSipinashi (swiss chard).



Izimila ezisanhlamvu eziningi ezifana nombhila imfe kanye namabele, okusatshani iNyalothi kanye neMihlanga, kanye nezihlahla zincike kakhulu emoyeni ukuze impova yembali enye ifikelele kwenye imbali.

Izitshalo ezilumbaniswa umoya:

Beetroot, iSipinashi (swiss chard), imbuya

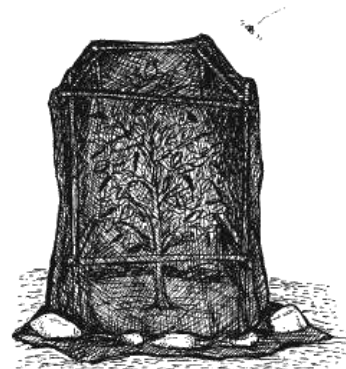


Ukugcina izimila zakho zimsulwa

Noma yisiphi isitshalo esidinga umoya noma izinambuzane ukuze sizalane/siumbane nezinye sidinga ukwehlukaniswa okucacile kwezinye ukuze usigcine zimsulwa ekuhlanganiseni nezinye. Ngezansi kunezindlela ezine zokuzigcina zimsulwa:

Zehlukanise: Hlukanisa izimila zakho ezilumbanayo ngamamitha angengaphansi kuka 500. Lesilinganiso ngesindizwa yezinye zezinambuzane, yize izinyosi zingandiza nangaphezu kwamaKhilomitha amane (4km). Izinto ezivimba umoya nezinambuzane ezifana nezintango kanye nezakhiwo zingasiza ekugcineni izitshalo zakho zimsulwa.

Yehlukanisa ngesikhathi zokutshala: Lokhu ungakwenza ngokuthi lezozitshalo eziqhakaza kanye kanye uzitshale ngesikhathi ezahlukeni, tshala ezinye lithwasa ihlobo ezinye maphakathi ezinye liphela ukuze ziqhakaze ngesikhathi ezingafani.



Ukuzivalela

Ukuzivalela: Lokhu kusiza kakhulu kuzitshalo eziqhakaza isikhathi eside

njengoPelepele kanye neKlabishi. Zivalele ngenethi yenaliyoni ezimbalini zezinlobo ezahlukene bese izilumbanisela wena ngesandla.

Zivalele ngezinsuku ezahlukene: Lendlela ungayisebenzisa ukunokulumbanisa ngesandla. Vala uhlobo oluthize lwesitshalo izinsuku ezimbalwa ube uyekele umoya kanye nezinambuzane zilumbanisa olunye uhlobo ofisa lulumbane. Shintshanisa lokhu ukudedela olwesibili uhlobo ukuba lulumbane nalo(njengokukhwelanisa imfuyo).

Ukukhetha nokuqoqwa kwembewu

Kuthatha isikhathi esingakanani?

Ezonyaka (Annuals):

Lezizitshalo zikhiqhiza izivuno kanye nezimbewu zazo kanye enyakeni bese zifa . zivanise ukuphila isikhathi esifikela ezinyangeni eziyisithupha kuya kweziyisishiyagalolunye (6-9) isibonelo uTamatisi.

Kufanele uvune izithombo eziyisithupha (6) zalolohlobo ofuna ukulubeka, ulonge. Ezinye izitshalo ezifana no - anyanisi kufanele uvune ezithonjeni ezingamashumi amabili(20) kanti kwezifana nobhekilanga kanye nommbila udinga ukukhetha ezitshalweni ezingamashumi amahlanu kuya kwezilikhulu.(50-100). Emmbileni ongo gatigati (onemibala eminingi) ungalahlekelwa yimibala kanye nofuzo lokulwa nezifo uma ukhethe ezinhlangeni ezimbalwa kakhulu.

Biennials:

Lezizitshalo zimila entwasahlobo kuya ehlotsheni bese ziyashazwa ebusika zivuke seziqhakaza ehlobo elilandelayo. Lezizitshalo zidabuka emazweni akoYorophu lapho ubusika bakhona bubanda kakhulu futhi singekho isikhathi esanele sezitshalo ukuba zikhiphe imbewu ehlobo elilodwa. Lezizitshalo zimila isikhathi esize sifikele ezinyangeni ezing 18. Izibonelo uKherothi, uTenebhu kanye noRedish.

Ama Phereniyali (Perennials):

Lezizitshalo ziphila isikhathi sonke sonyaka, akhona namanye amaveji awela mgaphansi kwaloluhlobo lwezitshalo. Isibonelo izihlahla zezithelo amakhambi afana ne comfrey.

Indlela yokukhetha imbewu

- ❖ Imbewu kufanele ibe nofuzo lohlobo lwembewu eyayitshaliwe, ifane nayo. Uma ngabe wawutshale imbewu ka brinjolo omude onombala oqgamile, nembewu iqoqe kunjalo futhi. Uma isithelo sibukeka sehlukile kunjalo nembewu izokwehluka.
- ❖ Suphula izitshalo ezincikinciki ngaphambi kokuqhakaza. Ngokwesibonelo susa lezo ezikhula kancane noma ezihlabekile yizifo kanye nalezo ezibhangazelayo-ezithela kungakabi yisikhathi.

- ❖ Vuna imbewu ezitshalweni ezinhle ezinempilo.
- ❖ Vuna/khetha imbewu ezitshalweni ezikhombise ukumelana nezimo ezinzima izinambuzane kanye nezifo.
- ❖ Khetha imbewu ezitshalweni einempilo, ungakhethi kwezikhombise ukuhlabeka emacembeni noma ukubola ezithelweni nasezinhlamvini. Izifo ezitholakale embewini ziyadlulela nasesitshalweni ezintsha.
- ❖ Unga khethi imbewu ezitshalweni ezibhangazelayo, ngokubhangazela sichaza iztshalo ezikhiqiza imbewu kungakabi isikhathi. Lokhu kungabangwa ukungaphatheki kahle kwesitshalo ngenxa yesimo sezulu uma ivula ingekho lishisa, kanti futhi kungaba ufuzo. Ngakho-ke uma ukhetha loluhlobo lwembewu kungenzeka ukuba ukhetha isitshalo esisheshe siqhakaze singa kabekeli. Lokhu kubaliulekile ezitshalweni ezinjengemifino lapho ulindele khona ukudla amakhasi iskhathi eside.
- ❖ Khetha uvune imbewu eseyivuthiwe ngoba imbewu ekhiwe isengamaklume ivamise ukunga qhumi/ukungamili uma seyitshalwa.
- ❖ Ungakhethi imbewu edliwe zinambuzane nanoma yikuphi nje ukulimala, imbewu imila kahle ima ingenamyocu.
- ❖ Ungakhethi imbewu enesikhunta noma hlobo luni lwesifo.

Ubona kanjani lapho ungathola khona imbewu esitshalweni?

Ubhontshisi



Izinhlokwana zembewu

Ezinye izitshalo zinamakhajana aqukatha imbewu, njengobhontshisi no phizi. Lokhu kubizwa ngemidumba. Lezinhlalo zivamise ukuzilumbanela zodwa ngokwemvelo ngakho awudingi ukuzikhathaza ngokuhlukanisa izinhlobo.

Lethisi



Okusamakhas, imifino njengo lethisi nesipinashi, kuqhuma intshakazi maphakathi nesithombo. Imbali kanye nembewu kuphuma kule ntshakazi.

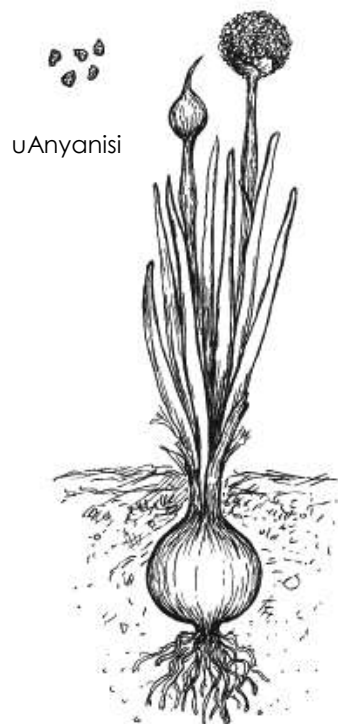
ikabishi



Brassicas (umndeni weklabishi) liqale lakhe isigaxa bese kuthi imbali iphume phakathi nesigaxa lapho kuzophuma khona

imidunjanyane yembewu. Lokhu kuvamise ikuthatha isikhathi esingaye sifike ezinyangeni ezingu 18. Umndeni weklabishi udinga izinyosi kanye nezinye izinambuzane ukuthwala impova iyekwezinye izimbali zalo iklabishi. Udinga ukubeka izihlahla eziningi ukuthola imbewu eyanele (iziyi6 kuya ku 20) isihlahla esisodwa sikhiqhiza imbewu encane kakhulu. Umndeni weklabishi ungalumbana nanoma yisiphi isihlobo salo kusukela eklabishini kuya kubrokholi nelamashayina, ngakho kufanelekile ukuthi wehlukane lemindeni uma ufuna ukuthola imbewu eqondile.

Ezisampande njengo Kherothi: Kulezizitshalo impande iqala ngokuqina salukhuni bese ikhipha isiqu eside lapho imbali kanye nembewu izomila khona. Lokhu kuvamise ukuthatha izinyanga ezingu 9. Izinyosi kanye neminyovu kusiza ukuthwala impva isika kwesinye isihlahla iya kwesinye.



uAnyanisi

Ezisampande njengo Anyanisi: Kulezizitshalo ezithela ngaphansi isiqu esikhiqhiza imbewu simila ehlotsheni lesibili sitshaliwe, lesiqu simila singabi namacembe siqine kodwa isiba nomgodi phakathi nendawo sibe side.

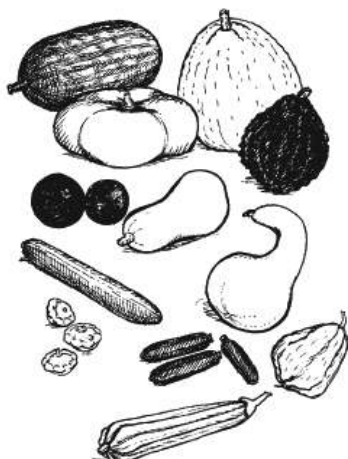
Olunye uhlobo lwalwezizitshalo (Amaryllidaceae) olufana no galigi, amashaladi. Lezizitshalo zilumbaniswa noma zizalaniswa zinyosi. Lokhu kwenzeka phakathi kwezimbali zesihlahla esisodwa. Imbewu yezitshalo ezingengaphansi kuka 20 idinga ukubekwa ukugcina uhlobo lwembewu oyifunayo igcinekile. Imbewu yalezizitshalo ayivuthwa kanyekanye idinga ukuvunwa ngesikhathi ibonakala ukuthi isulungela ukuvunwa ngaphambi kokuthi isakazwe wumoya.

Kuyisu elingcono ukuziyeka zomele esihlahleni sazo lezizimbewu ngaphambi kokuthi uziwohloze.

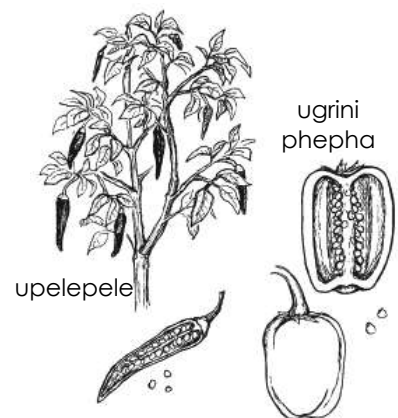
Izmbewu zokusazithelo

Isithelo sakheka emva kokuba kuchamiseleke okusaqanda emva kokulumba okwenzeka ezimbalini. Kuba sekwakheka isithelo salesosihlahla isizokhipha imbewu yaso.

- ❖ **Izithelo** zivunwa lapho sesivuthwe ngokweqile, isibonelo –Utamatisi, upelepele, ubrinjolo anye nogrini phepha.



Utamatisi kanye nezinye izithelo ezisemndenini wawo zilumbana ngokwemvelo embalini eyodwa, kodwa izitshalo ezifana nopelepele zona ezidinga umoya nezinyosi ukulumbana zidinga ukuhlukaniswa ukuqikelela ukuthi imbewu yakho ihlala ingadungekanga ngezinye izinhlobo zikapalepele. Upelepele obowazi ungababi ungakumangaza sewubaba ngendlela eyisimanga.



Amathanga – amabheca kanye namakhabe avunywa uma esevuthwe ngokweqile uwuyeke ukuze nembewu ephakathi ivuthwe ngokwanele. Ziningi izinhlobo zamathanga kanye namakhabe ongazithola sezilumbana kodwa angeke uthole ikhabe selilumbane nethanga noma nokhukhumba. Izmbali zesilisa nezesifazane zimila esitshalweni esisodwa, ezesilisa zibancane ngesidumbu zibe zinde zivuleke kuqala ukunalezi zesifazane ezivame ukumila zibe mfishanyane zibe nkulu. Ukhuhumba kanye naMabhece knona kudingwa ukuyekwa esihlahleni ukuze kuvuthwe ngokwanele. Ukhukhumba uba nsundu lapho ibhece liba ncombo libe likhulu.

- ❖ Ukhuhumba kanye naMabhece knona kudingwa ukuyekwa esihlahleni ukuze kuvuthwe ngokwanele. Ukhukhumba uba nsundu lapho ibhece liba ncombo libe likhulu.

Izimbewu ezidliwayo

Izibonelo zalezizimbewu kungaba nguMbila uBhontshisi, uPhizi kanye noJikanelanga. Lezizitshalo ziyayekwa ezihlahlahleni ukuze zivuthwe ngokwanele.

Ubona kanjani uma imbewu yakho seyilungele ukuvunwa?

- ❖ The Imbewu iba **nomsindo osakukopoza** phakathi noma **isikwebu siwe ohlangeni**. Isibonelo: ithanga kanye nommbila.
- ❖ **Umbala kanye nesidumbu nobume besithelo buyashintsa**. Isibonelo utamatisi nopelepele kuba bomvu, nogrini phephe udinga ukuyekwa uze ube bomvu, usuke ungakavuthwa mawuluhlaza ngebala.
- ❖ **Ukuqhuma kwemidumba**. Isibonelo: uphizi ,ubhintshisikanye nezindumba
- ❖ **Ukoma** Isibonelo: iklabishi, isipinashi kanye nokherothi



Ukuhlanzwa kwembewu

Ukuyela

Udinga ukususa izinsalelela zeziqu kanye namakhoba amakhulu ngoba engaba yisidleke sezinambuzane embewini yakho.



- ❖ Ukuphosa imbewu yakho emoyeni – ukuyela kuhlukanisa imbewu namakhoba ,imbenge enkulu ingakusiza

kulomsenbenzi.

- ❖ Faka imbewu yakho embengeni ukushukuzise kuze kuhlale amakhoba ngaphezulu.
- ❖ Imbewu eningi kabontshisi namabele engabhulelwa esakeni ukuze kwenzeke ngokushesha ukuhlakaniswa kwawo emakhobeni bese uyakwela uma usuqedile.

Ukuhlanzwa kwezimbewu eziswakeme noma ezimanzi

Lokhu kusetshenziswa ezitshalweni ezigcina izimbewu zazo ezithelweni eziswakeme ezifreshi njengotamatisi kanye namathanga nokhukhumba.

- ❖ Khipha imbewu esithelweni uyikiphela esitsheni esinamanzi ahlanzekile iziwashise. Chitha amanzi womise izimbewu zakho endaweni evulekile enelanga.
- ❖ Izimbewu zika tamatisi kanye noKhukhumba kungadinga ukuthi keziyekwe emanzini zithi ukuqgunywa. Lokhu kungenxa yokuthi zivikelwe uketsezi ulushibilikayo. Loluketshezi ludingwa ukususwa mgaphambi kokuba imbewu imile futhi kusiza ekutheni imbewu ingabi nesifo sezimbewu.

Inndlela yokususa lolu ketshezi:

Faka imbewu yakho emanzini imbozeke. Thela izipuni ezimbili zikashukela ugoqoze zize zincibilike.



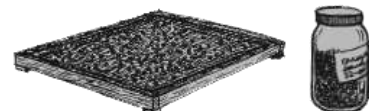
Yeka lengxube izinsuku ezintathu kuya kwezinhlanu kungeqi. Igwebu lizokwakheka phezulu okusho ukubila nokuthi lusukile lolungwengwesi.



Hlambulula imbewu yakho ngmanzi amaningi.



Yendlele ukuze yome bese uyivalela ebhodleleni uma seyomile.



Ukomiswa kwezimbewu

Izimbewu eziningi zidinga isikhathi eside zomisiwe ukunezinca ngokwenani nagezidumbu. Ukuhlola lokhu kubhontshisi ukuthi uwulume ngezinyo, uma ungafacaki kusho ukuthi imbewu seyome ngokwenele.

- ❖ Kufanenele womise izimbewu zakho endaweni eshaya umoya kude nelanga.
- ❖ Uma isimo sezulu singabalele kufanele uyomise endlini ekhudumele uyemboze ngamnethi ukuvukela izinambuzane.
- ❖ Ungalengisa ezinye izimbewu ngezikhwanyana zamaphepha endaweni eshaya umoya.
- ❖ Yendlala imbewu eningi ezisefweni noma uyilengise emasakeni. Ungasebenzisi oplasitiki.

Ukubekwa kwezimbewu

Ukugcinwa kwembewu isikhathi eside noma esifushane kuncike ekutheni:

- ❖ Hlobo luni lwembewu
- ❖ Ingabe ingeyekhethelo kangakanani
- ❖ Ibekwe kanjani



Imigomo yokubeka noma yokugcina imbewu

Ubumnyama

Thola indlela yokubeka imbewu yakho ethunzini ebumnyameni. Sebenzisa izikhwanyana zephepha, uplastiki abamnyama noma amabhodlela uwavalele emabhokisini ephepha. **Ungabeki** izimbewu zakho emabhodleleni engilazi besse uwabeka emakhabetheni.

Umswakama

Noma ngabe izimbewu zakho zomile, uma uzigcina endaweni enomswakama zizomunca umswakama zonakale. Lokhu kuzophazamisa isikhathi ebekade sizophilwa zimbewu zakho ngaphambi kokuba

Iningi lezimbewu zingabekwa kusuka eminyakeni emithathu kuya kwemihlanu(3-5) zihlale zithembakele. Ukuthembakala ukukwazi kwembewu ukumila uma seyitshaliwe. Imbewu yakho kufanele ihlale ibukeka iphelele kudwa uma ingethembekile mawuyibuka angake imile.

Uma ugcina imbewu yakho endaweni eshisayo, enelanga, nenomswakama imbewu yakho iyokwehlwa amazinga okomila ingathembakali. Kungenzeka ugcine ungasakwazanga ngisho ukuzithsala ngonyaka olandelayo. Izimbewu zithanda indawo epholile, efiphele neyomile ukuhlala zisesimweni sokumila.

uzutshale. Ngokujwayelekile kufanele somise izimbewu zethu ngomoya. Masingalokothi sizomise ngelanga, kodwa asizibeke ethunzini lapho kushaya khona umoya. Uma isimo sezulo singesihle lina linenkungu, kulukhuni ukomisa izimbewu ikakhulukazi ezinkulu ezifan nobhontshisi.

Impilo yembewu iphindwa kabili uma ingenamswakama.

Temperature

Izimbewu ziphila kahle endaweni epholile hayi ebanda kakhulu. Khetha indawo epholile efana nasoswebeni lomfula, phansi kwezihlahla noma okhambeni/embizeni yobumba.

Impilo yembewu iyaphindeka kabili uma izinga lokushisa ebekwe kulo lehle ngo 5C.

Izinambuzane

Izinambuzane ezifana nembovane, iskhunta namagciwane kunganqamula impilo yembewu yakho.



- ❖ Izimbovane ziyanda uma imbewu yakho ithole umswakama. Zizalela amaqanda azo kuyo imbewu achamuseleke khona lapho.

- ❖ Isikhunta sona siqala uma umswakama wanda kakhulu usunga phezu kuka 20%. Ekufanele sikwenze ukgcina izimbewu zethu zome

ngokuphelele.

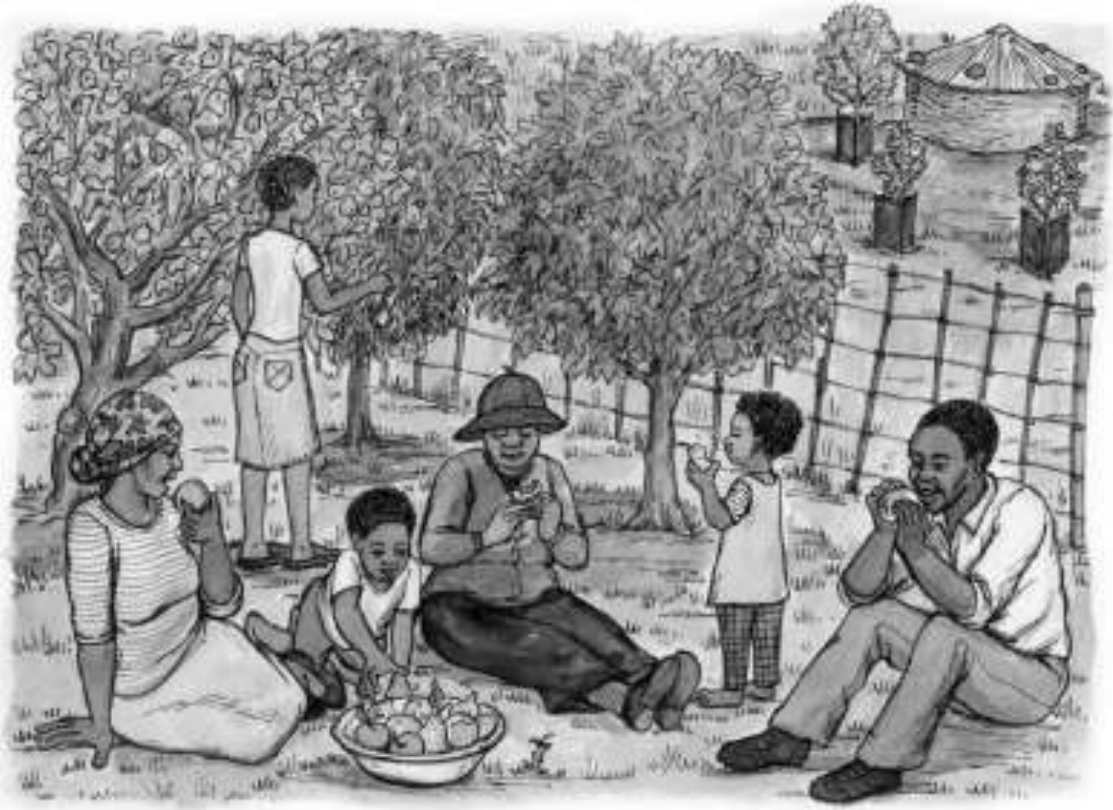
Beka/ Gcina izimbewu zakho endaweni eyomile necocokile, emabhodloleni angangeni umoya bese UYAWABHALA UKUTHI KUMBEWU YINI. Kungenzeka ukhohlwe wawubeke ini kwelinye lamabhodlela.

Izinto esingazenza ukugcina izimbewu zethu zingenazinambuzane:

- ❖ **Umlotha:** usiza ekubambeni umswakama esitsheni obeke kuso imbewu yakho, lokhu kuvikela ukuba imbovane ingaveli. Faka uhhafu wekhilogramu womlotha embewini engangekhilogramu elilodwa.
- ❖ **Ukalika:** ungasethsenziswa ngendlela efanayo nomlotha. Xuba amathesepuni angu 15 kakalika kulelonalelo kilogramu lembewu oligcinayo.
- ❖ **Amafutha okupheka:** Hlanganisa imbewu yakho namafutha okupheka ukuvikela imbovane. Faka ithesepuni eyodwa embewini engango khilogram elilodwa.
- ❖ **Ingxube yamakhambi egayiwe yezihlahla ezinukayo:** Izimbovane azizwani namakhambi anukayo, zama lokhu okulandelayo.

- UPELEPELE: Izipuni ezine kuya kweziyisithupha kulelonalelo khilogramu lembewu.
- UMHLONYANE: Yomisa amaqabunga bese uwagaya uwaxube enmbewu yakho, 4-6 wamathespuni kwikhilogramu lembewu.
- INHLABA: Yenza njengangenhla.

5. Ukutshalwa kwezihlahla zezithelo

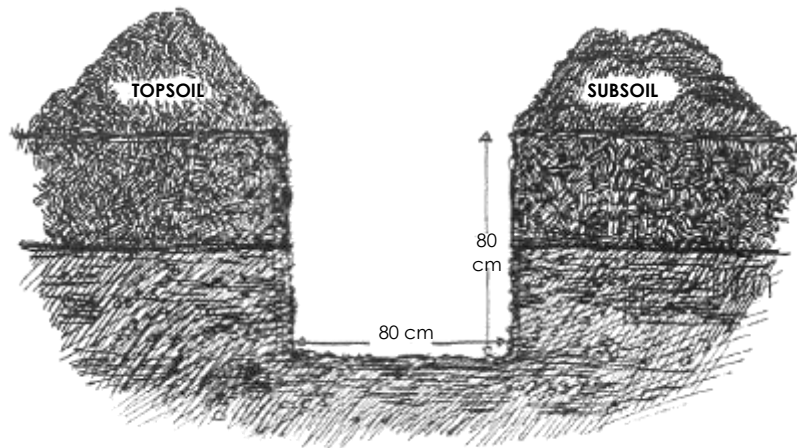


Isingeniso

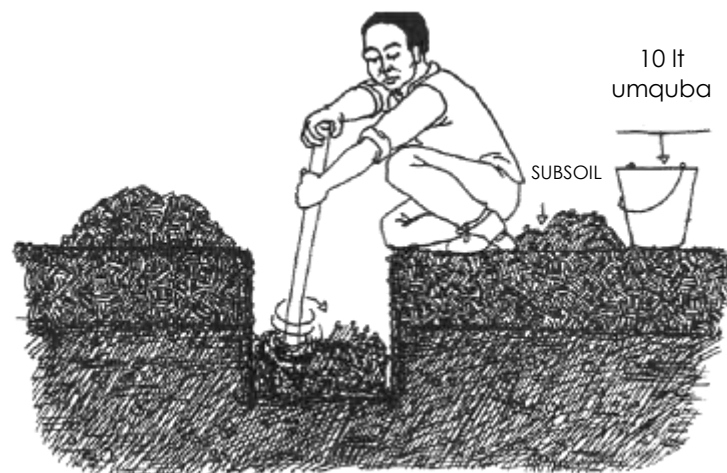
Kungumqondo omuhle ukulungiselela umgodi ozotshala kuwona isithombo sakho sezithelo kusasele amasonto ambalwa ngaphambi kokuthi usitshale. Umhlabathi uzothola isikhathi esanele sokuzinza kahle emgodini owumbile kanti nomquba owufakile ngeke uzishise izimpande zesithombo ngoba uzothola isikhathi esanele sokuvuthwa.

Ukulungisa umgodi ozotshala kuwo

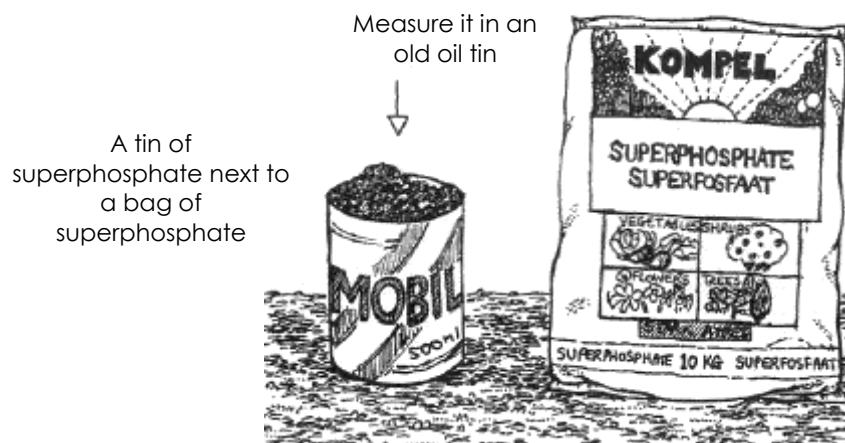
- ❖ Umgodi kufanele uwumbe ube yisikwele esinobude nobubanzi obungu 80cm kanjalo nokujula kwawo kube ngu 80cm. Umgodi uma umkhulu uzokunikeza umphumela omuhle wokuthi isihlahla sakho sibe sihle. Ngenkathi umba kufanele ukuthi inhlabathi yangaphezulu emnyama uyithele ecaleni elilodwa kuthi eyangaphansi nayo uyithele ngxenye.



- ❖ Thela phakathi emgodini umquba ogcwele ibhakede elingu 10 litres. Wuxube namabhakede ambalwa enhlabathi yangaphansi.



- ❖ Xuba lengxube ngomanyolo obizwa ngokuthi yi Superphosphate engu 500g noma ikhilogramu elilodwa lamathambo agayiwe.



- ❖ Okulandelayo thela amabhakede amabili omquba uwaxube nenhlabathi yangaphezulu.

- ❖ Emuva kwalokho umgodi wakho wugcwalise ngenhlabathi yangaphezulu. Kungenzeka ukuthi ubuye udinge enye inhlabathi emnyama. Kungadingeka ukuthi uyimbe kwenye indawo ukuze kweneliseke umgodi.

Ukutshala isihlahla

Ukunakekela isihlahla sakho esisesincane ngaphambi kokuthi sitshalwe

- ❖ Uma ngabe kungukuthi sisikhwameni esiya plastiki, sinisele njalo nhe emuva kwezinsuku ezimbalwa.
- ❖ Uma ngabe izimpande zinqunu, zingafakwe ndawo, yemboza izimpande ngesihlabathi esiswakeme, usonge ngesaka elimanzi kuze kufike isikhathi sokutshala.

Ukutshala isithombo esisesikhwameni seplastiki

- ❖ Nisela isithombo esisesikhwameni ngaphandle kokuhlikiza inhlabathi ephakathi
- ❖ Yenza umgojana emgodini owulungise ngaphambilini, ulingane nobukhulu beplastiki.
- ❖ Khipha isihlahla sakho esikhwameni esiyiplastiki.
- ❖ Tshala isihlahla sakho, uqinisekise ukuthi izimpande zembozwe kahle yinhlabathi. Ukujula kwesihlahla kufanele kulingane nokujula obebukade buyikona ngenkathi isithombo sisisesikhwameni.

Ukutshala isihlahla esifike izimpande zingaphandle (zingafalwe ndawo)

- ❖ Yenza umgojana emgodini owulungise ngaphambilini. Lomgojana kufanele ubemkhulu kunezimpande zesihlahla.
- ❖ Bamba isihlahla usiphakamise emgodini sithi ukuba ngaphezudlwana kancane ngaphandle komgodi.
- ❖ Ngokucophelela thela inhlabathi yakho izungeze izimpande zesihlahla. Qinisekisa ukuthi inhlabathi ingena kahle ezimpandeni ukuze kungabibikho izikhala zomoya. Isihlahla kufanele sijule ngokufanayo kunangesikhathi sisatshaliwe lapho esikhishwe khona.



- ❖ I"dolo" (bud union) elibonakayo esithonjeni kumele libe ngu 3cm ngaphezu kwenhlabathi.

- ❖ Uma ususitshalile isihlahla sakho, kufanele usithene. Injongo yalokhu yilokhu okulandelayo:

- Ukuthena kusiza ekuthini izimpande zesithombo zomelele
- Uma singatheni, isihlahla sethu sizomila amaqabunga amaningi, kodwa singakhuli sibe side.



Ukunisela isihlahla esisanda kutshalwa

- ❖ Mbambatha kahle inhlabathi ezungeze isithombo esitshaliwe
- ❖ Yakha idanyana endaweni ezungeze isihlahla ukuze amanzi abambeke
- ❖ Nikeza isihlahla sakho amabhakede amabili amanzi.



- ❖ Yendlala utshani obomile, amaphephandaba amadala noma amatshe duzane nesihlahla, kanti lokho okwendlalile kumele kungasondelani nesiqu



salokho okutshalile. Lokhu kuzokonga amanzi futhi kusize ekunqandeni ukukhula mawala kokhula.

- ❖ Nisela isithombo sakho ngamakhakede amabili amanzi njalo nje emuva kwamasonto amabili kuze kufike isikhathi semvula. Uma ngabe kunasomiso, kumele ukuthi usunisele isithombo sakho. Uma ngabe kunesomiso noma kusebusika, kumele ukuthi unisele isihlahla sakho nyanga zonke.

Ukondla izihlahla zakho

Ukusebenzisa umquba wezinkomo

Yendlala umquba emhlabathi endaweni ebanzi ngokungangendawo engembozwa yithinzi lamagatsha. kugweme ukuthi umquba wakho uthinte isiqu sesihlahla. Yemboza umquba wakho ngesembozo sotshani, ngaphandle kwalokho umquba wakho uzophelelwa ngamandla.

Ubudala besihlahla	September	December
Unyaka ubudala	Ibhakede elilodwa 1	Ibhakede elilodwa 1
Iminyaka emibili ubudala	Amabhakede amabili	Amabhakede amabili
Iminyaka emithathu ubudala	Amabhakede amathathu	Amabhakede amathathu
Iminyaka emine ubudala	Amabhakede amane	Amabhakede amane
Iminyaka emihlanu ubudala	Amabhakede amahlanu	Amabhakede amahlanu

Emuva kweminyaka emihlanu kumele ukuthi ufake umquba olinganayo minyaka yonke.



6. Ukukhiqizwa Kwezihlahla Zezithelo

Ukuthena

Ukuthena kuyindlela yokusika ngokukhetha izingxenye ezithile zesihlahla, ukusabalalisa izindlela ezithilw zokhukhula kwezihlahla. Kuhambisnana kakhulu namagaya, iziqu kanye namaqabunga, kodwa kuyenzeka kube izimpande kanye nezithelo uqobo.

Kulezithelo ezinenhlamvu eqinile (amapetshisi, amaplamusi, amapilikso). Kanye nalezo zithelo ezimuncwana noma ezisa wolintshi (amawolintshi ulamula kanye namanantshi). Uma isihlahla kade sithele izithelo kyenzeka ngonyaka olandelayo sithele kancane noma singatheli nhlobo. Kuyisu elihle ukuphungula izithelo esihlahleni uma zithele zaba ningi kakhulu / uma isihlahla sithele kakhulu. Lokhu kwenza uthole izithelo ezingeningi kodwa ezinkulu, kunokuthola eziningi ngesibalo kodwa zibenance ubuqhata



Ukuphungulwa kwezithelo: Ngokwejwayelekile kufanele ushiye okungenani izithelo eainngu 7-8 egatsheni eliyigxathi, noma izithelo ezine egatsheni elingagne ngalo.

Kungani kufanele uthene?

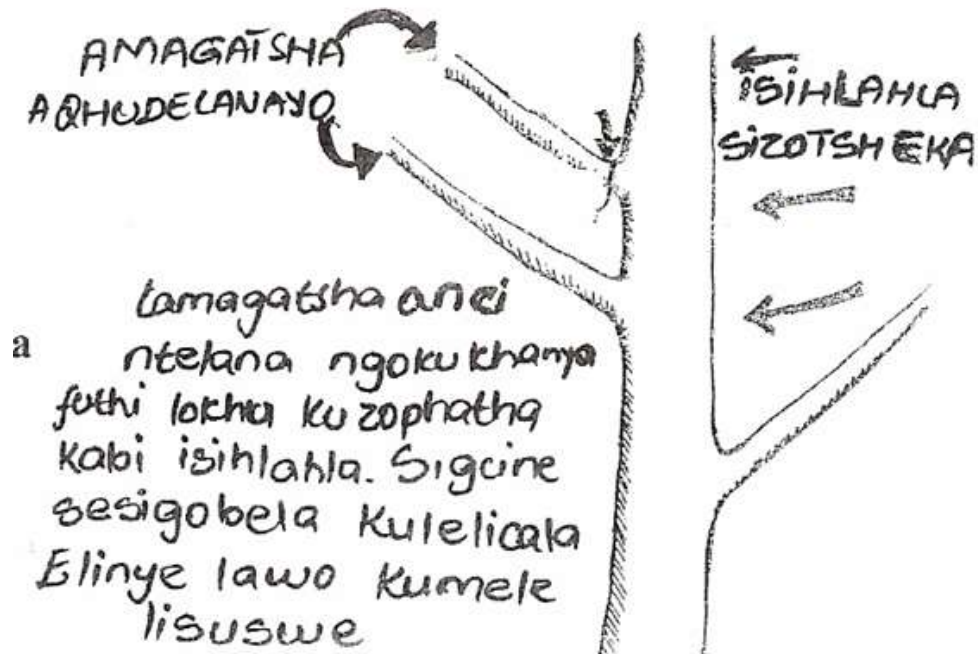
Ezihlahleni zezithelo ukuthena amagatsha kwenza isihlahla sakheke siqine sikwazi:

- Ukumelana nomoya onamandla singakuphi
- Sithwale izithelo ezisindayo
- Kuvuneka kakula njengoba isihlahla singabi side.

Ukuthena futhi kwandisa ukukhanya kanye nokuzungeza kokoya oshaya esihlahleni. Lokhu kunciphisa izifo futhi kusize uwakha isithelo nokusivuthiswa.

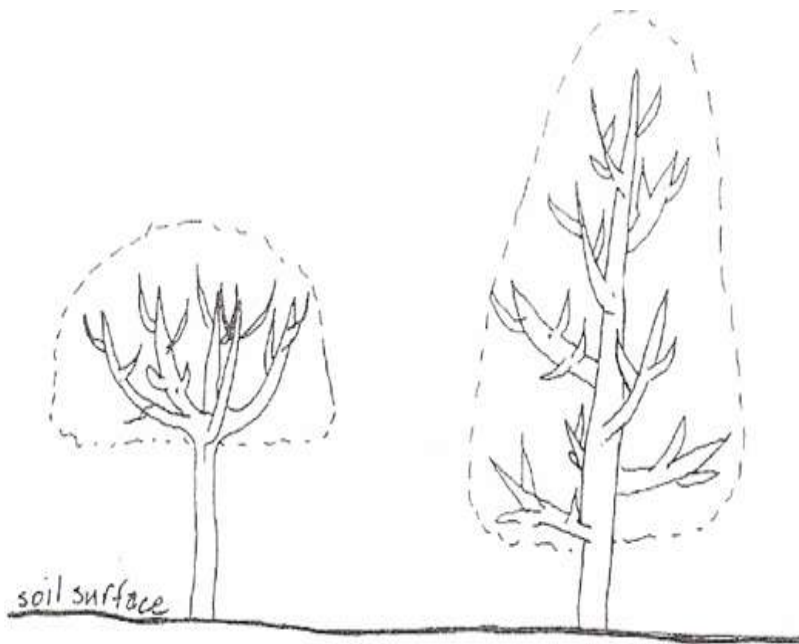
Izigaba Zokuthena

- Okokuqala, susa wonke amagatsha agile nagulayo.
- Bese ususa nanoma imiphi imixhantela engadingekile. (Isib.ezixhantelene elinye kwelinye, nesondelene kakhulu noma ezikhuhlana esinye kwesinye). Sika phezudlwana kancane nalapo igatsha lixhuma khona



- Nquma njalo amagatsha ngezansi kwalapho isihlahla sahlanganiswa khona. Leligatsha elisuke likhula lizoncintisana nezingxenywe zesihlahla ezizothela isithelo.





- Ngokwejwayelekile izihlahla zezithelo zithenwa zilandeliswe lezi zimo zokuma.

Indawo evulekile: (left):

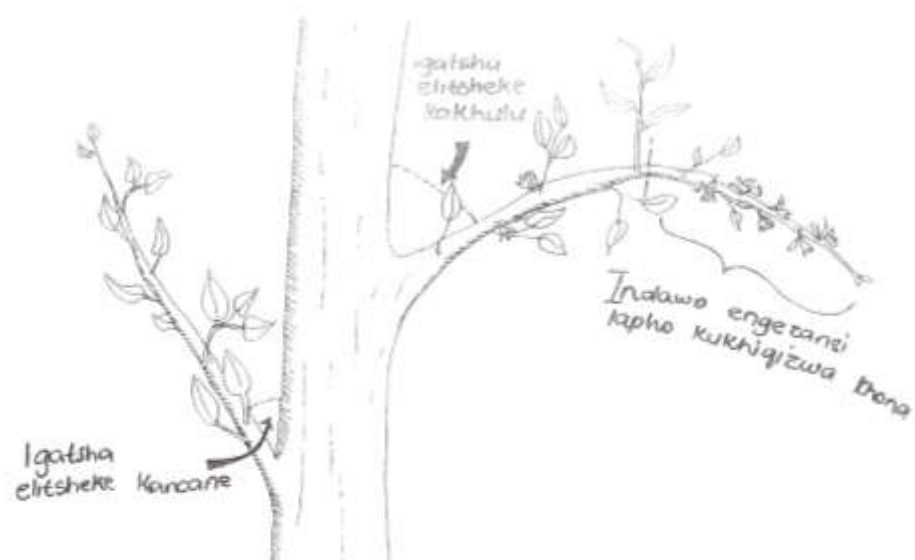
Yenza isihlahla sisabalale lokhu okuvumela ukukhanya okwanele kungene phakathi nesihlahla isetshenziselwa ukuze sithole. Ngokwejwayelekile lendlala isetshenziselwa izithelo ezinenhlamvu eqinile (amapetshisi...

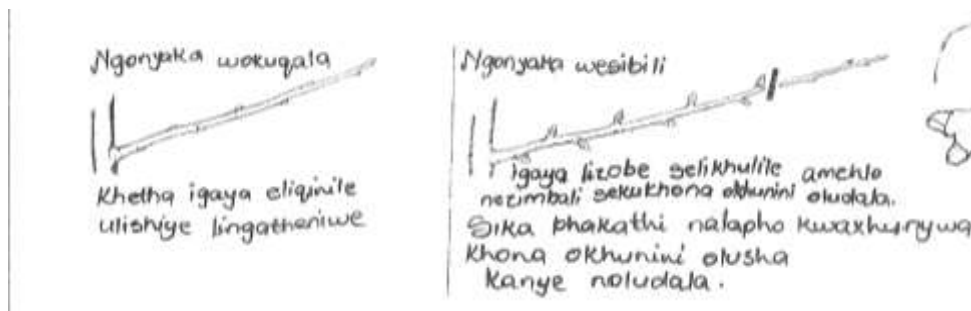
Umholi ophakathi nendawo

(far left): Nogkwejwayelekile izithelo ezinjengama – apula namapheya.

- Ngokwejwayelekile amagatsha amahle ekutheleni akwi elingu 45-65 "degrees" ukugqagga emagatsheni amkhulu. Amagatsha anesikhala esincane phakathi kwawo negatsha elikhulu kumbe isiqu (i-engela) ayephuka uma kunamoya. Ukuyeka igatsha elilodwa elikhula libheke phezulu esihlahleni, kanye nalawo abheka emaceleni, akhuthaza ukuthi isihlahla sithole kakhulu kunokuthi siqonge sibheke phezulu. Isihlahla sichitha amandla amaningi sikhqiza izithelo kunokuthi sizama ukukhula sibheke phezulu.

Ukuma nokushiya kwamagatsha athela kahle



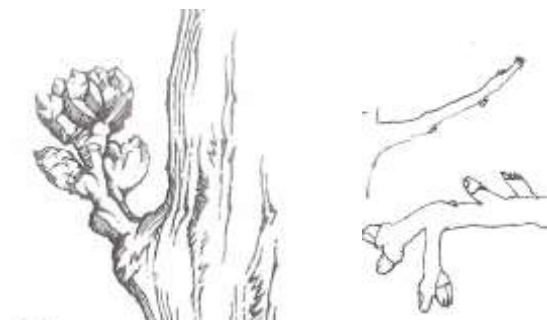


Ukuthena izithelo ezinenhlamvu eqinile

AMAPETSHISI: Izithelo zithela kulawo magatsha amila ngonyaka ophelile kuwo womabili amagatsha asemaceleni kanye nalawo asethela

AMAPULAMUSI: Izithelo zithela emagatsheni asemaceeni aseneminyaka emibili nangaphezudlwana (ezihlahleni ezinance amaqhuzwana asamehlwana abukeka njengeqoqo lamagatsha asemaceleni kuthi ezihlahleni ezindala zibukeke njengamahlumela amaningi

Ukhuni oluthelayo epetshiseni olukhombisa amagatsha asemaceleni kanye namehlwana athelayo.



Lapho kuqhuma khona isithelo esihlahleni esidala sepulamusi

Uma uzosika igatsha, ukwenzela ukuthi kumile kabusha, sika ngasenhlanga kancane kweqhutshana elikhombe ngaphandle noma igatshana



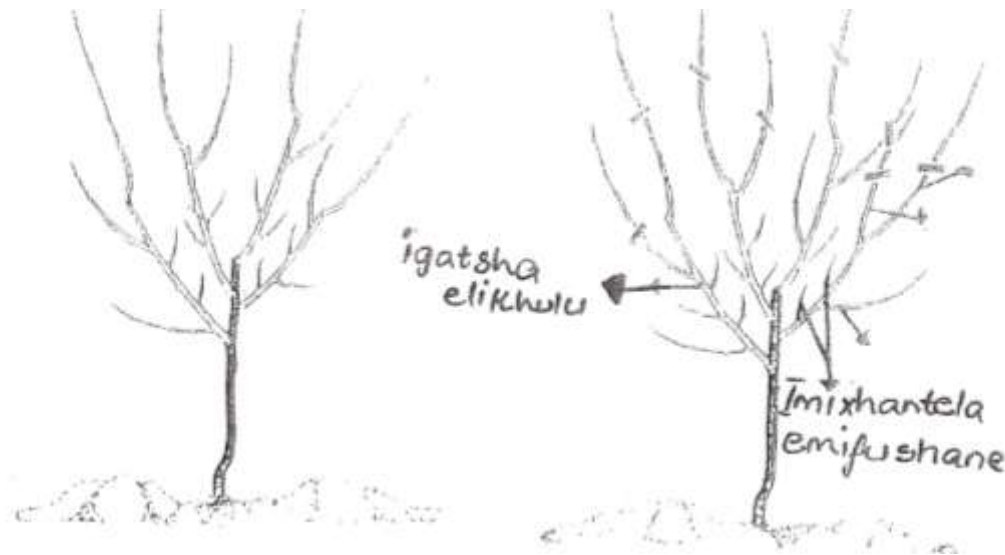
1. Ngesikhathi ukutshala,

- Thena izimpande futhi tuene ensilala sibe side ngangedolo (60cm). Lokhu kuzophoqa isihlahla ukuthi sikhule siphumele ngaphandle sisabalale kunokuthi sikhule sibheke phezulu.



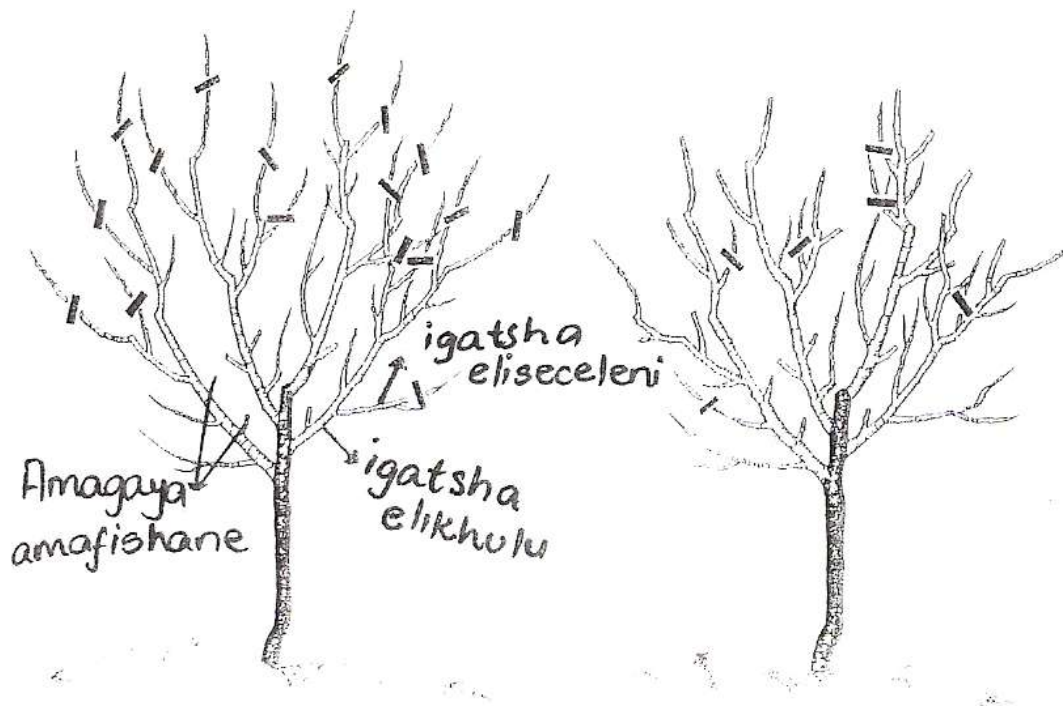
2. Ebusikeni bokuqala

- Sika amagaya amakhulu phezulu
- Eminye imixhantela yamagaya athelayo izobe isikhulile emagatsheni amakhulu
- Shiya imixhantela emibili noma emithathu kulelo nalelogatsha elikhulu kwelokuqala udede ngo 40cm ukusuka egatsheni elikhulu uqhele kakhudlwana kwe lilandelayo



3.Ebusikeni besibili kanue nobesithathu

- Phungula amagatsha amakhulu phezulu. Uma uwasika abe mancane ngaphezu kowawuwasike kona ngonyaka odlule, lokhu kuzokwenza ukuthi isihlahla singasheshi ukuthela izithelo
- Nquma imixhantela yamagatsha ibe mifishane. Wasike kugqagqe ngo 1cm phezulu kwalapho kuqhuma khona imbali. Noma usike emuva phakathi kokhuni oludala nolusha.
- Nquma amagaya asemaceleni ephuma kwimixhantela. Phinda futhi ushiye amagaya amabili noma amathathu izithelo zizothela kumxhantela owawuthenwe ngokwedlule.
- Uma izihlahla sezikhule kahle, zithene kancane njalo ebusika



7. Ama “Tower Gardens”

Ayini ama Tower gardens?

Ama Tower gardens yilolo hlobo lwezingadi ezakhiwele ukonga amanzi, ngokusebenzisa okwesibili amanzi asesebenzile, kanye nokwenza ukukhiqiza izithombo kubelula kubantu abadala. Loluhlobo lwezingadi lubuye lubizwe nge “lazy gardening” okusho ukuthi izingadi ezilula ukuzisebenza. Njengoba kuthiwa ngama Tower gardens, kuchaza ukuthi ziphakeme. Lokhu kwenziwela ikakhulukazi abantu abadala, asikho isidingo sokuthi balokhu begoba uma besebenza. Kuyabasiza ke bona ngoba bahlushwa ngamaqolo. AmaTower gardens ayasondezeka futhi lapho abantu abadala bekwazi ukufinyelela khona kalula.

Yini I “gray water”

Ama “Grey water” yilawomanzi ekade esetshenziswa ekhaya. Ngenxa yokuswelakala kwamanzi emakhaya, amanzi asesebenzile angakwazi ukubuye asetshenziswe engadini. Indlela yokusebenzisa lamanzi ichazwe kabanzi lapha ngezansi.

Ukusebenzisa amanzi asesebenzile

Ingezikhathi eziningi, amanzi athwalwa ngamakhanda ngezipakupaku ekhiwa kompomp, hayi ngenhloso yokuchelela engadini, kepha yokupheka nokuwasha. Lamanzi angasetshenziswa futhi uma esetshenzisiwe, ekucheleleni ingadi ngokuyimpumelelo. Lena yindlela yokonga amanzi. ngokusebenzisa amanzi asesebenzile (grey water) ekuniseleni.

Amaveji atshalwa enhlabathini egxishwe esakeni. Kubhotshozwa izimbobo emacaleni esaka bese kuyatshalwa, bese kuthi, njalo ngosuku uma kukhona amanzi avela endlini ayothelwa kulelisaka.

Amaveji angatshalwa ngokuyimpumelelo ngokuniselwa ngamanzi anensipho! Lensipho ingagezeka ngokuthi uthole amabhakede amabili amanzi ahlanzekile phakathi nendawo kuleTower garden kanye ngesonto.

Lolu wuhlobo lwezingadi zabantu abavilaphayo

Okunye okuhle kakhulu ngaloluhlobo lwengadi ukuthi alufukuzisi kanti futhi aludingi ukuthi umuntu achithe isikhathi esiningi kuzona. Zihle kakhulu ukuthi zisetshenziswe ngomama ngoba azidingi isikhathi sabo esiningi ngoba bahlala bexakekile. Uma abantu sebewajwayele ama Tower gardens, bakhetha ukuthi bawenze abe semnyango ongemuva ukuze bangalahlekelwa isikhathi esiningi uma bezochitha amanzi asesebenzile.

Kunzima ukuqagela ukuthi kudingeka amanzi angakanani kulezizingadi, lokhu kuzotholakala emuva kwesikhathi. Uma kwenzeka ukuthi kwakheke ichithshanyana laphayana ezansi ne Tower lakho, kungenzeka ukuthi maningi kakhulu amanzi athelwa khona. Lokhu kuzochaza ukuthi kudingeka ukuthi kwakhiwe I Tower lesibili.

Indlela yokwakha I Tower

Indlela I Tower elisebenza ngayo ilula ngalendlela:

- ❖ **Inhlabathi** ifakwa phakathi izungeze amatshe, bese kuthi I “shade cloth” isebenze njengesikhumba emaceleni. Phakathi nendawo kubekwa amatshe.
- ❖ **Amatshe** apakishwe ngaphakathi yiwona aqondisa amanzi ukuthi ahlale esezingeni elifanele ukuze akwazi ukubhekana nokukhula kwezitshalo.
- ❖ **Ingxube yenhlabathi** inikezela imvundo.

Izigxobo

Akubalulekile ukuthi kube yisigxobo kuphela ezifakwa lapha. Ungasebenzisa noma yini enye ezofezwa lokho okwenziwa yisigxobo. Ungasebenzisa amagatsha ezihlahla noma izitandathi, ikakhulukazi uma utshale izitshalo ezifana notamatisi ngaphezulu ezidinga ukusekelwa, ungabuye ulukelele nangocingo.

Indwangu ezungezile

Indlela okhetha ngayo uhlobo lwendwangu ezungezile ibalulekile:

- ❖ I - Nylon gunny bags ihlala kuphela iminyaka emibili;
- ❖ Amasaka, ***njengoba kuveziwe ezithombeni, zihlala kuphela unyaka owodwa;***
- ❖ Amaplastiki amnyama aguga masinyane ikakhulukazi uma eke ahlathwa yilanga elishisayo;
- ❖ I nethi elibizwa ngokuthi yi “Shade



netting' lenza umsebenzi ongcono kakhulu. Kubalulekile ukusebenzisa izintambo ze Nylon noma intambo yokudoba ukuhlanganisa noma ukuthunga lapho kuhlangana khona izinhlangothi zaleli Tower ukuze kube yindilinga kahle njengengilazi yamanzi, njengoba kukhonjiswa esithombeni.

Inhlabathi

- ❖ Inhlabathi kufanele ivunde futhi ikwazi ukugcina amanzi.
- ❖ Umxube wezingxenye eziyisithupha zenhlabathi, izingxenye ezine zomquba kanye nezimbili zomlotha wezinkuni, yiwona okahle.
- ❖ Inhlabathi kufanele yenziwe iswakame kodwa ingagandaywa.
- ❖ Amanzi kufanele achelwe enhlabathini angene kahle yonke indawo ukuze afinyelele nakulezondawo ezigangadekile.



Ukugcwalisa

Ukupakisha amatshe ngaphakathi kubaluleke kakhulu. Pakisha kahle amatshe ayizicaba, noma izicucu zamatshe avela endlini endala ediliziwe. Uma kunokwenzeka, sebenzisa amatshe amancane ayizindilinga, inqobo nje uma ezopakishwa ahleleke kahle ukuze amanzi akwazi ukungena yonke indawo ngaphakathi ngokulinganayo.



Luhlobo luni lwamaveji ezingatshalwa kulama Tower gardens?

- ❖ Amaveji anamacembe amakhulu (Leafy crops)

AmaTower Gardens awalungele amaveji anamacembe, ikakhulukazi uhlobo olufana nesipinash, kanti atshalwa ezimbotsheni ezisemaceleni.

Lezizimbobo kufanele zibesemaceleni esaka futhi zenziwe ngendlela yokuthi lesi naleso sithimbo sithole indawo eyanele yokuthi kukhule izimande zaso.

❖ Utamatisi kanye no anyanisi

Utamatisi kanye noma anyanisi ungatshalwa ngaphezulu, ngoba lezizitshalo zidinga ukusekelwa ngocingo uma sezikhulile.

❖ Izitshalo ezihambisana nezinye (Companion crops)

Lapho kungenzeka, kubalulekile ukutshala lezizitshalo ukuze kuvikeleke izifo kanye nezinambuzane ngokwemvelo. U *Garlic* kanye *onions* yizona zitshalo ezibalulekile kulokhu.



Okunye okuhle okutholakele ngama Tower gardens yindlela akwazi ukumelana ngayo nokushisa, uma uqhathanisa nengadi ejwayekile. Isizathu salokhu asicaci kahle. Kungenzeka ukuthi umoya ukwazi ukuzungeza yonke indawo kwi Tower garden ngokukhululeka, inhlabathi ephakathi ihlala ipholile, noma mhlawumbe ukuthi kuhlale kunomswakama owenele kule Tower.

8. Ukukhiqizwa kwezithelo – Ukwandiswa kwezitshalo

Izitshalo zingatshalwa ngembewu kumbe ngezingxenye zezihlahla ezinkulu. Ubuhle bokusebenzisa izihlahla ezingabazali, ukuthi izihlahla ezincane ziba nezimpawu ezikumzali maqondana nokukhula kanye nezithelo. Izinhlobo ezithile zezitshalo kanye nezihlahla zingatshalwa ngqo kuthathelwa kwezinkulu (ukuzalanisa izitshalo).

Ziningi izindlela zokutshala ezingasetshenziswa.

Imisiko

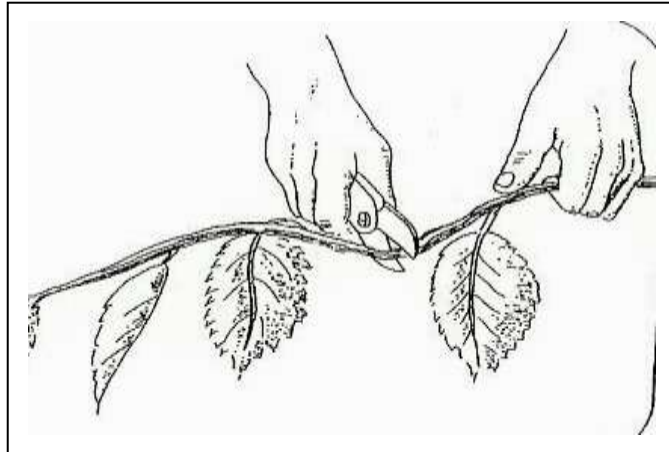
Imisiko yizingxenye zezitshalo, ngokwejwayelekile iziqu kanye namagatsha angamila izimpande ezintsha. Imisiko ingathathwa kulezo zihlahla ezivuthuka amaqabunga ebusika ezinjengamapetshise, umkhiwane no malibhele. Ingathathwa futhi kwezinye izitshalo izinjengamakhambi kanye nobhatata.

Imiskiko akufanele isikwe ngesikhathi izihlahla zigqilazekile, kushisa kakhulu, kunamagade noma kunesomiso. Imixhantela ekhipha izimbali noma izithelo akufanele isetshenziselwe imisiko. Ngokwejwayelekile zimbili izinhlobo.

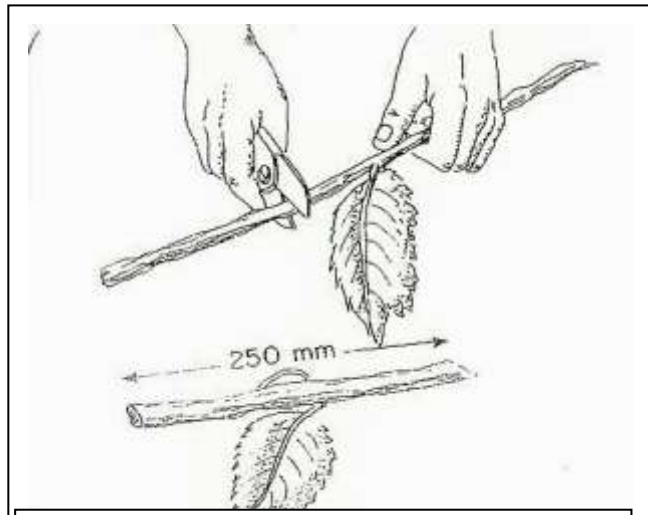
Imisiko ethambile	Imisiko yokhuni oluqinile
Lena imifanekiso “eluhlaza” ethathwe kokumilayo ngenkathi yonyaka / entwasahlobo.	Lezi ngezindadlana imixhantela eyizinkuni ngenkathi yonyaka odlule.
Yejwayele ukuthi ithathwe uma kuqala intwasahlobo.	Izihlahla eziwohloka amaqabunga ebusika zithathwa ngenkathi kungakahlumi, ngaphambi kokuba amehlo aqhume ebusika. Kulezo zihlahla ezihlala ziluhlaza kufanele zisikwe ngaphambi kokuthi kukhule ngokushesha (kunzima ukuhlukanisa, kufanele wenze ubone).
Susa konke kodwa ushiye amaqabunga ambalwa angasenhla.	Lemisiko ayinawo amaqabunga futhi ngokwejwayelekile nezihloko ziyasuswa. Kusetshenziswa amagaya asemancane anamehlo amaningi.

Ithathwa kanjani imisiko

- ❖ Sika ngezansi kwalapho kuzophuma khona iqabunga/ihlo.
- ❖ Yiba nesiqiniseko sokuthi okungenani umsiko unamaqabunga amahlanu asondelane.
- ❖ Sebenzisa imixhanti ebheke phansi namagatsha abheke phezulu, kunezinsunsu ezilula ezibheke phezulu.
- ❖ Zibheke phezulu futhi zinezikhala ezinde phakathi namalunga nezihlahla ezitshalwe ngawo zizobukeka kanjalo.



- ❖ Sika iziqu zibe ngu 0.5 cm ubuqatha ubude bube phakathi kuka 25-30 cm. Isingezansi somsiko senziwa / sithathwa ngezansi kweso bese kuthi isingenhla sithathwe mangenhlanga kweso.



- ❖ Zidinga ukubekwa enhlabathini engabambi kakhulu amanzi (okungcono isihlabathi) okungenani kube namaqhuzu amabili okukula. **Yiba nesiqiniseko sokuthi imisiko ima ibheke phezulu kahle!!!** Isihlabathi kumele sihlale siswakeme ngaso sonke isikhati futhi sivikelekile emoyeni nasekushiseni.
- ❖ Uma ungase uthole impushana yehomoni isingezansi somsiko singacwiliswa kulempushana ukusiza umsiko ukuthi umile izimpande.



Resource Material for Homestead Food Gardeners

Chapter 5: Handouts (isiZulu)

Handout 1 Ukonga nokusebenzisa amanzi (Saving and using water)

Handout 2 Ukuchelela engadini: Kangakanani, nini nanini? (How much, how often to water)

Handout 3 Indlela Ephephile Yokunakekela Ithangi

Handout 4 Ukuchelela engadini: Kangakanani, nini nanini?

1. Ukonga nokusebenzisa amanzi



Onke amanzi avela emvuleni. Uma sihlala ezindaweni lapho elingani khona kakhulu noma eliba nesikhathi eside ngaphandle kwemvula, sidinga ukuziqoqela thina amanzi. Amanzi siwaqoqela ukuthi sihlale sinamanzi isikhathi eside.

Ukuqoqa amanzi kungenzeka ngezindlela eziningana:

- ❖ Sibamba amanzi emvula.
- ❖ Songa lawomanzi esinawo.
- ❖ Sibambe nalawo agelezayo

Ukubamba amanzi emvula

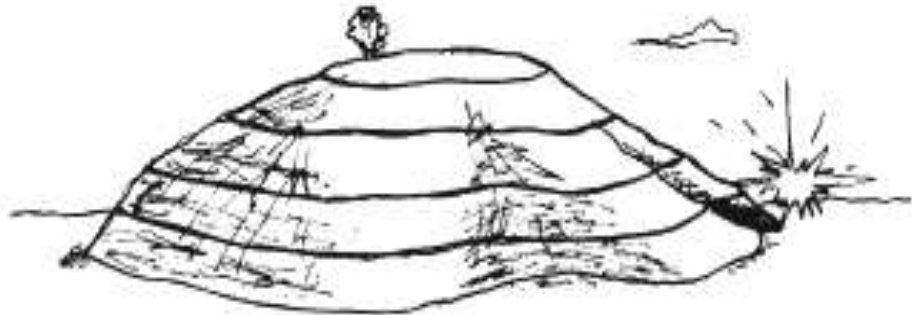
Lapha sehlisa ijubane lamanzi, ukuze amanzi amunceke enhlabathini. Lapha ngezansi siyakhombisa ukuthi lokhu singakwenza kanjani ezingadini kanye nasemakhaya ethu.

- ❖ Faka imfucuza enhlabathini. Sikhulumile ngalokhu ngenkathi sixoxa ngokulungisa inhlabathi yakho kanye nasekwenzeni izinhlobo zemibhede, kulelibhuku.
- ❖ Isembozo senhlabathi (*mulch*). Likhona futhi uhlangothi oluxoxa ngalokhu kuleli bhuku.

- ❖ Inhlabathi yakho kufanele ukuthi ihlale yembozwe yizitshalo ezimilile. Sebenzisa izitshalo okuthiwa ngama "ground covers" izihlahla ezimfushane kanye nezinde.
- ❖ Vikela inhlabathi yakho emoyeni onamandla. Bona kulelibhuku ingxenye ekhuluma ngokuvikela indawo emoyeni kanye nasesithathweni.
- ❖ Uma ingadi yakho isendaweni eyintaba noma eyiqele, imibhede yakho kufanele yakhiwe inqume kabili. Lokhu kuzokwenza amanzi angagelezi ehlele ezansi umathanda, ngoba lokhu kungayigugula.
- ❖ Ukwakha imibundu ezokwakhiwa inqume kabili entabeni. Lokhu kunciphisa ijubane lamanzi, futhi liwamise ukuze azike angene anhlabathini.
- ❖ Ukwakha ama "swales". Lemibundu lapha yakhiwa ngenye indlela. Lokhu kuchaziwe lapha ngezansi.

Imibundu (contours)

Imibundu lena yenziwa inqume kabili entabeni, noma eqeleni ihambisane nokuma kwentaba (contour line). Uma kwakhiwa lombundu



Isithombe esikhombisa imibundu eyakhiwe endaweni eliqele ngendlela yokuthi ingachithi

onquma kabili entabeni kulandelelwa omaka ababekwa ngokulandelana ukuze lemibundu ikwazi ukubamba amanzi ngendlela efanele, ingabheki ezansi.

Indlela yokubona ukuthi umbundu kumele wakhiwe kuphi entabeni

Ungasebenzisa i A-frame uma ufuna ukuthi umbundu wakho owenzayo unqume kabili entabeni ngendlela engabhekile ezansi, engenakuwachitha amanzi.



i aframe yakheka kalula kabi:

- 1 Thatha amapali amabili alinganayo ngobude, bese uhlanganisa amachopho awo ngocingo noma ngendophu.

Okudingekayo:

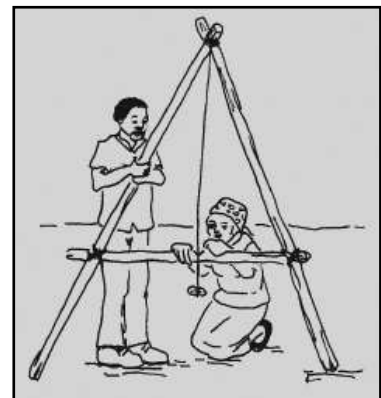
Amapali amabili angamamitha
amathathu ubude;
Ipali elilodwa elingamamitha amabili
Ucingo noma indophu
Itshe elincane



- 2 Thatha ipali lesithathu ulinqumise kabili, kusukela ubudeni obungangemitha kusukela ezansi.



- 3 Bophela indophu ilenge lapho kuhlangana khona amachopho amapali amabili. Bophela itshe ngezansi ukuze intambo ilenge idonseke. Uma ilenga intambo, itshe kufanele libe sezansana kwepali elinqume kabili. I A-frame yakho yibambe ime endaweni eyisicaba. Uma usukwenzile lokho kufanele ufake uphawu lapho intambo ethinte khona epalini elinqume kabili. Lokhu kufanele kubemaphakathi naphakathi nobude bepali elinqume kabili.



Isetshenziswa kanjani I A-frame:

- 4 Thola indawo elinganayo (level) ekuqaleni kwalapho ofuna ukwenza khona umbundu (contour). Uma usuyithole kahle lendawo, shayela izikhonkwane lapho kumi khona imilenze yomibili ye A-frame. Emuva kwalokho susa umlenze wangakwesobunxele uwuse phambili. Uma usuwumisa futhi umlenze phambili, wubeke phansi uma intambo elengayo isiqondene nalapho owenze khona umaka epalini elinqume kabili. Uma

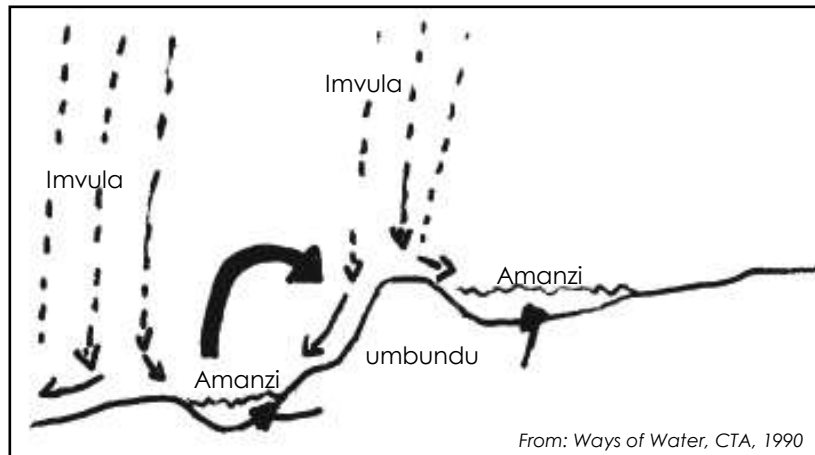


From: Farmer-to-Farmer
Handbook, FSG, 1996

sekunjalo bethelela isikhonkwane esilandelayo.

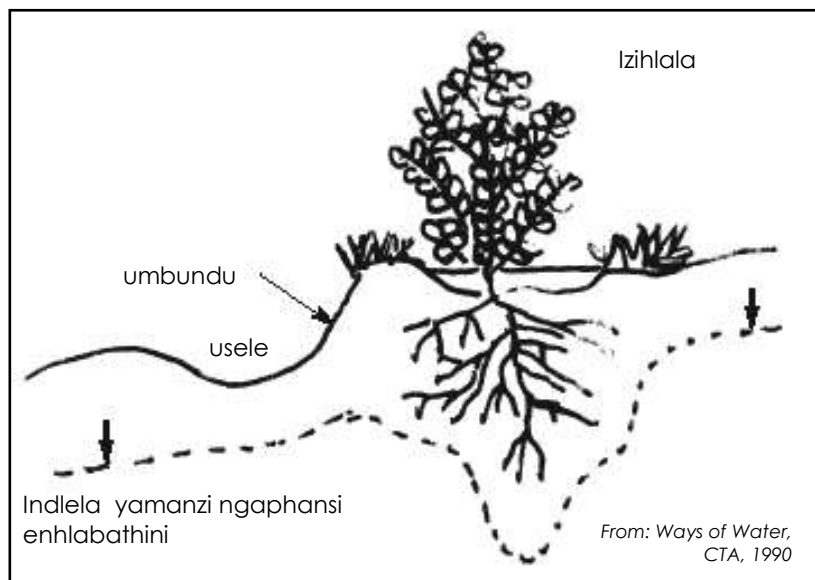
Qhubeka uhambisa imilenze ngalendlela uze uqede ukwenza umaka lapho umbundu wakho oyohamba khona.

Uma usuwakha umbundu uqobo lwawo kufanele umbe lapho odwebe khona ngenkathi usebenzisa I A-frame. Inhlabathi oyimbayo kumele ibe ngenhla komsele. Ukujula komsele kumele kube ngu 30 cm ukuya phansi, futhi ivuleke ngo 30 cm. Uma lina izulu, imvula izobambeka ngenhla



kombundu kanye nasemseleni uqobo. Amanzi azobambeka aze azike esikhundleni sokuthi agelezele ezansi. Njengoba nenhlabathi ikhukhuleka ngenhla kombundu, kugcina sekukhandeke nethantala lamanzi elincanyana. Lelithantala lamanzi lithatha isikhashana ukuthi linyamalale.

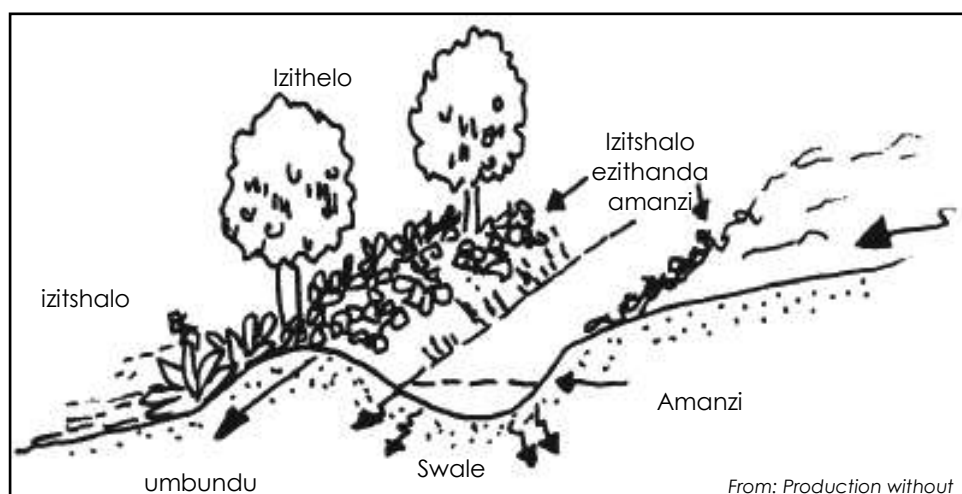
Kubakuhle ukuthi ngenhla kombundu lapho kuma khona amanzi kutshalwe izitshalo ezithanda amanzi. Lokhu kuyasiza kakhulu ekubambeni inhlabathi embundwini. Kusiza futhi izitshalo zakho futhi ngamanzi. Lena yindawo ekahle impela ekutshaleni izithelo kanye kanye namakhambi. Bona futhi ikhasana elichaza ngokuvikela izitshalo emoyeni kanye nasezithathweni, ngoba kukhona nokunye



okwengeziwe okumayelana nezitshalo ezikahle ezingatshalwa. Njengoba imisele iye igcwale inhlabathi ngokuhamba kwesikhathi, kuye kudingeke ukuthi ibuye ikhishwe ukuze umsele wakho uhlale ukulungele ukwenza umsebenzi wawo.

Ama Swales

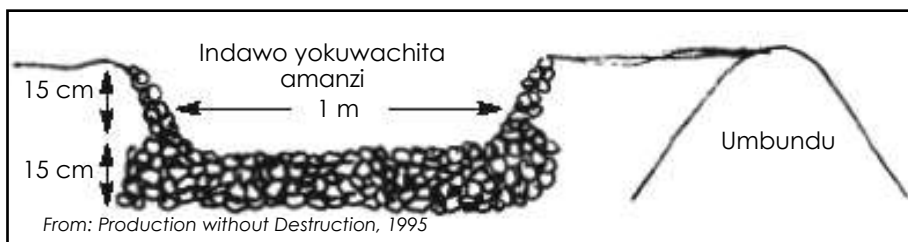
Ama "Swales" kanjalo nawo ayimibundu eyakhiwa inqumise kabili



entabeni. Umehluko lapha ukuthi inhlabathi ikhishwa ithelwe ngezansi, hayi ngenhla. Lena yindlela ekahle yokubamba amanzi endaweni yakho. Ngalendlela amanzi ungawabamba ngokuphindwe kabili uma uqhathanisa nemibundu (contours) echazwe ngenhla.

Ama "swales" awaholeli ekuthini ugcine usunamachitshana njengoba kwenzeka kulokhu okuchazwe ngenhla. Izindonga zama "swales" zitshalwa izitshalo ezithanda amanzi, kanye nalezo eziphila isikhathi eside. Uma kuya ngokuya kugcwala inhlabathi emseleni, kuye kufuneke ukuthi ibuye ikhishwe.

Izindonga zemibundu kufanele ukuthi zakhiwe ziphakame ukuze amanzi angeqi nangeshwa ngaphezu kwayo. Uma kukhona ingozi yalokhu, kumele ukuthi kwakhiwe indawo yokuwachitha amanzi. Lokhu kuzokwenza ukuthi amanzi angezi mawala ukuya ezansi.



2. Ukuchelela engadini: Kangakanani, nini nanini?

Eyodwa nejwayeleke kakhulu Indlela yokunisela emosa kakhulu ukuthi unisele ngamanzi amancane yonke ingadi kanye noma kabili ngosuku noma nsukuzonke noma kabili. Kuyazeka ukuthi abantu bakwenza lokhungo becabanga ukuthi “okungenani zonke izitshalo zithola imbijana yamanzi.” Loluhlobo lokunisela mbijana eqinisweni lingukumosa okukhulu ngoba chishe wonke lawomanzi ahamba nomhamuko asuke esemhlabathini ophezulu awenzilutho olutheni. Amanzi angashonile phansi abanga ukuba nezimpande zingagxili emhlabathini; okusho ukuthi okungukuthi izitshalo zethu kungablula ukuwa. Esikhundleni salokho singafaka amanzi anele ngesikhathi sinciphise izikhathi zokunisela. Singazama ukufaka amanzi amaningi bese seqisa usuku sibone ukuthi lokho kubanjani. Uma sikhula izitshalo njengesipinashi esesikhulile noma ikhabishi eseliphakathi nokukhula singanisela kakhulu kanye ngesonto.

Ukunisela ngokujulile

Sonke siyazi ukuthi izitshalo zingekhule ngaphandle kwamanzi. Uma izitshalo zithola amanzi anele zikhula zingxile zibe nezimpande eziqinile okusho ukuthi zizokhiqiza kakhulu ziqine zibe namakhasi nezithelo. Uma zithola ingcosana yamanzi aphelela nje phuzulu ngesikhathi zonke izimpande azizukushona phansi izitshalo zakho angeke zikwazi ukumelana nembalela noma zizokufa ngesikhathi seshisa.

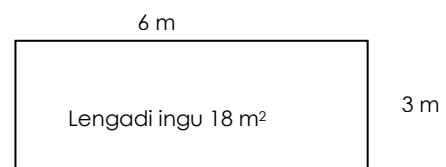
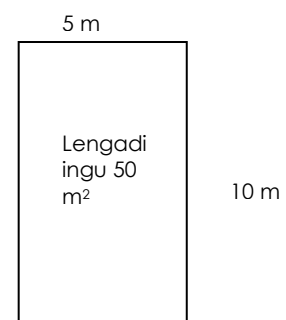
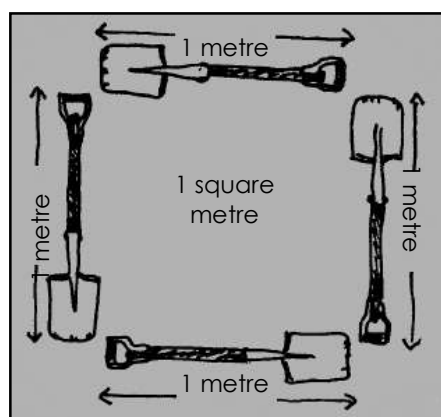
Ukwenza ukunisela okuthe thuthu hlukanisa ingadi yakho izigatshana bese unisele ngokujulile izinsuku ezine (4) kuyakweziyisikhombisa (7). Lokhu kuzovumela amanzi amaningi ukuba ashone phansi bese ayingcosana ahamba nomhwamuko.



Qaphela: ukunise okungxile kungenzeka ngokweqile. Uma amanzi ezokwehla kakhulu izimpande zingekwazi ukufinyelela kuwona. Futhike leli elinye lamaphutha kunokuthelela kancane kakhulu.

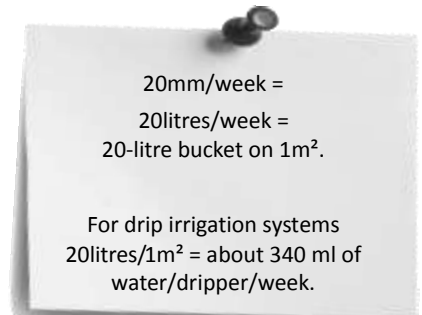
Sisebenzisa ukuthelela kakhulu ngoba sizama ukuthi izimpande zezitshalo zethu zingxile emhlabathini. Ukunisela ngamanzi amaningikungabi njalo kubaluleke kakhulu.

Njenganelula elifushane izithelo zidinga ngamanzi amanzi angu 20mm ngesonto. Lokhu kusho ukuthi kudingeka ufake u 20 litres endaweni eyisikwele samahalavu amane (1x4 spades).



20mm/ ngesonto uyisiqalo esihle ohlelweni lethu kodwake ngokwesitshalo akudingeki inani elingaka lamanzi isonto nesonto.

- ❖ Uma kunezimvula izitshalo sidinga ukuchelelwa kancane.
- ❖ Uma izitshalo zisencane zidinga amanzi amancane njengabantwana babantu nje badinga njalo. Abantwana babantu badinga ukuncela njalo emvakwamahora amabili kuya kwamathathu emva kwamasondo amabili bezelwe. Kanjalo nezithombo zakho akumele zome ngakho zihlole izikhathi eziningi ngosuku uma asandakuzitshala.
- ❖ Ngesikhathi izitshalo zakho sezikhijiza izithelo njengomama oncelisayo zidinga ukundla okuningi namanzi.
- ❖ Izitshalo zidinga amanzi amaningi ngoba kusuke kushisa kakhulu. Uma kuyikhathi samakhaza sidinga amanzi amancane.
- ❖ Uma sezikhulile izitshalo njengabantu abadala izitshalo zidinga amanzi amancane.
- ❖ Izitshalo ezisengadini yakho ziba izinhlobo ezahlukene nezingalingani ngakho zonke zidinga amanzi ngezindlela ezahlukene isonto ngalinye.



Ehla kangakanani amanzi ukuya phansi?

Indlela elula ukufaka insimbi emfishane uyishinise embhedeni wakho amahora ambalwa emvakokuthelela ngesikhathi amanzi eseshone phansi emhlabathini. Insimbi ingena kalula emhlabathini omanzi ize ifike phansi emhlabathini owomile kungumqondo omuhle wokubona ukuthi amanzi ehle kangakanani ukuya phansi. Hlanganisa nendlela yokuthi izimpande izitshalo zakho zehla kangakanani bese uthatha isinqumo sokuthi amanzi asenele yini. Uma ngabe uyawakala amanzi emvula lokhu ungakuhlola ngama millimetres. 1mm wemvula ulingana no 1 litre wamanzi endaweni engu 1m².

Umthetho wokuchelela

Usuku nosuku uchelela nini nakanjani izithombo zakho ekugcineni kwencike ekutheni angakanani amanzi owasebenzisayo. Lapha sinemithetho embalwa.

- ❖ Qala iskhathi sokutshala Umhlabathi wakho umantiswe okungenani ngango 1mm ukushona. Ikakhulu ngesikhathi komile nezimvula ziyingcosana izinyanga ezibalwa. Ekuqaleni izimpande ezisencane angeke zifinyelele kulawo manzi kodwa amanzi azogcineka bese izithombi ziyawamunca ekuhambeni kwesikhathi sonyaka uma sezidinga amanzi angaphezulu kowafakile.
- ❖ Izithombo zakho zinikeze amanzi amaningi kubekanye ngesonto. Ezikhathini ezishisa kakhulu kufanele usifinyeze lesisikhathi kube kanye njalo ezinsukwini

ezintathu, faka amanzi anele onesiqiniseko ukuthi ashone phansi emhlabathimi ayi into ezothathwa ngumhwamuko nje emhlabathini wakho ongaphezulu ongu 10-15cm. Ungasebenzisa isembozo ukunciphisa ukuhwamuka komhlabathi.

- ❖ Zama ukunisela ngamathonsi amancane njengaweshawa kunamathonsi amakhulu (azogxisha umhlabathi wakho) noma ageleze kahle kunokuba ageleze kakhulu angabangela ukumuka komhlabathi wakho izimpande bese ziyalimala.
- ❖ Thela wonke umbhede ngamanzi. Uma zonke izitshalo zithola amanzi ngendlela elinganayo ungathola izitshalo eziningi ngethinsi ngalinye ngesikhathi ezinye zithola ingcosana yamanzi zizokunika isivuno esincane.
- ❖ Bheka ukale gcina izilinganiso zenani lamanzi ochelela ngawo ugcine nenani lamanzi emvula enile usuku nosuku nanokuthi amanzi ehla aphinde anyuke kanjani ethangini lakho. Minyaka yonke ungaleza libe ngono izinga lamanzi akho ngokuqoqa ithonsi nethonsi. Njalo gubha emva kwemvula nemvula ukuze ubone ukuthi amanzi oshone kangakanani emhlabathini. Kwenze lokhu uze ube nokuqonda kabanzi ukuthi ubanjani uma uchelelwa noma unethwa yimvula uqhubeke nokuhlola uze ubone ukuthi umhlabathi wakho ongaphezulu usuqala ukoma yini.



Umsebsnzi wokuqala 1

Ngabe angakanani amanzi adingwa ingadi yakho?

Inhloso

Ukwakha umgomo wokuthi mangaki amabhakede ngesonto nokundla ingadi yakho ekudingayo ngokuthi angakanani amanzi ongawathola emvuleni.

Nqubo

1. Qisekisa ukuthi uyazi kahle lemithetho emibili futhi uyikhumbula kahle.

Imvula enile:

Uma ingu 1mm imvula enile kusho ukuthi ingadi yakho ithole amanzi angango 1 litha indawo engu 1mx1m.

Yonke imvula 1mm ilingana no 1 litha nge m²

Umthetho uthi: Yonke imvula 1mm ilingana no 1 litha nge m².

Ukuchelela ingadi:

Chishe ingadi yonke idinga manzi angaba ngu 20mm ngesonto.

Ukunikeza amanzi angu 20mm ngesonto kudingeka ufake u 20 litha ubemunye wamanzi ngesonto indawo engango 1mx1m umbhede osengadini.

Umthetho uthi: **Ibhakede elilodwa elingu 20 litha wamanzi ngesonto kuyoyonke indawo engu m² yombhedi osengadini yakho.**

2. Manje sebenzisa umthetho ukuthola ukuthi mangaki amabhakede amanzi ongawasebenzisa embgedeni engu 10 etshaliwe 1mx6m owadingayo.
3. Mangaki amabhakede ngosuku uma umnini ngadi echelela usuku nosuku izinsuku eziyisithupha ngesonto.
4. Ngabe kufanele umnikazi wengadi awahlukanise kuyoyonke imibhede nsukuzonke na?

Izimpedulo:

2. Amabhakede angamashumi ayisithupha (60) angu 20 litha ngesonto.
3. Amabhakede iyishumi ngosuku alingana chamashi ne dramu elilodwa elingu 200 litha ngosuku.
4. Qha nomakanjani qhabo yonke imibhede ongayifaka ikotshana ingoma ngokukhulu ukushesha-konke ukusebenza okunzima nokusaphaza amanzi ayigugu. Kungcono kakhulu: ukwehlukanisa ingadi yakho izizgaba eziyisithupha 6 bese uchelela izigatshana esisodwa ngosuku kuthi ngosuku olulandelayo uthuthukele embhedeni olandelayo. Ezikhathini ezishisa kakhulu yandisa amanzi onisela ngawo ngengxenye yokuthathu kokukodwa ngosuku umakunesidingo yandisa amabhakede insela ngawo ngosuku.

Inkulu kanganani ingadi yakho? (Khumbula wenze imibhede. Asikho izidingo sokufaka izindlela ekukaleni kwakho)	Mangaki ama litha amanzi adingwa ingadi yakho?	Bangaki o 20 litha bamabhakede abadingwa ingadi yakho ngesonto?
10 m ²	200 litha ngesonto	10 amabhakede ngesonto
20 m ²	400 litha ngesonto	20 amabhakede ngesonto
30 m ²	600 litha ngesonto	30 amabhakede ngesonto
40 m ²	800 litha ngesonto	40 amabhakede ngesonto
50 m ²	1000 litha ngesonto	50 amabhakede ngesonto
60 m ²	1200 litha ngesonto	60 amabhakede ngesonto

Ukuphathwa kwamanzi agciniwe

Kungumqondo omuhle ukuqala isikhathi sokulima amathangi akho ngisho aphantsi emhlabathini. Icebo lethu lahlukile ngesikhathi zemvula nezokoma.

Icebo lokunisela esikhathini zokomisa kwezulu

Ebusika lapho kungani mvula kunengcosana yezitshalo. Mhlawumbe iyana imvula kodwa ayanele ukukhulisa izitshalo zakho zizezivunwe. Ekuqaleni izitshalo zikhula kahle ekugcineni ziyafa singakafiki isikhathi sokuthi zingadliwa.

Isu langesikhathi komile: EKUQALeni AGCWELWE EKUGCINENI APHELILE

1. Qala isikhathi esingenazimvula ngombhede wakho ombiwe kahle omanzi namathangi akho egcwele amanzi. Ungazama ukusebenzisa amanzi akho uBusika bonke ngendlela othanda ngayo ungathi uyoqenda uBusika cishe eseyophela.
2. Uma unokukhathazeka ngokuthi amanzi angashe akuphelele ngaphambi kokuphela kwesikhathi sokoma tshala ingxenya encane yengadi yakho.
3. Thatha isinqumo sokuthi uzochelela izikhathi ezingaki engadini yakho ngesonto. Hlukanisa ingadi yakho izigatshana ezilinganayo (Isibonelo uma uhlele ukuchelela kahlanu engadini yakho yehlukanise izingxenya ezinhlanu (5).
4. CHELELA INGXYENYE EYODWA NGOSUKU ENGADINI YAKHO, ungazami ukuchelela ngamanzi amancane imibhede yengadi yakho nsukuzonke. (ngaphandle kwezimbewu nezithombo ezidinga amanzi amancane kanye noma kabili ngosuku zize izimpande zikhula ngokwanele zikwazi ukuhambisana nokuchelelwa mbijana.
5. Bheka ukuthi angakanani amanzi asethangini lakho, ulinganise ukuthi angakuqhuba kangakanani ngaphambi kokufika kwezimvula. Lokhu kulobe phansi nsuku zonke uzokwazi ukuthathela kukho ngonyaka olandelayo.
6. Uma kubukeka sengathi amanzi akho azokushodela bheka ukuthi iziphi izitshalo ezibaluleke kakhulu kuwena qhubeka nazo nalawo manzi osele nawo, Kungcono ukulahlekelwa ingcosana yemibhede kunokuvuna kanzima kuyoyonke imibhedeni yakho. Yiba nakho emqondweni wakho ukuthi kunohlobo oluthile lezitshalo oludinga amanzi amancane kunezinye Isibonelo ikhabishi lidinga amanzi amancane kunesipinashi. Ngakhoke ezinkathini ezimbi yiba nezitshalo zesipinashi eziyimbijana nekhhabishi eliningi.

Icebo lokunisela ezikhathini zemvula

EHlobo kujwayeleke ukuthi kube noxhaxha lwezimvula, kodwa kweminye iminyaka kuyoma kakhulu. Izikhathi ezinzima kakhulu kulapho kubanesikhathi eside sesomiso okukanye kube nezimvula ezinhle enyakeni ilaphoke amanzi owagcinile ekusiza khona ukuphephisa izitshalo zakho. Kanzima ukuthi ungabona kanjani ukuthi lonyoka uzoba nezimvula ezinhle noma ezimbi, ngakho sifanele silungiselele izikhathi ezimbi kakhulu.

Icebo esikhathini sonyaka esimanzi: QALA UNGENALUTHO GCINA EGCWELE

1. (Emaphuzwini amabili kuya kwamahlanu 2-5 angena lapha futhi)
2. Uma kunokwenzaka mantisa umbhede wakho uma utshala. Amathangi akho angacishe aphele uma uwasebenzise ngendlela ngesikhathi lomisile , kodwa lingagcwala ngokushesha ezimvuleni ezimbalwa zokuqala.
3. Bhalansisa ukuchelela kwakho nenani lwezimvula ezinile, ngakho unganiseli uma singekho izidingo. Khumbula izibalo ezibekwe ngenhla.
4. Maphakathi nesimo sezulu ezishisa kakhulu Uzodinga ukunisela kakhulu, kodwa kufanele kube ligcwele uzoliqueda ngesikhathi ubhekene nezikhathi zokomisa kwezulu lizophindeliligcwale. Okungenani lthangi lakho fanele likwazi ukugcwala noma kabili ngesikhathi saseHlobo lifanele libe ligcwele Ekuqaleni koBusika.

3. Indlela Ephephile Yokunakekela Ithangi



Amathangi womabili wokuvuna amanzi emvula phansi nangaphezulu aligxathu elikhulu lokutshala izimali emakhaya. Kubaluleke khakhulu ukubamba iqhaza ukuqinisekisa ukuthi Ithangi lakho ulingcina lihlanzekile futhi liphephile ulivikele nasemililweni. Uma amathangi lakho ulinakekela ngendlela azokunika amanzi engadi yakho.

Ithangi Lesifulelo

Ithangi lokukhongozela amanzi esifulelwani kumele okungenani ulihlanze kanye ngonyaka. Wonke amathangi afakwe amaleli (imikhwelo) ukuze kubelula ukungena uphume (ukwehla wenyuke).

Umelwe ubeke amatshe noma ukhonke ngaphansi kumpompi ukuze kugwemeke ukuguguleka komhlabathi nomonakalo ongabangwa udaka ebaleni (egcekeni) lakho. Ufanele ukubeka isitsha sokukhongozela amanzi ngoba ithonsi nethonsi libalulekile akungabi namanzi- ama egcekeni eduze nendlu yakho. Amanzi achincayo abayinkundla yomiyane



Umelwe ubeke amatshe noma ukhonke ngaphansi kumpompi.

angabanga nezifo eziningi.

Omaligada

Omaligada kufanele bahlangane kungathi basondela khakhulu esifulelweni ukuqinisekisa ukuthi wonke amanzi aginqika esifulelweni awela kumaligada awadingikeli emhlabathini. Uma umaligadakufika isiskhathi sokuba uxege ubophe ngocingo ukuze uqine ubuyeke esimeni sawo. Kunconywa ukuba uwususe umaligada wakho uma kuba nezexwayiso zokukhithika kweqhwa elikhulu ngoba isisindo seqhwa singawu gobisa umaligada.



Omaligada kufanele bahlangane kungathi basondela khakhulu esifulelweni ukuqinisekisa.

Umaligada kufanele uhlolwe ukuthi awuvzi yini. Ukuvuza kungavaleke nge silicon. Isilicon ungayithenga ezitolo eziseduze nawe ngemali engu R20 "laphokudayiswa khona izinsimbi zezimoto" ezitlo nasezotolo zempahla yokwakha. Kufanele uhlanze umaligada wakho ngokuyisidingo ukuze amanzi asethangini lakho agcineke ehlanzekile. Ngesikhathi sezimvula kunconywa ukuba kanye njalo ngenyanga umaligada wakho.

Amathangi aphansi

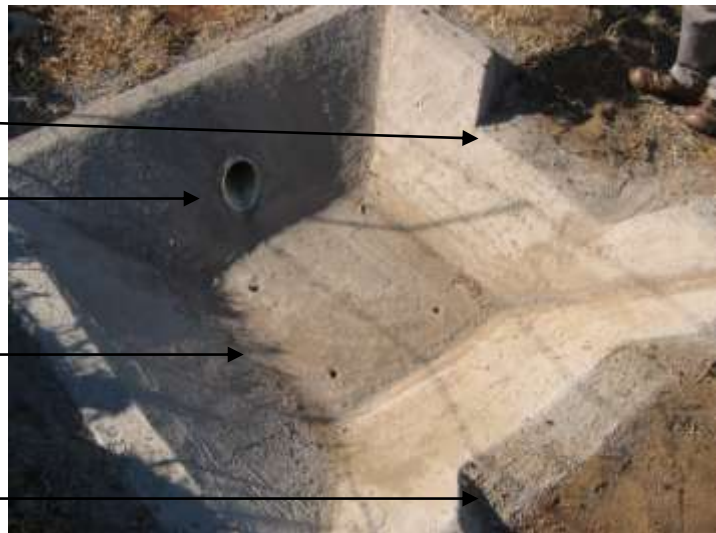
Amathangi akho okuvuna amanzi emvula aphansi oplastiki enziwe ahluka. Khumbula ukuthi amanzi emvula owavuna ngethangi laphansi awaphuzwa.

Anendawo yokukhipha amanzi uma egcwala kulesitsha sokukhongozela.

Kunepayipi elisa amanzi ethangini.

Kunesithiyo esenzelwe ukuthi kungangeni umhlabathi omuningi.

Isithiyo isona esifaka amanzi emvula emathangini akho aphansi futhi uma egcwala khakhulu abe ngendlela yokuchitheka.



Silt trap leading to underground rainwater harvesting tank also serves as an overflow.

Hlanza Isithiyo sakho ngemuva kwemvula ngokusebenzisa isipeto. Uhlole njalo ukuthi umsele ohambisa amanzi esithiyweni ukuthi akukho yini okuwuphazamisayo nga usawaletha ngendlela iyiyo amanzi. Uthintithe nesisefo esisepayipini eliya emathangini akho.

Kubaluleke khakhulu ukuvikela amathangi akho aphansi ezinkomeni. Uma izinkomo zidla eduze namathangi abiye ngocingo noma ubeke ameva awazungeze amathangi akho. Ngoba uma inkomo enkulu ingagibela phezu kwamathangi ingawabulala.



Hlanza Isithiyo sakho ngemuva kwemvula ngokusebenzisa isipeto.

Futhi kuyinto ebaluleke khakhulu ukuvikela amathangi akho emlimweni. Kunconywa ukuthi usike utshani obuseduze namathangi noma ucente ibanga elingamanyathelo amathathu (3m) uzungeze amathangi akho. Kufanele ukuba ukhanda ibhanda ukugwema umlilo wequbula.

Susa udoti osesivalweni esingaphansi ethangini lakho eliphansi. Qaphela ukuthi ungalimazi valve efakwe ngaphansi efakwe ethangini.



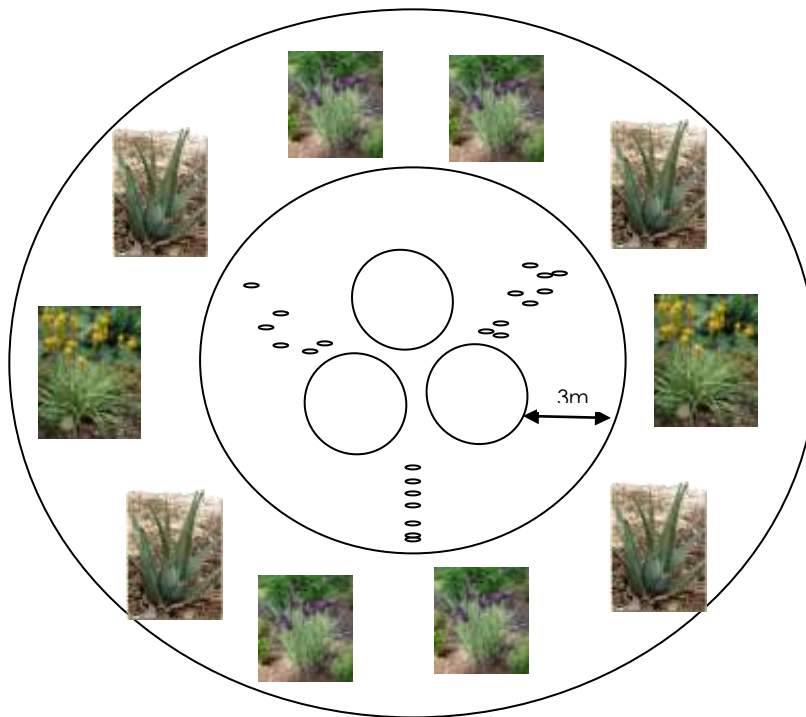
This was a storage area at a JoJo factory. Notice the circles where the tanks once stood.

Wonke amathangi akho anezingidi nezihluthulelo ngakhoke ungaqinisekisa ukuphepha kulabobantwana abangazama ukuvula amathangi. Uzodinga ukuwavula amathangi akho noma ungeke uvame Kunconywa ukuba uwavikele ekugqwaleni (ekuluseni). Lokhu ungakwenza ngokuthi ugcobise izingidi zakho ngamafutha okupheka ukalakatani enye Indlela ungalisonga (ungaligoqa) ngo plastiki noma uwavale ngalokho esibamba ngayo amaphepha amakhulu ezimbobeni lapho ufaka khona isihluthulelo.

Kuncike ekutheni igceke lakwakho limi kanjani mhlawumbe kungathi emhlabeni ozungeze amathangi akho wakhe imibundu (indunduma) ukugwema ukuguguleka komhlabathi. Lokhu kusho ungabi nomsebenzi oyingcosana isikhathini eside kunokuba ungalokhu uzama ukulungisa indawo yakho ezungeze amathangi akho. Khumbula lokhu Kubaluleke kakhulu ukungawavumeli amanzi ukuba ame eduze ngethanga lakho akhandele amanzi Indlela yokwe mdlula eceleni angaqondi emathangini akho.



Qaphela ukuthi ungalimazi valve efakwe ngaphansi efakwe ethangini.



In this yard, the tanks are surrounded by 3 metres of bare ground for fire protection. Three stone lines help to keep the soil around the tanks shaped to move water away. In the outer circle, aloes, irises, and bulbinella also help to retain the shape of the land as well as add extra fire protection.

Isigwedlo sesandla

Lamathangi angaphansi komhlaba afakwe Ipayipi elinesigwedlo sesandla. Lesisigwedlo esahlukile senziwe ngendlela elula yokug-wedla amanzi aphume kujojo angene esitsheni sokunisela.

Kubaluleke khakhulu ukuba ipayipi elimnyama uligcine lisembotsheni yethangi kungcola okungena kujojo wakho. Gcizelela nakubantwana bakho ukuba bangahlohli izinduku noma udoti ethangini ngoba udoti uzovimba noma icinanise okungaba kubi khakhulu kulimaze Isigwedlo sakho.

Qaphela umonakalo wodaka esithombeni. Ukugwema lenxovanxova beka amatshe emhlabathini lapho kuconsela khona amanzi. Loku futhi kuzokusiza ukugcina umhlaba wakho usesimeni esihle.



uBaba Tladi uyakhombisa usebensiza kanjani isigwedlo sesandla.

Ukuchelela engadini: Kangakanani, nini nanini?

Eyodwa nejwayeleke kakhulu Indlela yokunisela emosa kakhulu ukuthi unisele ngamanzi amancane yonke ingadi kanye noma kabili ngosuku noma nsukuzonke noma kabili. Kuyazeka ukuthi abantu bakwenza lokhungo becabanga ukuthi “okungenani zonke izitshalo zithola imbijana yamanzi.” Loluhlobo lokunisela mbijana eqinisweni lingukumosa okukhulu ngoba chishe wonke lawomanzi ahamba nomhamuko asuke esemhlabathini ophezulu awenzilutho olutheni. Amanzi angashonile phansi abanga ukuba nezimpande zingagxili emhlabathini; okusho ukuthi okungukuthi izitshalo zethu kungablula ukuwa. Esikhundleni salokho singafaka amanzi anele ngesikhathi sinciphise izikhathi zokunisela. Singazama ukufaka amanzi amaningi bese seqisa usuku sibone ukuthi lokho kubanjani. Uma sikhula izitshalo njengesipinashi esesikhulile noma ikhabishi eseliphakathi nokukhula singanisela kakhulu kanye ngesonto.

Ukunisela ngokujulile

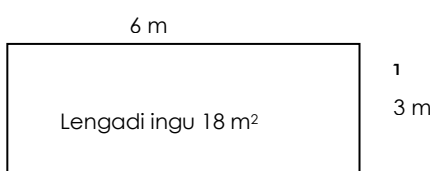
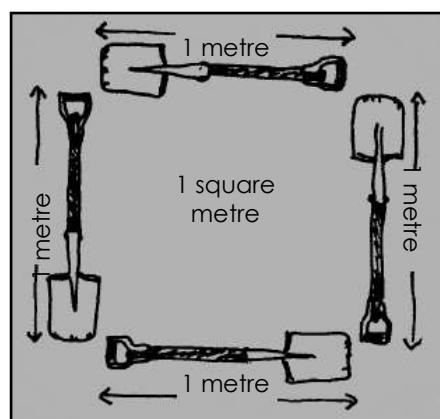
Sonke siyazi ukuthi izitshalo zingekhule ngaphandle kwamanzi. Uma izitshalo zithola amanzi anele zikhula zingxile zibe nezimpande eziqinile okusho ukuthi zizokhiqiza kakhulu ziqine zibe namakhasi nezithelo. Uma zithola ingcosana yamanzi aphelela nje phuzulu ngesikhathi zonke izimpande azizukushona phansi izitshalo zakho angeke zikwazi ukumelana nembalela noma zizokufa ngesikhathi seshisa.

Ukwenza ukunisela okuthe thuthu hlukanisa ingadi yakho izigatshana bese unisele ngokujulile izinsuku ezine (4) kuyakweziyisikhombisa (7). Lokhu kuzovumela amanzi amaningi ukuba ashone phansi bese ayingcosana ahamba nomhswamuko.



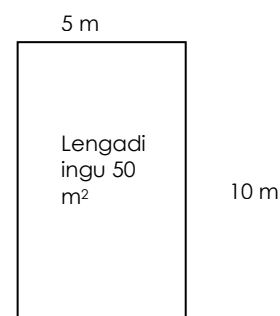
Qaphela: ukunise okungxile kungenzeka ngokweqile. Uma amanzi ezokwehla kakhulu izimpande zingekwazi ukufinyelela kuwona. Futhike leli elinye lamaphutha kunokuthelela kancane kakhulu.

Sisebenzisa ukuthelela kakhulu ngoba sizama ukuthi izimpande zezitshalo zethu zingxile emhlabathini. Ukunisela ngamanzi amaningikungabi njalo kubaluleke kakhulu.



Did you know that plants can also suffer if there is too much water around their roots all the time? If the soil is water logged, the roots don't get enough air. Plants need well-drained soils to prevent the roots from rotting.

Njenganelula elifushane izithelo zidinga ngamanzi amanzi angu 20mm ngesonto. Lokhu kusho ukuthi kudingeka ufake u 20 litres endaweni eyisikwele samahalavu amane (1x4 spades).



20mm/ ngesonto uyisiqalo esihle ohlelweni lethu kodwake ngokwesitshalo akudingeki inani elingaka lamanzi isonto nesonto.

- Uma kunezimvula izitshalo sidinga ukuchelelwa kancane.
- Uma izitshalo zisencane zidinga amanzi amancane njengabantwana babantu nje badinga njalo. Abanwana babantu badinga ukuncela njalo emvakwamahora amabili kuya kwamathathu emva kwamasonto amabili bezelwe. Kanjalo nezithombo zakho akumele zome ngakho zihlole izikhathi eziningi ngosuku uma asandakuzitshala.
- Ngesikhathi izitshalo zakho sezikhqiza izithelo njengomama oncelisayo zidinga ukundla okuningi namanzi.
- Izitshalo zidinga amanzi amaningi ngoba kusuke kushisa kakhulu. Uma kuyikhathi samakhaza sidinga amanzi amancane.
- Uma sezikhulile izitshalo njengabantu abadala izitshalo zidinga amanzi amancane.
- Izitshalo ezisengadini yakho ziba izinhlobo ezahlukene nezingalingani ngakho zonke zidinga amanzi ngezindlela ezahlukene isonto ngalinye.

20mm/week is equivalent to 20litres/week which is a 20-litre bucket on 1m².

For drip irrigation systems 20litres/1m² equates to about 340 ml of water/dripper/week.

Ehla kangakanani amanzi ukuya phansi?

Indlela elula ukufaka insimbi emfishane uyishinise embhedeni wakho amahora embalwa emvakokuthelela ngesikhathi amanzi eseshone phansi emhlabathini. Insimbi ingena kalula emhlabathini omanzi ize ifike phansi emhlabathini owomile kungumqondo omuhle wokubona ukuthi amanzi ehle kangakanani ukuya phansi. Hlanganisa nendlela yokuthi izimpande izitshalo zakho zehla kangakanani bese uthatha isinqumo sokuthi amanzi asenele yini. Uma ngabe uyawakala amanzi emvula lokhu ungakuhlola ngama millimetres. 1mm wemvula ulingana no 1 litre wamanzi endaweni engu 1m².

Umthetho wokuchelela

Usuku nosuku uchelela nini nakanjani izithombo zakho ekugcineni kwencike ekutheni angakanani amanzi owasebenzisayo. Lapha sinemithetho embalwa.

- ❖ Qala iskhathi sokutshala Umhlabathi wakho umantiswe okungenani ngango 1mm ukushona. Ikakhulu ngesikhathi komile nezimvula ziyingcosana izinyanga ezibalwa. Ekuqaleni izimpande ezisencane angeke zifinyelele kulawo manzi kodwa amanzi azogcineka bese izithombi ziyawamunca ekuhambeni kwesikhathi sonyaka uma sezidinga amanzi angaphezu.
- ❖ Provide your plants with a one deep watering each week. In very hot periods you can shorten this to once every three days, but give enough water to make sure that it will soak deep into the ground, and not just evaporate out of the top

10-15cm of your soil. You can also mulch to help reduce evaporation losses. But NEVER give shallow daily wettings to mature plants.

- ❖ Try to give soft, fine showerings rather than big hard drops (which will compact your soil), or gentle flows rather than rapidly running water (which will wash out your soil and expose the plant roots).
- ❖ Distribute water evenly across the planting bed. If all the plants get equal amounts of water, you will be getting the most 'crop per drop'. With uneven water sharing between the plants, those plants that get too much water, use too much 'drop'; while those that get too little water, will give you too little 'crop'.
- ❖ Measure! Monitor! Keep a record of how much water you are giving; how much rain you are getting; and how the level changes in your rainwater tank(s). Every year you will get better at stretching your water to get the most 'crop per drop'. Always dig the day after you have watered to see how deep the wetness goes. Do these until you have developed a good understanding of how your soil reacts to irrigation and rain; and check again whenever you are uncertain whether the deeper soil layers are beginning to dry out.



Activity 1

How much water does the garden need?

Aim

To develop useful 'Rules of Thumb' on how many buckets per week your food garden needs, and how much water you can get from rain.

Instructions

1. Make sure you understand these two rules of thumb, and REMEMBER THEM.

Rainfall:

If 1mm rain has fallen, then 1 litre has fallen on every area of 1m x 1m.

The rule of thumb is: Every 1mm of rain gives 1 litre per m².

Watering the garden:

In most areas, a garden needs about 20mm per week.

To give 20mm per week, we need to give one 20 litre bucket of water per week for every 1m x 1m area of garden beds.

The rule of thumb is: One 20 litre bucket per week for every m² of garden beds.

2. Now use your rules of thumb to work out how many buckets per week a garden with 10 planting beds of 1m x 6m would need.
3. How many buckets is that per day if the gardener waters 6 days per week?

4. Should the gardener try to divide these buckets evenly between all the beds every day?

Answers:

2. 60 buckets (20 litre size) per week.
3. 10 buckets per day, which is the same as one 200 litre drum per day.
4. No, definitely not! Every bed would just get a thin sprinkling and will dry out again almost immediately – all the hard work and precious water to waste. Much better: divide the garden into six parts and water one part per day, moving on to the next part the following day. In very hot periods, water one-third of the garden per day and increase the number of buckets per day if necessary.

How big is your garden? (Remember to just consider the beds. You don't need to include the paths in your measurement)	How many litres per week do you need to water your garden?	How many 20 litre buckets per week does your garden require?
10 m ²	200 litres per week	10 buckets per week
20 m ²	400 litres per week	20 buckets per week
30 m ²	600 litres per week	30 buckets per week
40 m ²	800 litres per week	40 buckets per week
50 m ²	1000 litres per week	50 buckets per week
60 m ²	1200 litres per week	60 buckets per week

Managing stored water

It's a good idea to start the dry season with a full rainwater tank and with water deep in your soil. Our strategies differ for dry and wet seasons.

Irrigation strategy in the dry season

In winter when there is no rain, there are few crops. Sometimes there is some rain, but not enough to see crops through to harvest, so crops may grow well at first, but die before we can eat them.

Dry season strategy: START FULL AND END EMPTY

1. Start the dry season with the trench beds thoroughly wet and the water tank full. You will try to use as much water from the tank as you need to get through the winter, and should end the dry season with the tank nearly empty.
2. If you are worried that your water may run out before the end of the season, plant a smaller portion of your garden in the dry season.
3. Decide how many days per week you will irrigate your garden. Divide the garden in equal parts to be watered every day (e.g. if you are planning to irrigate five days per week, divide the garden into five parts).

4. IRRIGATE ONE PART OF THE GARDEN PER DAY, do not try to give a little bit of water to every bed in the garden every day. (The exception is for seeds and seedlings, which need a small sprinkling once or twice a day until their roots area strong and deep enough to cope with less frequent watering).
5. Watch how much water is in your tank, and estimate how long before the next rain is expected. Write this down every day, so that next winter you can try to benefit from this year's experience.
6. If it looks as if your water will run short, decide which crops are most valuable to you, and keep them going with the water you have left. It is better to lose a few beds than to harvest hardly anything from all your beds. Keep in mind that some types of plants need less water than others; e.g. cabbage needs less water than spinach. So in a crisis you may decide to save fewer spinach plants and more cabbage plants.

Irrigation strategy in the wet season

In summer there is usually an abundance of rain, but some years can be very dry. A very difficult problem is when there are long dry stretches in an otherwise good rainy year, and this is where stored water will help you to save your plants. It is hard to predict when to expect a good or bad rainy year, so we have to plan for the worst.

Wet season strategy: START EMPTY AND END FULL

1. (Points 2-5 above also apply here)
2. If possible, wet your beds thoroughly at planting. Your rainwater tank will be nearly empty if you have made good use of it during the dry season, but it should fill up quickly with the first few rainstorms.
3. Balance your irrigation with the amount of rain that has fallen, so that you do not irrigate unnecessarily. Remember the calculations in the activity above.
4. During really hot dry weather you will need to irrigate more, but by now your tank should be full and you can empty it dealing with these dry spells so that it can re-fill. Your tank should be able to fill up at least twice during the summer season and should be full for the start of the winter season.

Resource Material for Homestead Food Gardeners

Chapter 6: Handouts (isiZulu)

- | | |
|-----------|--|
| Handout 1 | Ukuthuthukiswa komhlabathi wakho (Improving your soil) |
| Handout 2 | Ukwemboza (Mulching) |
| Handout 3 | Umquba wezitshalo wezilwane kanye nongamanzi (Brews for plant nutrition) |
| Handout 4 | Indlela yokuzakhela i - trench bed (Trench beds) |
| Handout 5 | Ukukhiqizwa wezithombo (Seedling production) |

1. Ukuthuthukiswa komhlabathi wakho

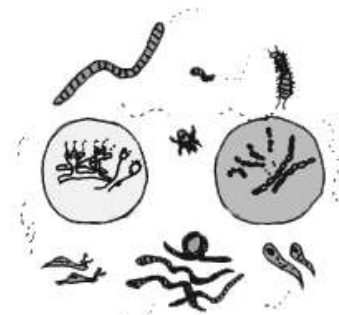


Umhlabathi ophilile

Umhlabathi onempilo umhlabathi ophilile . Unezinto eziningi eziphilayo. Uyashona, uthambile ,kulula ukuwugumba futhi ugcwele umoya kanye namanzi.

Umhlabathi ophilayo uxube izinto eziningi:

- ❖ Inxenye encane yesihlabathi, umhlabathi ocosakele nebumba, okuyizinhlobo ezahlukene zomhlabathi.
- ❖ Inxenye yezinto ezibolayo, amacebhe, utshani, umquba.
- ❖ Okungaboliyo okufana namatshe.
- ❖ Amaminerals afana ne(potassium).
- ❖ Umoya namanzi.
- ❖ Izibolisi: lezi izilwane ezincane zincane kakhulu ukuthi ungazibona futhi zihlala emhlabathini. Zivundisa umhlabathi ngokuthi zindle okubolayo zikushintshe kube ukudla okunothile kwesitshalo. Izilwanyane ezincane ezinjengo msundu, nezinye izilwane nazozihlala emhlabathini.



From: Lessons from Nature

Izinhlobo zomhlabathi

Umhlabathi wakhiwe ngokuvithizeka kwezithako zemvelo kanye nokusansimbi okuvela emhlabeni. Lokhu kutholakala kuyisimo sedwala. Esikhathini eside esandlula amadwala avithizeka aba izinhlayiyane ezincana lokhu kwenziwa izulu, umoya kanye nelanga lihlangene nomoya kanye namanzi. Lokhu kuphenduka kube umhlabathi okwanzi ukusiza izitshalo kanye nezinto ezibolisayo ukuthi zikhule. Njengabantu izitshalo azikwazi ukukhula ngaphandle kwamanzi, umoya kanye nokudla.

Wonke umhlabathi unxube isihlabathi, inzika yodaka kanye nobumba. Umehluko okhona ngenani lesihlabathi, inzika yodaka kanye nobumba yikho okusho indlela umhlabathi obamba ngayo amanzi. Izibonelo zezinhlobo zomhlabathi yilezi isihlabathi, isihlabathi esigadenzima, igadenzima, ubumba olugadenzima kanye nobumba.

- Isihlabathi senza umhlabathi ube uthambe.
- Inzika yodaka iyihlabathi esicolisakele. Ibamba amanzi kanye nokudla kwesitshalo kangcono kunesihlabathi esihhayekile, kodwa lugezeka kalula emhlabathi.
- Ubumba inxenye yomhlabathi ebambelelayo ngakho-ke ibamba amanzi iwahlanganise ndawonye. Ibamba amanzi njengesipontshi.
- Umhlabathi omuhle ilowo obizwa ngokuthi igadenzima ngoba uxube izinto ngokulingana isihlabathi, inzika yodaka kanye nobumba.

Izimo zenhlabathi:


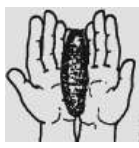



Umhlabathi oyisihlabathi	
Izinto ezinhle ngalomhlabathi	Izinto ezimbi ngalomhlabathi
<ul style="list-style-type: none"> ❖ Kulula ukuwugubha nokusebenza ngawo ❖ Uyashesha ukushisa entwasahlobo ngemuva kobusika ❖ Muhle ezitshalweni ezimila ngaphansi komhlaba ❖ Amanzi nomoya kungena kalula emhlabathini oyisihlabathi 	<ul style="list-style-type: none"> ❖ Uyashesha ukoma ❖ Akuyigcini imvundiso yomhlabathi ❖ Akuwabambi amanzi kahle
Ugadenzima inxube yesihlabathi kanye nobumba	
Izinto ezinhle ngalomhlabathi	Izinto ezimbi ngalomhlabathi
<ul style="list-style-type: none"> ❖ Ubamba amanzi kahle ❖ Muhle ekukhuliseni izimpande ❖ Unezinto ezibolisayo 	<ul style="list-style-type: none"> ❖ Lomhlabathi uyaqina uma womile
UBUMBA	
Tse ntle ka mobu ona	Tse seng ntle haholo ka mobu ona
<ul style="list-style-type: none"> ❖ Ubamba amanzi kahle amanzi isikhathi eside ❖ Ubamba imvundiso kahle 	<ul style="list-style-type: none"> ❖ Kunzima ukusebenza ngawo; uyasinda ❖ Uthatha isikhathi ukuthi ushise entwasahlobo ❖ Uyabambeleva uma umanzi

Ungabona kanjani ukuthi unjani umhlabathi wakho

Ungabona kanjani ukuthi singakanani isihlabathi, inzika yodaka kanye nobumba emhlabathini emhlabathini wakho lokhu ungakwenza ngokuwuzwa umhlabathi wakho. Manzisa umhlabathi bese uwenze ibhola phakathi kwezandla zakho. Phendula lelibhola libe njengevoso. Ungakwazi ukubona ukuthi nhloboni yomhlabathi ngokubuka itebula elingenzansi .

Kubalulekile ukwazi ukuthi uwuhlobo lini umhlabathi wakho. Lokhu kungakusiza ukuthi wazi ukuthi kumele wenzenjani uma ufuna ukuthambisa noma ufuna ukucubuza inhlabathi yakho. Ukucubuza inhlabathi noma ukuthambisa inhlabathi yakho kuyasiza ekutheni inhlabathi ikwazi ukubamba amanzi kanye nomoya omningi, okuyilokho izitshalo ezikudingayo ukuze zikhule. Ukwenza inhlabathi yakho icubuzeke kumele uqubeke ufake umquba omningi, ikhomposi kanye nesembozo. Ungalokothi uhambe lapho usutshale khona okukakhulu kazi uma kumanzi.

Isihlabathi sidinga ukuthi ufake izinto ezibolayo ezengeziwe ukuze sizokwazi ukubamba amanzi kanye nokudla kwesitshalo. Ubumba ludinga ukufakwa izinto ezibolayo ezengeziwe ukuzelikwazi ukubamba umoya ngokwengeziwe bese likhulula ukudla kwesitshalo okukulo. Lonke uhlobo lwenhlabathi ludinga okubolisayo ukuze lithuthukise ukuvunda, noma ukudla kwesitshalo.

Ubukeya kanjani umhlabathi	Izwakala kanjani inhlabathi	Uma uyiphendula ivoso		Umhlabathi unje:
Uyisihlabathi kakhulu	Ihlayekile kakhulu	Ayiphenduki ivoso		Uyisihlabathi kakhulu
Uyisihlabathi nje	Ihlayekile	Iyaphenduka ivoso kodwa kodwa		Isihlabathi
Inxenye iyisihlabathi inxenye ilolongekile	Ihlayekile	Ivoso liyagobeka kancane		Isihlabathi esiyigadenzima
Ilolongekile okukakhulu kazi	Isihlabathi esincane ukulolongeka nje kodwa ayinamatheli	Ivoso likiyagobeka indlela engangohhafu ojikelezayo		Igadenzima noma inzika eligadenzima
Ilolongekile okukakhulu kazi	Isihlabathi esincane ukulolongeka nje kodwa iyanamathela	Ivoso lisakwazi ukujika indlela engaphezu kukahhafu		Ubumba olugadenzima noma isihlabathi esiyibumba

Ilolongekile	Ilolongekile futhi iyanamathela	Ivoso liyagoba lifane nelingi		Ubumba
--------------	------------------------------------	----------------------------------	--	--------

Ukuvunda komhlabathi

Zonke izinto eziphilayo zinezithako zemvelo ezivela emhlabeni. Izitshalo zinezinto ezifana ne hydrogen, carbon, nitrogen, phosphorus, potassium nokunye okuncinyane okwe magnesium, sulphur kanye ne calcium kanye nezinye izithako zemvelo ezincinyane.

Izitshalo zidinga lezinhlalo ezintathu zokudla:

- ❖ **I-Nitrogen (N)** – Yamacembe kanye nesiqu esiphilile iphinde isize nasekukhuliseni;
- ❖ **Phosphorus (P)** – Yezimpande eziphile kanye nokwakheka kwezithelo;
- ❖ **Potassium (K)** – Yempilo kanye nezimbali eziphilile kanye nezithelo.

Izinhlavu ezinkulu zamagama ezikubakake (N, P, kanye no K) zimbizwa ngokuthi izinkombisa zobuthi. Uma uthenga izivundiso noma obunye ubuthi, kusetshenzisa izinhlamvu esikhundleni samagama aphelele.

Zonke lezinhlalo ezintathu zokudla zitholakala ekhomposini kanye nasemqubeni. Ungakwandisa lokukudla emhlabathi ngokuthi wemboze ngamacembe emidumba (njengo bhontshisi, uphizi, uphizi wamajuba kanye nomgambi (isihlahla esinamacembe anameva) comfrey, usebenzisa umanyolo ongamanzi, umsundu kanye nezinto ezibolisayo. Kumele usebenzise umsundu ube izinto ezibolisayo ngokushesha. Lezi izindlela ezahlukene zokuvundisa umhlabathi wakho.

Ezinye zezindlela zokuthuthukisa umhlabathi wakho

Umquba

Zonke izinhlobo zomquba wezilwane ungasetshenziswa. Lokhu kufaka izinkomo, iziklambu, izimbuzi, izigulube, kanye nezinkukhu.

Ukusebenzisa umquba

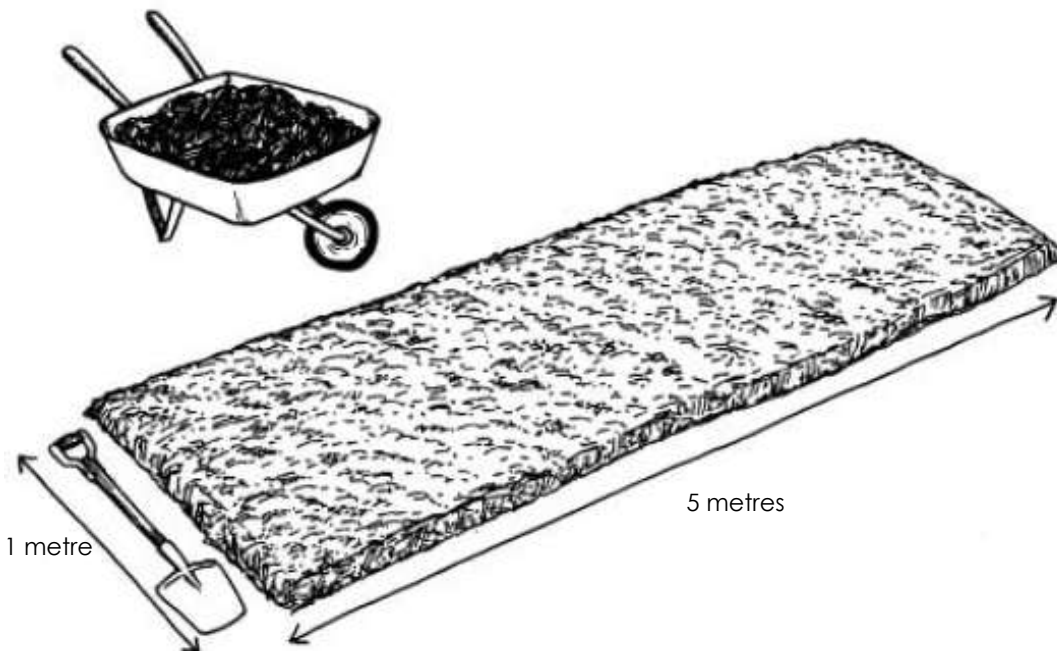
Umquba omuhle ongawusebenzisa ilowo oxutshe notshani kanye nomcamo otholakala esibayeni.

Shanela lokhu ukubeke iqumbi okungenani kanye ngesonto, bese ukwemboza ngotshani noma ngopulasitiki.



Umquba ungafakwa ngezindlela ezahlukene:

- ❖ Ungawusebenzisa uma utshala izithombo, ngokuthi unxube izandla ezimbili kuya kwezintathu zomquba emgodini lapho utshala khona izithombo.



- ❖ Ungambelwa emhlabathini ukuze uthuthukise ukuvunda komhlabathi. Lapha

udinga ukusebenzisa ibhala eligcele (okungango 50 kilogram) embhedeni olingana nemitha eliphindwe kahlanu.

- ❖ Ungasetshenziswa embhedeni oshisayo. Lapho umbhede umbiwa ushone kangango 30 cm, lokhu kulingana nobubanzi besipeto. Bese kumbozwe ngomquba omusha into elingana no 10cm ukushna ngaphansi. Lokhu kulingana nobubanzi besandla sakho. Utshani, ukhulakanye nokubolayo kungafakwa ngaphambi kokuba uvale umgodi ngenhlabathi yaphezulu kuphela. Omunye umquba noma ikhomposi kungahlanganiswa nomhlabathi ngaphambi kokuthi utshale.
- ❖ Lokhu kubizwa ngokuthi imibhede eshisayo ngoba umquba uyashisa ngenkathi ubola emhlabathi. Lokhu kushisa umhlabathi embhedeni wakho. Lokhu kuyangcomeka ezindaweni ezinobusika obubandayo ^{5 metres}.
- ❖ Umquba ungafufuzelwa phezu komhlabathi kanjenge sembozo. Lokhu kunobuhle bokuthi bandisa ukudla kwezintshalo. Umquba ungafakwa enqumbini yekhomposi lokhu kwenza ikhomposi enhle kakhulu.

Ikhomposi

Ikhomposi inxubevane yezitshalo ezimanzi nezomile kanye nomquba obolile lokhu

Izinto ezinhle ngekhomposi

- ❖ Ikhomposi iyisidlo sesitshalo esesilungile, ayidingi ukuvithizwa izinto ezibolisayo kuqala.
- ❖ Ikhomposi ayidali ukhula oluningi, kanjengomquba wezilwane.
- ❖ Ungathola ukudla okuhle ngaphandle kokusebenzisa imali eningi uthena izikhuthazi.

Izinto ezimbi ngekhomposi

- ❖ Ikhomposi inomsebenzi omningi wokuyilungisa nokuyisebenzisa.
- ❖ Ubungakho bekhomposi buncike ekutheni yakhiwe kanjani nokuthi yini esetshenziwe. Uma ingakhiwanga kahle, ngeke ibe ukudla okuhle kwesitshalo.
- ❖ Kungaba nzima ukuthola izinto ezibolayo ozidingayo ukuze wakhe ikhomposi.

kwenza ukudla okunothilekwesitshalo.

khomposi iyasiza ukuthi umhlabathi ukwazi ukubamba amanzi uphinde ugcine izitshalo zingenazo izifo.

Ini oyidingayo ukuze wakhe inqumbi yekhomposi?

Kumele uqoqe lezintoezilandelayo:

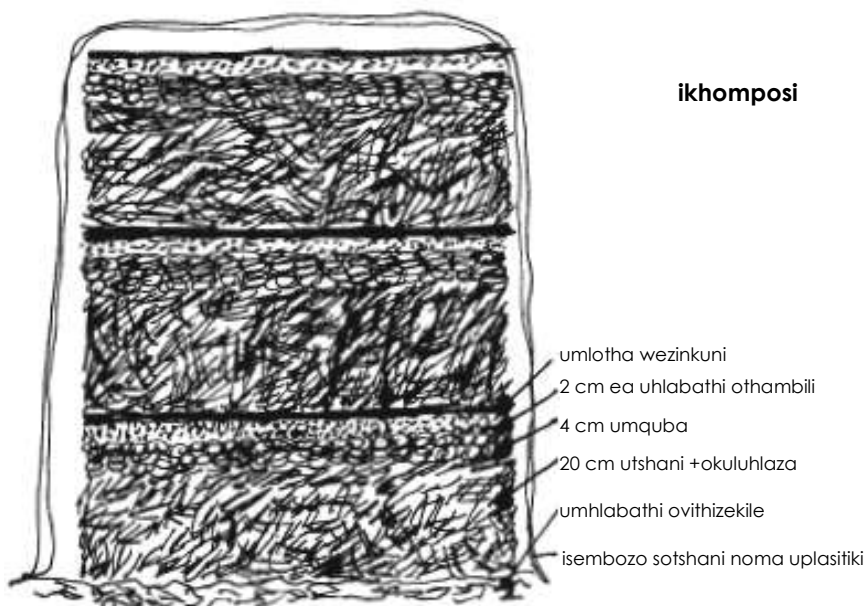
- ❖ Izinhlanga zommbila noma kwezinye izivuno. Lokhu kubizwa ngokuthi insalela

yesivuno.

- ❖ Utshani (obungenayo imbewu)-bungaba hlaza noma obomile.
- ❖ Amacembe ekhabishi kanye nokhula (aluhlaza noma omile) angenayo imbewu.
- ❖ Umquba wezilwane.
- ❖ Umltha wezinkuni.

Ezinye izinto ongazifaka equmbini yekhomposi yilezi: umquba wezinkukhu, amanzi okuwasha, izibi ezitholakala ebaleni, izilwane ezifile, amathambo, uboya, izimpondo kanye nempaphe kubalulelike ukuvaka ucomfrey equmbini yekhomposi.

IZINTO OKUMELE UNGAZIFAKI: Uplastiki, igilazi, insimbi, ukhuni, amabhulethi amadalanoma enye into engaboli (lokhu kusho into engavithiki emhlabathini).



Ungayakha kuphi inqumbi yekhomposi yakho

- ❖ Endaweni esethunzini kodwa hhayi eduze kwesiqu sesihlahla.
- ❖ Ivikeleke emoyeni omkhulu.
- ❖ Emhlathini oqondile.
- ❖ Eduze nengadi yakho naseduze kwamanzi.
- ❖ Kude nezilwane (okukakhulu kazi izingulube, izimbuzi kanye nezinkukhu).

Ungayakha kanjani inqumbi yekhomposi

Isinyathelo sokuqala 1:

Khetha indawo yakho bese uphendula umhlabathi ngeflolongo noma ngekhuba. Indawo kumele ibe ngango 1 mitha uyiphinde ngo 2 mitha (ubude besipeto esisodwa nobubanzi



obungangezipeto ezimbili ubude)

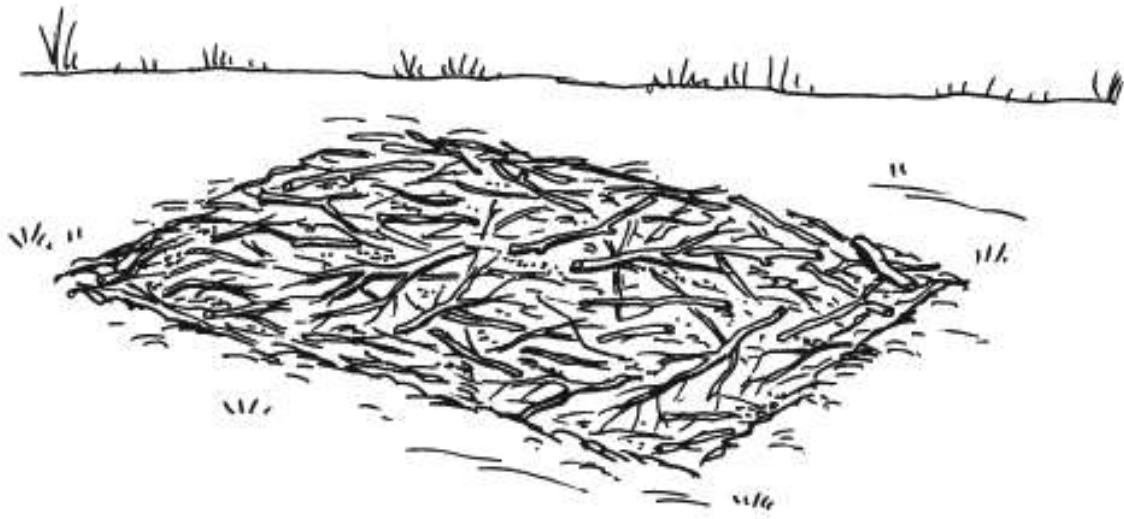
Isinyathelo 2:

Qoba izinsalela zamacembe esivuno, utshani, kanye nokhula ukwenze kube kuncane. Lokhu kufaka i comfrey, ikhabishi, amacembe, ukhula kanye neziqo zommbila. Kumele kuqotshwe kube kuncane kube ngango 10cm ubude. Lokhu kukulingana nobubanzi besandla sakho sivaliwe. Lokhu kungenza ikhomposi isheshe ilunge.



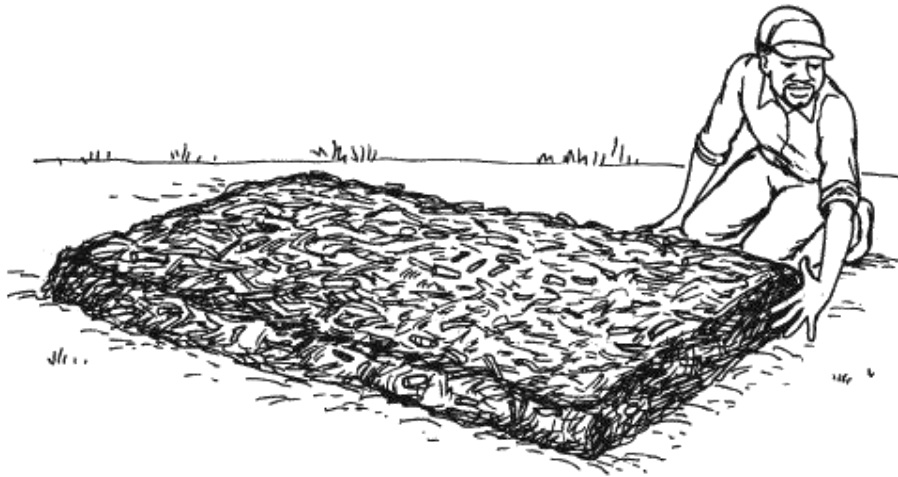
Isinyathelo 3:

Ndlala amahlanvu kanye nezinkunyane phezu komhlabathi owuphendulile.



Isinyathelo 4:

Yemboza lokhu ngenxube oyiqobile, kulingane no 30cm ukushona. Lokhu kuyisandla esisodwa ukushona. Uma unokudala kwasekhishini, kungavakwa lapha.



Isinyathelo 5:

Thela umquba phezulu okungango 4cm ukushona. Lokhu kunobubanzi obungangeminwe embili.



Isinyathelo 6:

Thela umhlabathi phezulu komquba okulingana no 2cm ukushona –ububanzi bomunwe.



Isinyathela 7:

Fafa umlotha wezinkuni ngaphezu komhlabathi. Ungafaka ne lime, bonemeal noma tshe lephosphate, lokhu ku ngafafazwa phezulu.



Isinyathelo 8:

Faka amanzi kule nqumbi aze amanzi avele ngaphansi kwenqumbi.

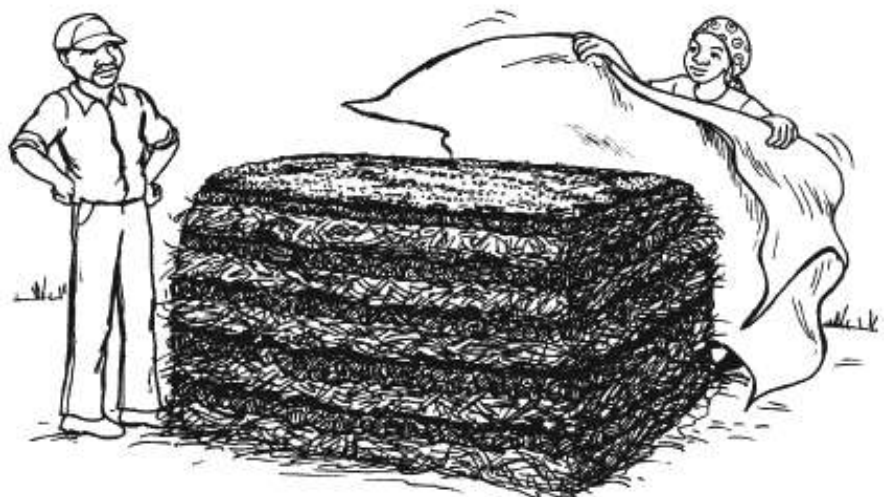


Isinyathelo 9:

Qubeka wakhe inqumbi yakho, ulokhu uphinda ufaka ezinye izinto ngaphezulu, kuze kulingane nesifuba sakho.

Isinyathelo 10:

Kunconyiwe ukuthi uyemboze inqumbi yakho, ungayemboza ngopulasitiki noma amaqungwa noma utshani. Lokhu kusiza ekutheni kugcineke amanzi nokushisa bese kukwazi nokubola. Kuyasiza ekutheni izinkoma zingayihliphizi inqumbi yakho ziyibulale.



Kuhle ukuthi uyiphendule inqaba yakho ngemuva kwamaviki amabili. Uma inqumbi yakho yomile, kumele ufake amanzi. Uma wenza lokhu ikhomposi yakho ingalunga ngemuva kwamaviki angu 6 ehlobo ebusika emavikini angu 8-9 ezindaweni ezineqha, kudingeka uyemboze inqumbi yakho – kungenjalo ngeke kwenzeke lutho.

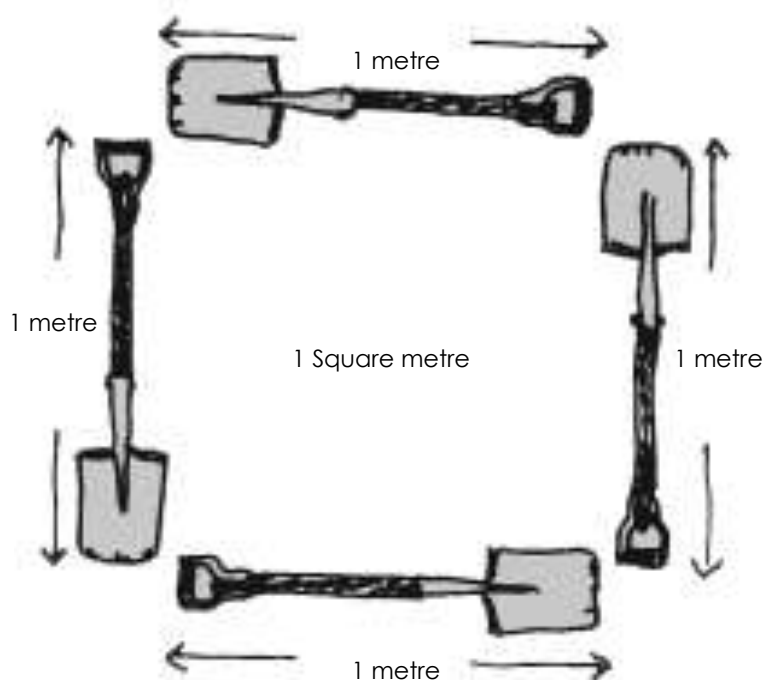


Inini lapho ikhomposi ilunga khona?

Uma kusekhona intushana ephuma emqubeni lokhu kusho ukuthi inqumbi iyabola. Ikhomposi uma isimnyamana lokhu kusho ukuthi isilungile ibukeka ifana nomhlabathi onomswakama. Ngeke libe khona iphunga (uma inephunga futhi ishisa, chabobo akusiyo ikhomposi leyo).

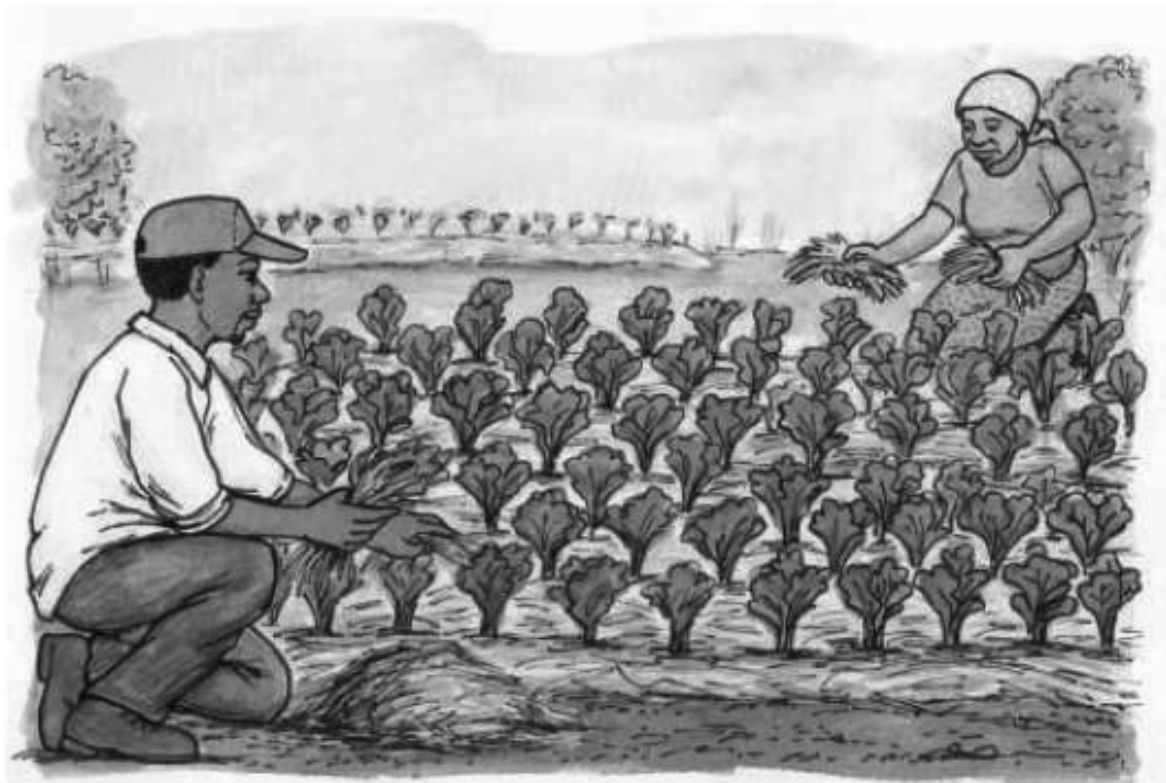
Ukuphathwa kwekhomposi

- ❖ Isitshalo isithombo ngo 2-3 izandla ezigcwele zekhomposi.
- ❖ Mbela ikhomposi emhlabathini: phendula umhlabathi uthambise ukushona okungangesipeto esisodwa. Fafaza izipeto ezingu 4zekhomposi endaweni engango 1 square metre. Mbana kancane bese uyatshala.
- ❖ Sebenzisa ikhomposi njengesembozo ngokuyifafaza yonke indawo emibhedeni.



From: Vikela, May 2003, FSG

2. Ukwemboza



Ukwemboza ukundlala into phezu komhlabathi ongaphezulu. Lokhu kwemboza umhlabathi kuwugcine unomswakama futhi upholile ehlobo. Kugcina umhlabathi ufudumele ebusika.

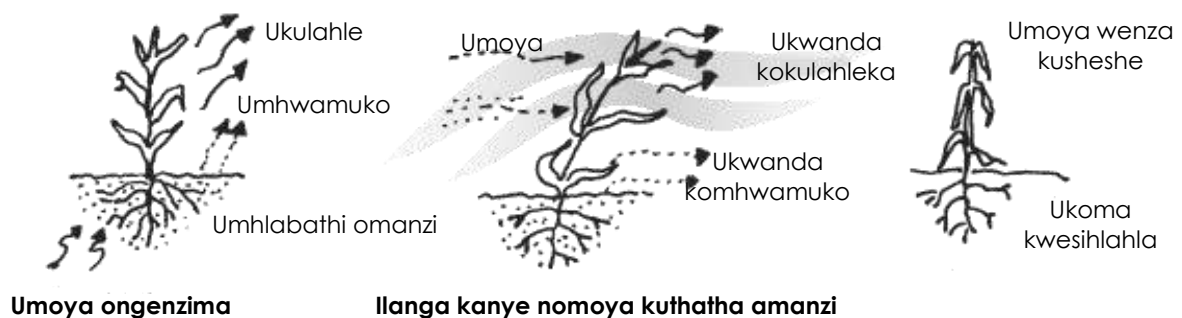
Kungani kumele semboze?

Ukwemboza kunezinto ezimbili okusizisa ngazo:

- ❖ Konga amanzi ,ngoba kuvikela ekutheni ilanga nomoya kungomisi umhlabathi. Lokhu kusho ukuthi uzodinga amanzi amancane ezitshalweni, ngoba amanzi akho awalahleki ngenxa yokushisa kwelanga noma ngenxa yokuphephetha komoya.

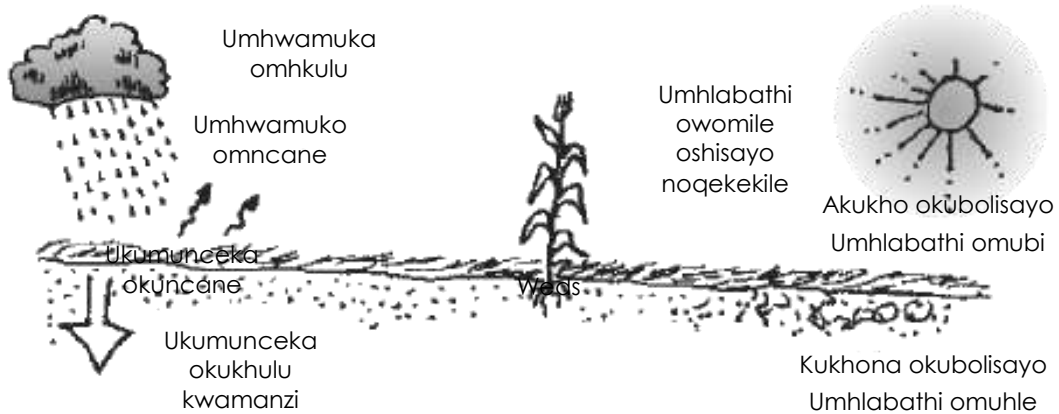
Ukushisa kwelanga kanye nomoya

From: Production without Destruction. Natural Farming Network, Zimbabwe



- ❖ Kungcina umhlabathi ulingana .Ukwemboza kwehlisa ukushisa okukhulu kanye nokuphola okukhulu . Lokhu kwenza kube lula ukuthi izitshalo zikhule.

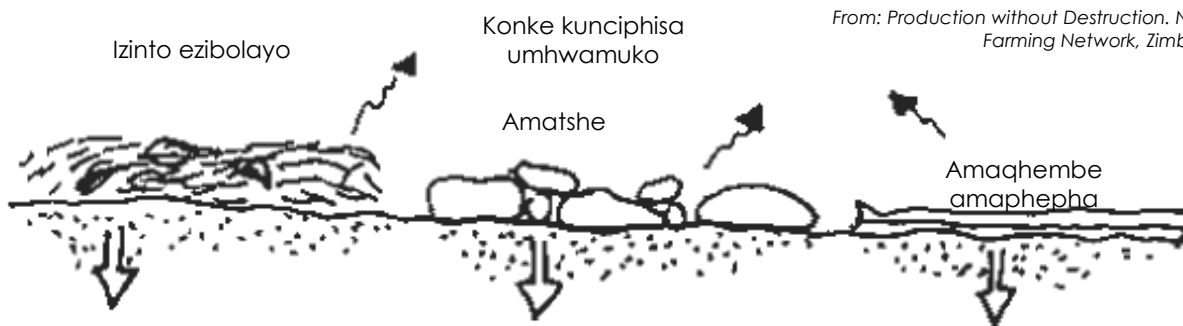
Umhlabathi omboziwe



From: Production without Destruction. Natural Farming Network, Zimbabwe

Ububi bokwemboza	Ubuhle bokwemboza
<ul style="list-style-type: none"> ❖ Kunzima kwesinye isikhathi ukuthi uthole izinto ezanele zokwemboza ❖ Kwesinye isikhathi ukwemboza embhedeni wezithombo kungathikameza ukukhula kwezithombo zamakhalothi . Zingaba ntekenteke ❖ Abanye abantu bacabanga ukuthi ukwemboza akubukeki ❖ Ukwemboza kungabanga iminenke kanye 	<ul style="list-style-type: none"> ❖ Kuvikela ekulahlekeni kwama minerals / nama nutrients umsoco emhlabathini ❖ Kwenza kubekhona ukubola emhlabathini ❖ Kunciphisa ukuba khona kokhula ❖ Kuvikela ekuqekeni komhlabathi okwakha uqheqhe oluqinile ngaphezulu ❖ Izimpande eziqinile zimila phezulu eduze kwalapho kuqala khona umhlabathi. Lokhu kweza kube lula ukuthi isitshalo sithole ukudla kwaso eduze kanye nomoya ❖ Ukubola kwesembozo kungasiza ekuvundiseni umhlabathi ❖ Kuvikela imvula eza ngamandla kanye nokusaphazeka komhlabathi ezitshalweni – lokhu kungafafaza izifo

Ini esingayisebenzisa njengesembozo



From: Production without Destruction. Natural Farming Network, Zimbabwe

Ngokujwayelekile sisebenzisa:

- ❖ Izinto ezisala emasimini (iziqu kanye namacembe okusala umasesivunile. Ungalingi usebenzise izintshalela zesivuno ebesinesifo. Uzothelela umhlabathi wakho kanye nezitshalo zakho entsha.
- ❖ Ukhula oluzuphuniwe lwase lwabekwa ukuze lome.
- ❖ Utshani basemasimini. Qinisekisa ukuthi usebenzisa utshani obomile. Utshani OBULUHLAZA buthatha konke ukudla emhlabathini wakho bese izitshalo zakho ziba nokudla okuncane.
- ❖ Amatshe alucwephe. Wona ayemboza kodwa awengezi ukudla emhlabathini. Mahle uma ezungeze izitshalo ezinkulu kanye nezihlahla zezithelo.
- ❖ Amaphepha (newspaper) lokhu kwemboza kancane bese kufaka umsoco omncane / ukudla kwesitshalo emhlabathini. Manzisa amanews paper uma uwafaka emhlabathini, ukuze angaphephulwa umoya.
- ❖ Umquba, sebenzisa OWOMILE noma OMDALA ukwenza lokhu.
- ❖ Amacembe abuthwe ngaphansi kwezihlahla.
- ❖ Utshani obudala bokufulela.
- ❖ Upulasitiki omnyama.

Semboza kanjani

- ❖ Kunconyiwe ukuthi uziqamule izinto owemboza ngazo(ukhula kanye notshani) kulingane nesandla sakho (10-20 centimetres)
- ❖ Sebenzisa ucwephe oluncane lwesembozo ezithombeni kanye nasezitshalweni ezincane –kulingane nomunwe owodwa ukubanzi kokushona (1.5cm)
- ❖ Ezitshalweni ezithe ukuba zinkulu sebenzisa isembozo esithe ukuba sikhulu –okulingana 2-3 ububanzi bomunwe (3-4)
- ❖ Ezihlahleni , isembozo esikhulu impela ,isandla esiphelele noma ngaphezulu (10-20) kungafakwa



10 – 20 cm



1.5 cm



3 – 4 cm

Uma isembozo sesivithikile , kufanele ufake esinye ; kuzokumangaza ukuthi lokhu kwenzeka masinyane kanjani .Ngokujwayelekile isembozo sifakwa kanye ngemuva kwezinyanga ezintathu .Ezindaweni lapho kunesithwathwa esiningi,kuwumqondo omuhle ukuthi ucindizele phansi isembozo uma isithwathwa sinamandla uma umhlabathi usuqala ukuba neqhwa.isembozo esingaqinile sinomthelela omubi eqhweni.



Ucwaningo

Khumbula ukusebenzisa ipulani yakho yocwaningo njalo uma uzama into entsha.

Ipulani yokwenza ucwaningo endaweni encane

- ❖ Ini inkinga?
- ❖ Isiphi isixazululo kulenkinga?
- ❖ Kungani lomphumela uzoyixazulula lenkinga?
- ❖ Ngizohlola kanjani isixazululo ngokulandelayo?
- ❖ Ngizowubheka kanjani umphumela? Yini engizoyibheka?
- ❖ Ngingawubheka kanjani futhi umphumela? Yini okumele ngiyikale?
- ❖ Ngingayikala kanjani imphumela noma isiphetho?
- ❖ Ngingawuqathanisa kanjani umphumela wami nendlela eyejwayelekile engilima ngayo?
- ❖ Yenza umdwebo wocwaningo lakho ensimini yakho.

Nansi eminye imibuzo ongazibuza yona uma wenza ucwaningo ufaka isembozo

- ❖ Ingabe usebenzise isembozo kuzo zonke izitshalo zakho, noma kwezinye nje?
- ❖ Ingabe izitshalo ozimbozile bezinkulu futhi zingcono kunalezo ongazimbozanga?
- ❖ Ingabe usebenzise amanzi amancane ezitshalweni ozimbozile?
- ❖ Ingabe yini oyisebenzisile ukwemboza? Ini ebe yinhle? Ini ozoyisebenzisa ukwemboza ngesikhathi esizayo?

3. Umquba wezitshalo wezilwane kanye nongamanzi

Umquba ongamanzi indlela elula yokusiza izitshalo zakho. Ungenziwa ngezitshalo noma ngomquba wezilwane. Inhloso yalokhu ukunikeza izitshalo ukudla kwemvelo ngenkathi zisakhula. Kusiza kakhulu kulezo zitshalo ezidla kakhulu njengekhabishi ukuthi unikeze izithombo uxhaso ngenkathi zisakhulu

Ungawukhanda kanjani umquba wamanzi

Isitshalo esihle ekukhandeni umquba wamanzi u comfrey. Okukakhulu kazi ungasebenzisa amacembe aluhlaza kanye neziqu zakhona kanye nokhula konke kulungile. Ngwema izitshalo ezinephunga elinamandla. Izitshalo zakhiwe ngezinto eziningi zemvelo ezitholakala emhlabathini futhi zithatha lezinto emhlabathini. Kakho-ke kubalulekile ukuthi ukuthi usebenzise izinhlobonhlobo zezinto.

- ❖ Qinisekisa ukuthi isitsha sakho sihlanzekile ngaphambi kokuthi usisebenzise.
- ❖ Qoqa izitshalo uzifake esitsheni sakho usigcwalise. Bese uqubeke ulokhu ufaka njalo ngeviki.
- ❖ Beka itshe ngaphezu kwezitshalo bese uvala ngesivalo. Ungawafaki amanzi. Izitshalo zizozenzela amanzi azo.
- ❖ Beka ngaselangeni bese ubheka ngemuva kwamaviki amabili ukuthi amacembe awakabi mnyama yini. Uma ugunqula isitsha sakho kumele kuphume okusamanzana amnyama. Lokhu kungamanzi ashubile angumquba.
- ❖ Lamanzi ashube kakhulu kumele ahlanjululwe kanje : Izithombo : 1 ithini lomquba wamanzi emathinini angu 4 amanzi Izitshalo ezinkulu : 1 ithini lomquba wamanzi emathinini angu 3 amanzi. Uma unxube kwashuba kakhulu kungawashisa amacembe akho.

Njalo ngemuva kwamasonto amabili thela lomquba uzungeleze izitshalo zakho, ngemuva kokuthelela.

Kumele uthethe okungenani ithini elilodwa lalomquba osuhlanjululiwe ngamanzi esithombeni ngasinye noma isitshalo. Ithini kumele kube ilelo elilingana nalelo likajamu.

Ungawakha kanjani umquba wamanzi ngomquba wezinkomo

Umquba ongasetshesiswa owezinkukhu, onogwaja ,inkomo ,imbuzi kanye namagusha. Umquba oxutshiwe uyancomeka.

- ❖ Faka umquba wakho omusha oxutshiwe bese uwufake esakeni bese ubopha phezulu.
- ❖ Faka isaka esitsheni bese ulibophela endukwini noma emchilweni. Bese ugcwalisa isitsha ngamanzi . Udinga ukuvaka amalitha angu 10 amanzi ku 1kg womquba .Lokhu kusho ukuthi isaka lamawolintshi eligcwele umquba lingena ebhakedeni elikhulu ,noma uhhafu wesaka ebhakedeni elijwayelekile lasekhaya. Lokhu kuyindlela yokugcina umquba namanzi kuhlukene, akumele ufake umquba omanzi ezitshalweni zakho.
- ❖ Vala isitsha sakho ngesivalo.
- ❖ Ngemuva kwamaviki amabili umquba uzobe usulungile ukuthi ungasetsheniswa. Kumele kubukeka njengetiye elilula. Ngaphambi kokuba usebenzise lomquba kumelele uwugoqoze kahle.
- ❖ Lomquba unzima kumele uhlanjululwe ngamanzi.

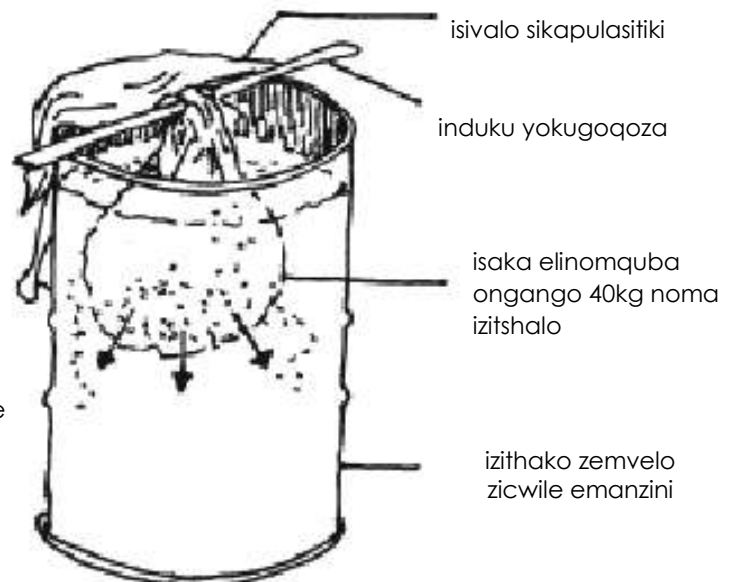
Izithombo : 1 ithini lomquba wamanzi emathinini angu 8 amanzi (ibhakede noma amabhodlela)

Izithombo: 1 ithini lomquba wamanzi emathinini angu 4 amanzi
Uma uxube kwabanzima kungashisa izithombo zakho

Njalo ngemuva kwamaviki amabili faka umquba wamanzi ezitshalweni zakho, ngemuva kokuchelela.

Futhi, sebenzisa ithini likajamu eligcwele kuleso naleso sitshalo noma isithombo. Qikelela ukuthi awufaki umquba wamanzi phakathi nemini noma elangeni elishisayo.

idilamu elinamalitha angu 200 ligcwaliswe ngamanzi



From: Production without Destruction

Udinga lokhu:

- ❖ Udinga isitsha esngu: 10litre noma ngaphezulu
- ❖ Isaka lelo ungalithola : kungaba elamawolintshi ,elokudla noma isaka lengubo
- ❖ Induku eqinile noma indophi
- ❖ Into ozobopha ngayo isaka
- ❖ Isivalo sokuvala isaka.

4. Indlela yokuzakhela i - trench bed

Isingeniso

I trench bed yindlela yokwandisa imvundo kanye nomswakama engadini yakho. Lena yindlela ekahle yokulungisa umhlabathi wakho uma ungumlimi osezingeni elincane. Lendlela ibandakanya ukumba umgodi, ukwugcwalisa ngemfucuza ebolayo ukuze ikwazi ukuvunda isikhathi eside (isikhathi esingacishe sibe yiminyaka emihlanu).

Indlela yokuyenza

- ❖ Yimba umgodi ube ngu 60cm nangaphezulu ukuya phansi. Ububanzi bujwayele ukuthi bube yimitha ukuze kubelula ukuwusebenza (lokhu kuchaza ukuthi kungenzeki ukuthi umuntu anyathele uma esebenza khona) kanti ubude bungaya ngokuthi owakhayo unamandla angakanani.
- ❖ Uma umba thela inhlabathi emnyama ngakolunye uhlangothi, kuthi ebomvu iye kolunye. Kumele ihlukaniswe.

Ngakwesokudla, u Mandla (e Phuthadjithaba) umba umgodi wakhe. Uthela inhlabathi emnyama yangaphezulu nganxanye (lena emnyama iyona enemvundo), kanti lena enye ebomvu yangaphezulu uyithele yayinqumbi kolunye uhlangothi (lena ebomvu ayinayo imvundo noma inemvundo encane).

Uma inhlabathi ingavundile, akufanele ifakwe emgodini. Kufanele isakazwe ngaphandle kunoma iyiphi indawo, nasemiseleni eletha amanzi kuwona lombhede.

- ❖ Phansi emgodini kufanele wendlale amathini noma amagatsha. Lokhu



kuzosiza ukuthi kukwazeke ukubambeka umoya obaluleke kakhulu emsocweni odingwa yizitshalo

Amathini kufanele ukuthi apaqazwe ngaphambi kokuthi afakwe emgodini. Umkhakha wamathini kufanele ujule ngamathini amathathu ukuya phansi. Uma engekho amathini, sebenzisa amagatsha azacile. Gwema amathini ane "aluminium" ngoba iwushevu. Lamathini, ngamathini kabhiya kanye naweziqedakoma (cold drinks)

- ❖ Gcwalisa inhlabathi yakho ngezinhlobonhlobo zemfucuza kanye nenhlabathi yangaphezulu.

- Qala ngotshano obomile noma ukhula (kujule ngamacentimetre angu 10)
- Landelisa ngomanyolo (kujule ngamacentimetre amabili)
- Kulandele umlotha wezinkuni (Umkhakha omncane ongaba ngu 1cm).
- Bese kuza umkhakha wenhlabathi yangaphezulu (ijule ngamacentimetre angu 5)



Xuba lemikhakha ngemfologo

Uma usuyixubile, yigxishe ngezinyawo ishone phansi

- NISELA lomxube wakho kakhulu!!
- Bese phinda futhi.

Ngaphezulu: I- trench bed yase Phutadjithaba iyagcwaliswa, kuyaxutshwa bese kugandaywa. Qaphela ingxube kamanyolo, utshani kanye nenhlabathi.

Ngakwesokudla: I- trench bed



yase Potshini iyagcwaliswa. Lapha inhlabathi yangaphezulu ibuyiselwa phakathi emgodini. Qaphela ukuthi inhlabathi yangaphansi eliphuzi ibekwe engxenywe. Ayizukusetshenziswa kulomgodi.

Ungakusebenzisa okokuvundisa okufana nokhula olomile nolusemanzi, kanye namakhasi amaveji avela ekhishini, amakhathoni, amaphepha kanye namathambo.

- ❖ Uma usukwenzile lokho qala phansi futhi ngokuthela imfucuza, kuze umanyolo, umlotha kugcine inhlabathi, uxube bese uyanisela. Kwenze lokhu uze igcwale umgodi.
- ❖ Manje I - trench bed yakho kumele iphakame ngo 10-15cm ngaphezu komhlaba. Phezulu sebenzisa ingxube ekahle yenhlabathi yangaphezulu nomanyolo kanye ne khomposi uma ikhona.



Ngakwesokudla kukhonjiswa I-trench bed esanda kwakhiwa.

Imfucuza efakwe kwi trench bed kumele ilindwe izinyanga ezimbili kuya kwezintathu ize ibole ngaphambi kokuthi kutshalwe.

- ❖ Omunye umbono futhi ukusebenzisa I-trench bed yakho njengombhede wokutshala izithombo. Uma uqonde ukwenza lokhu, izithombo zakho ungazitshala ngaso lesi sikhathi uma I-trench yakho usuyiqedile. Ukukhulisa izithombo ngokutshala imbewu ngqo enhlabathini kudinga inhlabathi evundiswe yalungiswa ngokupheleleyo. Izimpande zezithombo ezincane azijuli kakhulu. Imfucuza efakwe kwe-trench ingabe iqhubeka nokubola kwayo ngesikhathi izithombo zakho zikhula ngaphezulu.



Ngakwesokudla sibona imbewu

kakherothi kanye no-anyanisi itshalwa embhedeni wezithombo e Potshini. Lapha sithola ukuthi I-trench bed yayisanda kwakhiwa.

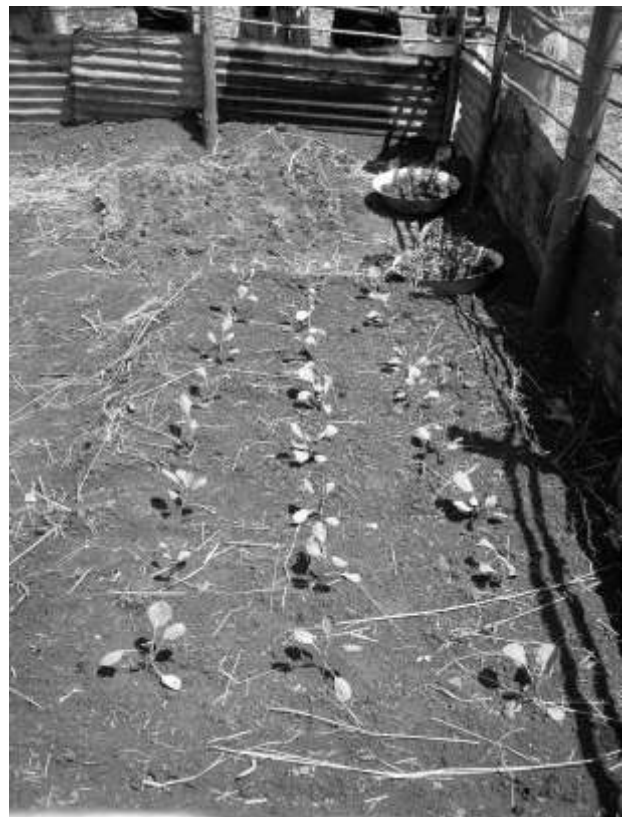
Qaohela; Inhlabathi ecolisakele ivuvuzelwa ngaphezu kwezithombo. Lokhu kwenziwela ukuthi imbewu ingazabalazi ukuhluma ngoba nayo incane kakhulu. Uma inhlabathi ivuvuzelwe ngalendlela, izohluma kangcono.

Kulesisithombe sithola ukuthi ama-trench bed amaningana akhiwe engadini yase Potshini. Umnikazi wawo usebenzisa amabili njengemibhede yokukhulisa izithombo (seed beds) Embozwe ngotshani ukuze umswakama ungahwamuki kalula ngesikhathi imbewu ihluma. Lobutshani buzisuswa ngesikhathi lapho izithombo sezivela..

Umbhede ophakathi nendawo umise okwesicathulo sehhashi. Lendlela lombhede owakhiwe ngayo yenza kubelula ukuthi umuntu afinyelele kuzo zonke izinhlangothi zombhede. Ivumela amanzi ukuthi ageleze aye maphakathi nendawo. Lapha sibona ukuthi umnikazi wendawo itshale izithombo zespiniashi. Zlezizithombo zikhule kahle, noma bekukhona ukwesaba bokuthi ukukhula kwaso kuzophazamiseka ngesikhathi imfucuzisa isabola ngaphansi kwenhlabathi.

Kulesisithombe sibona imbewu ka carrot itshalwa kwi trench encane, laphayana ekhoneni. Kukhona futhi nezinye izithombo ezibonakalayo.

Ngaphambili kukhona I-trench bed esanda kwakhiwa, lapho kutshalwe khona izithombo zekhabishi. Kanjalo nalapha ikhabishi likhule kahle, aliphazanyiswa ukubola wemfucuzangaphansi kwi trench.



Kubakulekile ukuthi kuchelisiswe ngamanzi ngesikhathi I trench isakhiwa nakamuva. Imfucuza ngaphansi angeke ibole uma yomile.

Ziningi izindlela zokunisela, ingobo nje uma amanzi efakiwe.

Esithombeni, uhlelo lokunisela olubizwa ngokuthi yi-drip irrigation izosetshenziswa ekuniseleni le-trench bed.



Kamuva uma sekuzophela isikhathi sesivuno (isithombe ngezansi) sibona ikhabishi elitshalwe kwi trench bed liniselwa ngohlelo lokunisela olubizwa ngokuthi yi drip irrigation kanti libonakala likhula kahle kakhulu. Sibona nezinye izitshalo ezitshalwe kwi trench bed lapho kuniselwa khona ngamabhakede; njengespinash (swiss chard) kanye ne Beetroot. Esithombeni, kuzosetshenziswa uhlelo lwe Drip irrigation lapha ukunisela I-trench bed.



5. Ukukhiqizwa wezithombo



Ngenhla kunesibonele sombhede ombozwe ngomhlanga oboshwe aqiniswa ndawonye uvikela emoyeni naselangeni ezithombeni.

Ukuqala

- ❖ Kumele uqaphele ukuthi ,unembewu enhle nephilile
- ❖ Qaphela ukuthi unamanzi eduze (amanzi anodaka oluningi awamahle)
- ❖ Qaphela ukuthi umhlabathi wakho uvundile,uthambile (bona ukuthi ungawunothisa kanjani umhlabathi wakho ekhasini elikulencwadi).
- ❖ Qaphela ukuthi likhona ithunzi.

Imithetho ebalulekile ngamanzi

- ❖ Amanzi kumele abe seduze
- ❖ Amanzi kumele ahlanzeke – amanzi anodaka oluningi futhi angcolile angenza kubenzima ukuthi zimile izithombo.

Imithetho ebalulekile ngembewu

- ❖ Imbewu kumele ihlale iphilile:gcina imbewu unyaka owodwa kuyakwemibili kuphela. Bheka idate emaphaketheni ngaphambi kokuthi uthenge.Ungenza ukuhlolwa kokumila kwembewu ngaphambi kokuba uyitshale yonke(bheka ngenzansi)
- ❖ Imbewu kumele ibesendaweni epholile, enobumunyama neyomile.Uma uthenga esitolo esincane,bheka ubone ukuthi imbewu ibekwe endaweni eyomile nepholile uma amaphakethe embewu eselangeni –ungawathengi
- ❖ Uma uzibekela wena imbewu,qiniseka ukuthi utshala imbewu engenaso isakhuntela,ukuklwebheka noma izimbobo
- ❖ Uma uthenge imbewu,bhala inyanga nonyaka othenga ngayo,ukuze ukwazi ukubheka amadate.

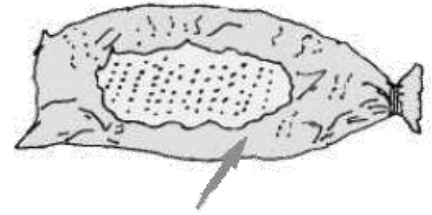


Ucwaningo

UKUHLOLWA KOKUMILA KWEMBEWU- kungenzeka ufune ukuzama lokhu uqinisekile ngokuthi imbewu yakho

isoqophelweni oluphezulu futhi iphila kahle

Ngaphambi kokuba utshale imbewu ungayihlola ukuthi izomila yini. Ungahlola ukuthi zingaki izimbewu zakho ezingamila.



- ❖ Thatha imbewu engu-50 uyibeke phezu kwephepha elimswakama, indwangu noma ithoiyilethi paper.
- ❖ Beke iphepha noma indwangu okunembewu phakathi esikwameni sikapulasitiki bese uphephethe ngomoya esikhwameni sikapulasitiki, ngaphambi kokuthi uvale.
- ❖ Bheka imbewu njalo ukuze ukuthi zingaki ezinilayo. Loku kungathatha izinsuku 3-10.
- ❖ Bese ubala izimbewu ezimilile.

Lapha isibonelo 40 kwezingu50 izimbewu zimilile. Lapha izinga lokumila libalelwa ku 80% (80/100). Lokhu kusho ukuthi ezingu 80 kuphela phezu kwezingu 100 izimbewu ozozitshala zizomila.

Ukukala



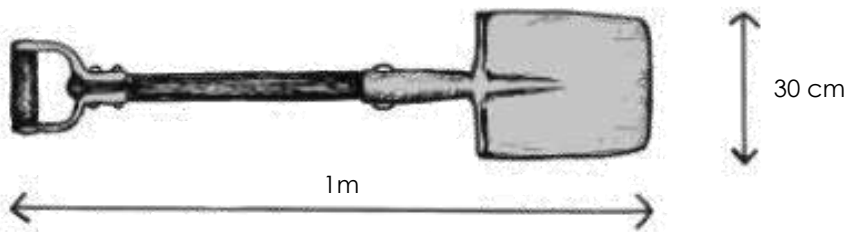
Umono owodwa = 1.5 cm



Imino embili = 3 – 4 cm



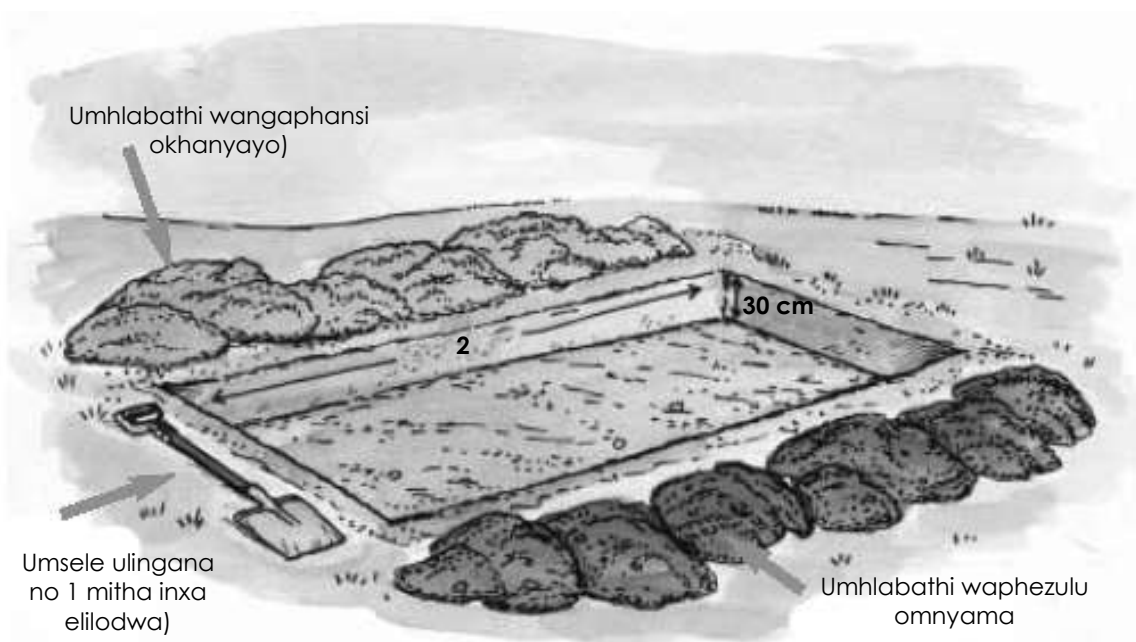
Isandla = 20 – 30 cm



Ukulungisa umbhede wezithombo

Umbhede wezimbewu inxenye encane kakhulu yengadi enomhlabathi onothile futhi enesembozo lapho kumila khona imbewu. Isembozo sivikeka isithwathwa.

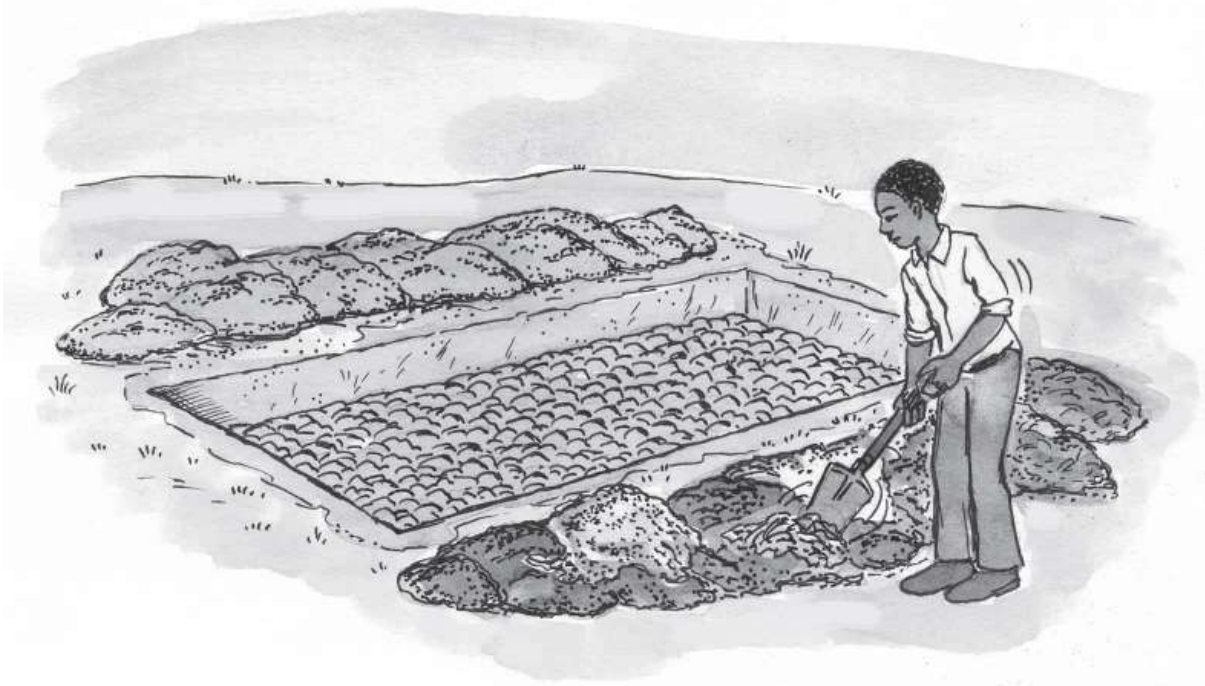
Imba umsele ongango 30cm (okulingana nokudla kwesipeto) ukushona nobude (obulingana nobude besipeto). Umsele kumele ulingane no 1 kuya 2 wamamitha (okungangamagxa elilodwa kuyakwamabili).



Hlukanisa umhlabathi onothile ngaphezulu (imvamisa umnyama) komunye umhlabathi. Thambisa umhlabathi ongaphansi ngefolongo noma ngesipeto.



Hlanganisa umhlabathi wangaphezulu kanye nenxenye elinganayo nomquba kanye nomlotha oxutshiwe noma ikhomposi (bheka futhi ukuthi ungawuthuthukisa kanjani umhlabathi ekhasini elikulencwadi ,thola kabanzi ukuthi ungawulungisa kanjani umquba kanye nekhomposi).



Sefa lokhu ngenkathi ukuphindisela emgodini . Uma ungakwazi ukukusefa sekuxutshiwe ,qiniseka ukuthi ayikho into engathikameza ukukhula kwezithobo ,izinto

ezifana nezinduku ,amacembe ,amatshe amangade noma umhlathi oqinile .Kubalulekile ukunganyatheli embhedeni wakho uma usuwulungisile.



Ubude bombhede wezithombo kumele ubengangemitha (1metre) (noma ulingane nobude besipeto) .Lokhu kwenza kube lula ukuthi ukwazi ukufinyelela phakathi nendawo nombhede emecaleni womabili ,ngaphandle kokuthi uhambe noma unyathele embhedeni wa kho. Ukunyathela umhlabathi okukakhulu uma ummanzi ,kungona ukuthamba, ukucoleka, futhi kuwenze uqine. Lokhu kuqina kungenza kubenzima ukuthi imbewu ikwazi ukumila.



Ungazenzela wena ithunzi lembewu elishibile ungalenza ngezingodo/umhlanga /iqalo kanye notshani.

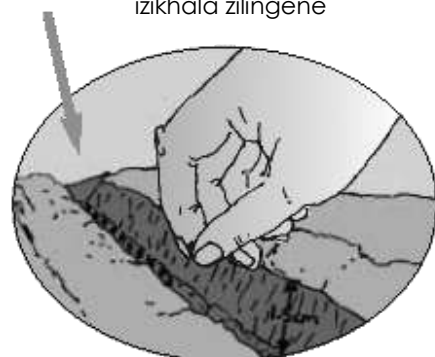
Ukutshalwa kwembewu

Imbewu ehlukene kumele itshalwe ngezindlela ezahlukene.

Imbewu ikhonjiswe ithothene futhi izikhala zilingene

1. Indlela yokutshala

Ezinye zezitshalo kumele zitshalwe lapho zizomile khona , izitshalo ezincane azithandi ukuthuthukiswa njalo .Lokhu kwaziwa ngokuthi



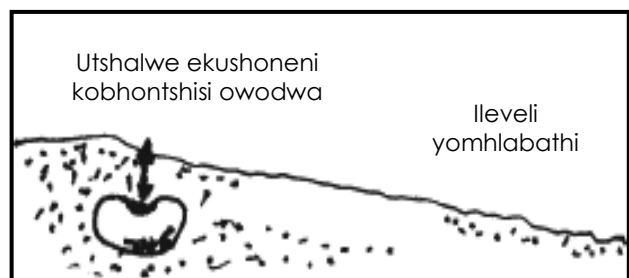
ukutshala nqo (direct sowing).

Ukutshala emseleni kulingana no
1.5 - 2cm ukushona

Lokhu kufaka ubhontshisi, ubhithiludi, amakhalothi ,ukhukhumba, ugaliga, ummbila, uphizi,amazambane, amathanga, ilelishi kanye nothenephu. Imisele kanye nemigodi kumele ibe manzi ngaphambi kokuba utshale.

Imbewu encane njengamakhalothi,ilelishi kanye nothenephu akushoniswa kakhulu .Khanda umsele ongango 1.5cm (ububanzi obungangomunwe). Tshala kahle imbewu yakho ngokucophelela ngomunwe kanye nesithupha emseleni. Kumele ucophelelele ukuthi imbewu ayiminyene. Imbewu kumele iqhelelane ubude obulingana nomunwe owodwa emseleni. Faka imbewu indawo elinganayo. Mboza imbewu yakho ngekhomposi encane ,ngomquba noma ngomhlabathi. Cindezela ngomunwe wakho.

Imbewu enkulu imbewu efana nobhontshisi i, zitshalwa ngokushona okungango 1-2 kunembewu. Uma zitshalwe zashona kakhulu, ngeke zimile. Uma zishone kancane izitshalo ziyawa.



2. Ukutshala embhedeni kuqala

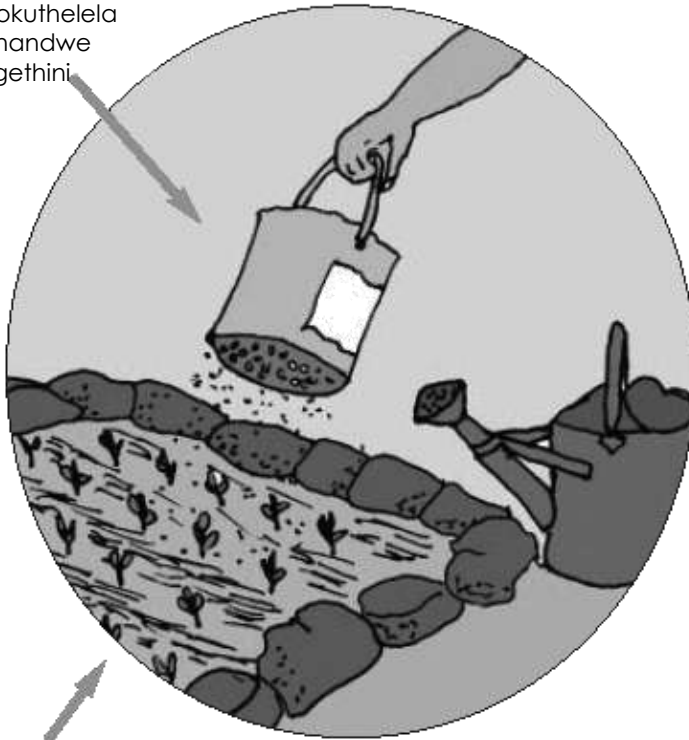
Ezinye izitshalo zimila kahle uma ziqalwe zatshalwa embhedeni wezithombo kuqala bese uma seziqinile izithombo bese uzikhipha uzitshale. Lokhu kufaka ubroccoli, ikhabishi, u cauliflower, upelepele, i eggplant, u green pepper, i leeks, u lethisi, u orka,uanyanisi, isipinashi kanye notamatisi.

Ezinye zezitshalo ungazitshala embhedeni wembewu noma uzitshale nqo lapho zizomila khona kukuwe ukuthi okukusebenzela kahle. I lezi izitshalo ongazitshala isipinashi, uanyanisi, ugaliga kanye namazambane.

3. Ukunakekelwa kwembewu embhedeni wezitshalo

Ezimbewini ezincane njenge khabishi, u kale u tamatisi, uthenephu kanye no anyanisi, ungatshali imbewu ihlangane ndawonye ngoba iyahlangana bese iminyane. Izithombo zizontengantenga ziphinde zihlaselwe izifo. Zifuna ukubangisana ngendawo kanye nelanga. Tshala kancane bese ulinganisa. Tshala izitshalo ububanzi obungangomunwe phakathi kwezitshalo.

Ikani lokuthelela
elikhandwe
ngethini



Umbhede wembozwe
ngamatshe kanye
notshani

Uma izitshalo sezitshaliwe, kubalulekile ukuzigcina zinomswakama sonke isikhathi. Kungadingeka ukuthi ugcelele kabili ngosuku uma libalele. Kungcono ukugcelela ntambama ehlobo, ebusika ugcelele phakathi kwasekuseni.

Gcelela ngokucophelela, ngesipuleyi esigcelela kancane. Ngoba-ke ungashe umukise izitshalo zakho ngamanzi, noma ugandaye umhlabathi wakho.

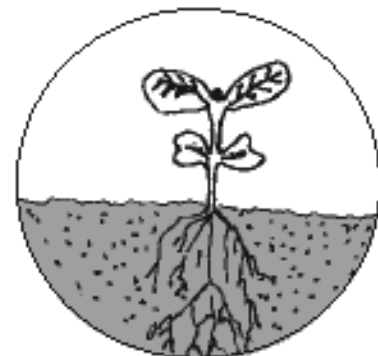
Ungazenzela ikani lasekhaya lokuthelela. Bhoboza izimbobo ezincane ngaphansi ekanini lakho ngesando.

Yemboza umbhede wakho wembewu. Lapha ungemboza maphakathi nolayini lapho utshale khona imbewu. Noma wemboze umbhede wonke bese ususa isembozo uma imbewu isiqalisa ukumila. Uma ungasisusi isembozo singenza kube nzimza ukuthi imbewu yakho ikhule. Kubalulekile ukuthi wemboze ngamatshe ayizipaca emacopheni ombhede wakho. Lokhu kuqinisekisa ukuthi amanzi ahlala embhedeni wakho awahamuki emaceleni.

- ❖ Kubalulekile ukuhlakula noma ukugcaphuna ukhula embhedeni wakho.
- ❖ Kumele ukhiphe ezinye zezitshalo ukuze zizoshiya indawo yezinye ukuze zikhule kahle. Uma izitshalo zivela uyabona ukuthi iziphi ezizinzile nalezo ezibuthakathaka. Khipha lezo ezibuthakathaka. Qinisekisa ukuthi izitshalo ezinzile zinendawo eyanele ukuthi zikhule ,okungango 3-4 cm (noma ububanzi beminwe emibilie).

4. Ukutshalwa kwezithombo

Ngaphambi kokuthi uzikhiphe izithombo zakho kubalulekile ukuthi uziqinise. Lokhu kuzokwenza ukuthi abemancane amathuba okuthuka kwazo uma sowuzitshala. Ukuziqinisa kusho ukwenza isimo esesitshalo sibenzima kancane. Ithunzi uyalisusa uphinde unciphise amanzi othelela



Isithombo esinamacembe
amabili

ngawo. Lokhu kwenziwa isikhathi esingangezinsuku ezintathu kuya kwezine ngaphambi kokuba uzitshale.

Isikhathi sokutshala izithombo ilapho sezinamacembe angempela amabili kuya kwamathathu, uma izipande sezikhule ngokwanele nesiqu esizinile. Amacembe okuqala amabili aphuma emhlabathini akusiwo awangempela – ngakhoke uyalinda isitshalo sikhule.



Bamba isithombo ngamacembe

Tshala izithombo mantambama noma uma kunesimo esiguqubele sezulu. Lokhu kunikeza izithombo isikhathi sokuthi zilulame ngaphambi kokuthi kufike ukushisa. Uma kubanda kakhulu, zitshale maphakathi nasekuseni, lapho umhlabathi usufudumele kancane.

- ❖ Lungisa bese uchelela imigodi lapho uzotshala khona
- ❖ Qiniseka ukuthi umhlabathi wakho uthambile futhi unezinto ezivundisayo, njenge khomposi kanye nomquba noma umlotha.
- ❖ Phakamisa isitshalo ngokucophelela, usebenzisa ithuluzi (UNGALINGI UZIKHIPHE NGEZANDLA) wenze ngokusemandleni ukuthi ushiya umhlabathi omningi ozungeze izimpande. Bamba izithombo ngamacembe azo hhayi ngesiqu.

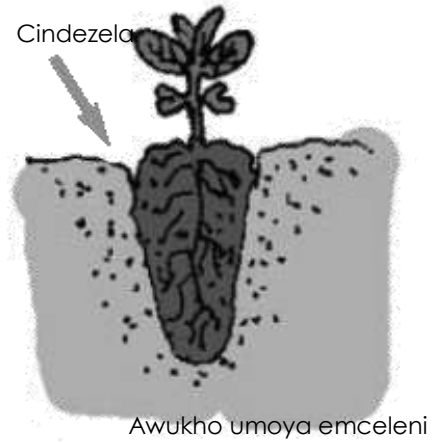
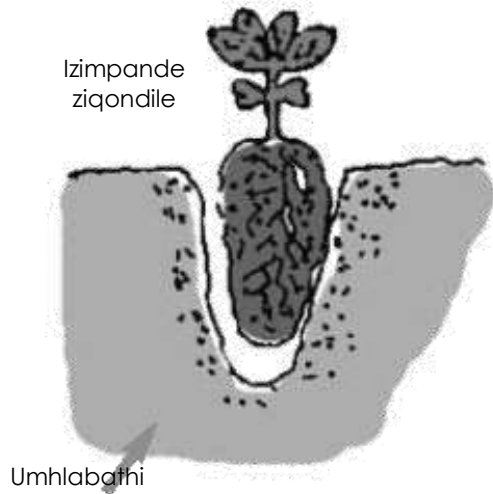


Ukukhipha izithombo ngaphandle kwethuluzi akukuhle



Ngethuluzi izimpande zisala zibambene

- ❖ Uma utshala, kumele izimpande zimeziqonde zingampitsheki emgodini. Umgodi kumele ugcwaliswe ngomhlabathi, okumele uqinise ngokuzungeleza isitshalo. Cindezela umhlabathi phansi ujikelezele isitshalo, ukuze kungabikho umoya ongena zimpandeni.



Chelela ngemuva kokutshala

- ❖ Chelela izithombo ngemuva nje kokuba uzitshale.
 - ❖ Zemboze emibhedeni yazo.
 - ❖ Nikezela ithunzi ezithombeni, ngokusebenzisa amahlahla noma amakhalibhodwe.
- Lokhu kungasuswa ngemuva kwezinsuku ezine kuya kwezinhlanu, lapho isitshalo sesizinzile.

