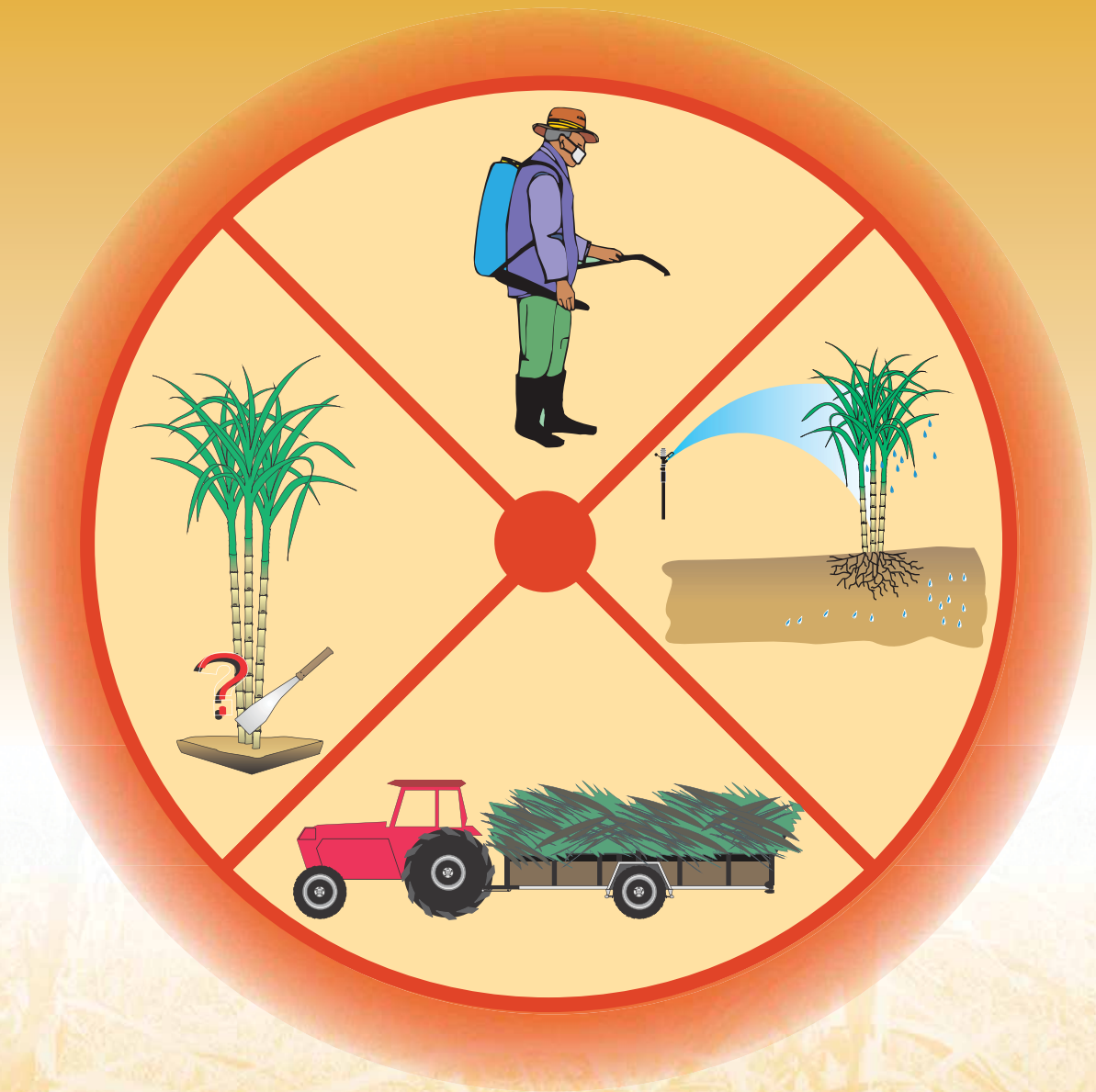


Izithombe eziwumhlahlandlela ekulimeni umoba



OKUQUKETHWE

Ukutshalwa komoba.....

Umanyolo.....

Izinambuzane zomoba.....

Izifo zomoba.....

Ukunqandwa kokhula emobeni.....

Izitshalo zokufika eziyizihlaseli.....

Ukuchelela.....

Izilinganiso zesivuno somoba.....

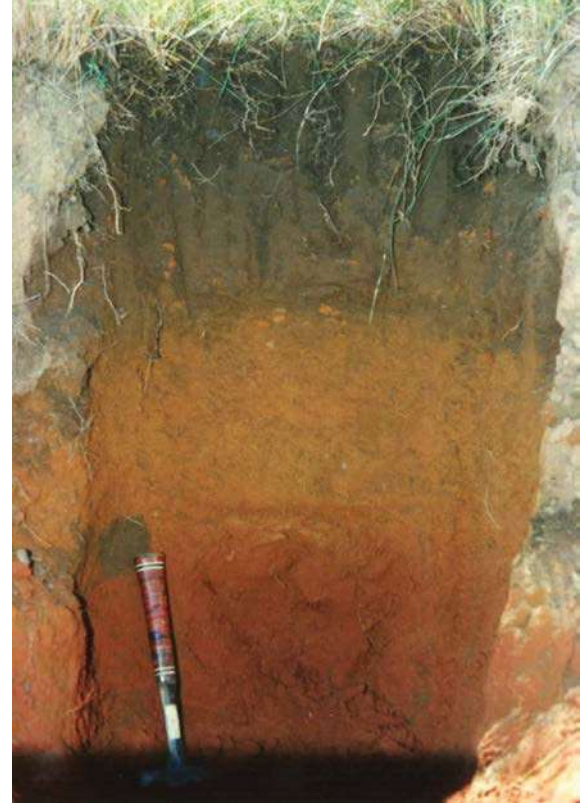
Ubuhle bomoba.....

Ukuhlahla.....

Imvelo.....

Ukukhetha Indawo

- Uma indawo ingakaze ilinywe kudingeka imvume
- Ukwehlela kumele kube ngaphansi kwamaphesenti angama-20
- Yazi uhlobo lomhlabathi nokujula kwawo
- Kuyanconywa ukuthi ubenohlelo lokusebenza indawo (LUP)?



Ukuhlolwa kokujula nohlobo lomhlabathi



Insimu elungele ukutshalwa

Ukulungiselela ukutshala

1. Bulala umoba omdala

- Uma isivuno sehle kakhulu
- Ukunqanda izifo
- Ukushintsha uhlobo lomoba



2. Ukulima indawo ezotshalwa

- Kungabi namagabade
- Susa umoba omdala
- Ku ngabi namavolontiya
- Ukuvula olayini ozotshalwa kubona (10c m)



Izindlela zokulima

Ukulima kancane

Izinto zokusebenza: ugandaganda, igeja, isigubhu sokuchela uphoyizeni

- Kusetshenziswa i-Glyphosate ukubulala umoba omdala
- Kunciphisa ukuguguleka komhlabathi
- Kunconywa ukuba isetshenziswe endaweni eyehlelayo ngaphezu kwamaphesenti ayi -12%
- Inconywa esihlabathini
- Ingasetshenziswa ehlobo phakathi kukaLwezi - Nhlolanja
- Izindleko ziphansi



Isitshalo esidala

Ulayini

Ukulima kakhulu

Izinto zokusebenza:
ugangaganda, igeja nehhala

- Ingenziwa kuphela ebusika kusukela kuMbasa kuya kuMandulo
- Ungakwazi nokufaka umcako
- Ayizilungele izindawo ezingamaqele
- Izindleko ziphezulu



Ukuhlukana kanye nokujula kolayini

Ukuhlukana kolayini

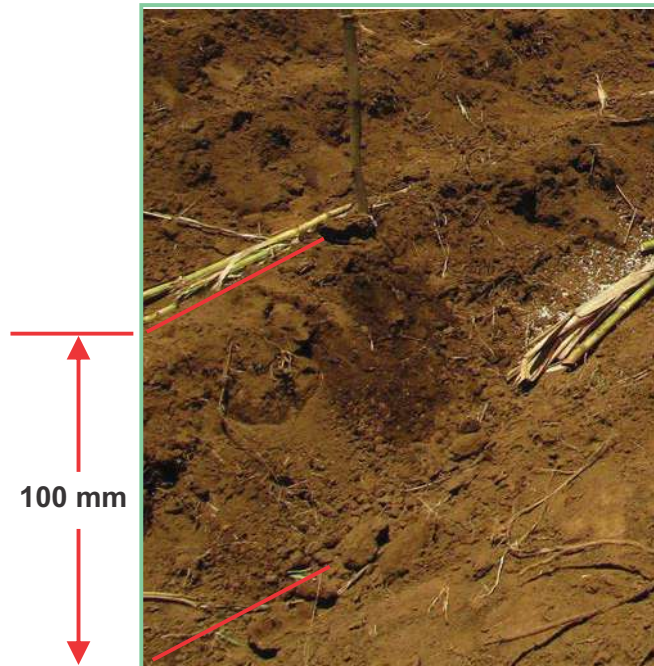
- Kuncike kuhlobo lomhlabathi nendawo okuyo
- Ukuhlukana kolayini okwejwayelekile u-1m kuya ku-1.2m



Ukuhlukana kolayini

Ukujula kolayini

- Ukujula kungeqi u-100mm



Ukujula kolayini

Imbewu

Ukukhetha uhlobo lomoba kuncike:

- Esikhathini sokuvuna: ezinyangeni eziyi-12 noma ama-24
- Kuhlobo lomhlabathi
- Kwindawo ozotshala kuyo, esigodini noma eqeleni
- Kwisikhathi sonyaka ozovuna ngaso
- Ebangeni eliya esigayweni



Ukuhlahlwa kwembewu

Ubuhle bembewu

- Imbewu engenaz ifo nezinambuzane
- Ubudala bembewu (Izinyanga eziyi-9-18)
- Funa imbewu kusasele iminyaka emibili ukuthi utshale



UKUTSHALWA KOMOBA

Ikhasi 6

Indlela yokutshala

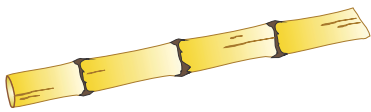
Ukufakwa kukamanyolo

- Thela umanyolo kolayini uma utshala
- Thela ngaphezulu emva kwamasono ayi-12



Izinga lokufakwa kwembewu

- Amathani ayi-6 (ugongolo olulodwa)
- Amathani ayi-8 (ugongolo nohafu)
- Amathani ayi-10 (izingongolo ezimbili)



Ubude bamasethi

- Shiya amalunga ama3-4
- Nqanda uBhasha - Amanzi angamalitha ama-5 kanye noshibhoshi ongama-500 ml



Ukugqitshwa komoba

- Ebusika (Akujulile) - 50 mm
- Ehlobo (Kujulile) - 100 mm
- Kumele kubhekwe ukuthi umoba ucindezelwe kahle umhlabathi emva koku gqiba
- Sebenzisa izibulala - khula ukunqanda ukhula lungakaveli emva kokutshala

Uyini?

Umanyolo ungukudla okudingwa isitshalo ukuze sikhule kahle.

Izinhlobo zikamanyolo

1. Owenziwe ngemvundo
2. Owenziwe ngamakhemikhali



Ufakelwani umanyolo?

Unikeza ukudla okudingwa isitshalo ukuze sikhule kahle kwenyuke isivuno kanye nenzuzo.



Izinhlobo zomanyolo

Owemvundo: yezilwane noma yezitshalo ezibolisiwe, uqukethe imisoco enhlobonhlobo edingwa izitshalo.

Owenziwe ngamakhemikhali: oyizinhlamvu noma owuketshezi uqukethe imisoco eyanele edingwa izitshalo.



Isitshalo sikusebenzisa kuphi ukudla kwaso?

- N - owamaqabunga
- P - owezimpande
- K - owesiqu



N

P



K



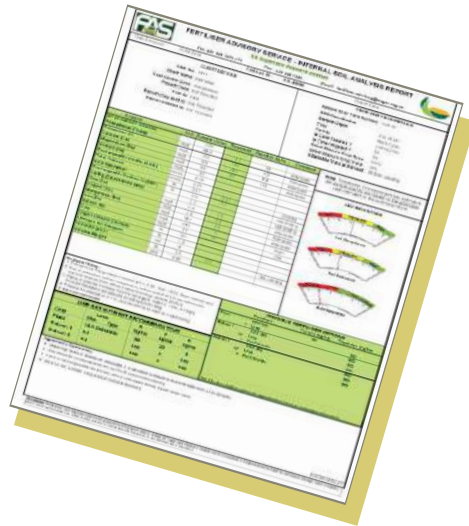
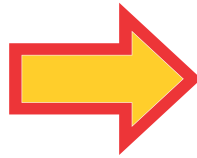
Izigaba okumele zilandelwe

Thatha isampula lomhlabathi ulithumele kwa-FAS



1

Funda Imiphumela yomhlabathi ohloliwe



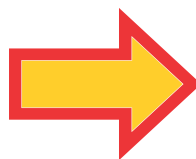
2

Thenga uhlobo lukamanyolo ngokwezinqanaba



3

Kwesinye isikhathi kudingeka ufake umcako wabalimi



Ufakwa nini umanyolo?

**Ngesikhathi
utshala kolayini**



**Ngaphezulu uma
usutshalile**



**Ukukhuthaza
ihlumela emva
kokuhlahla**



Umanyolo ufakwa kanjani?



**Ukusebenzisa
ithini nentambo**

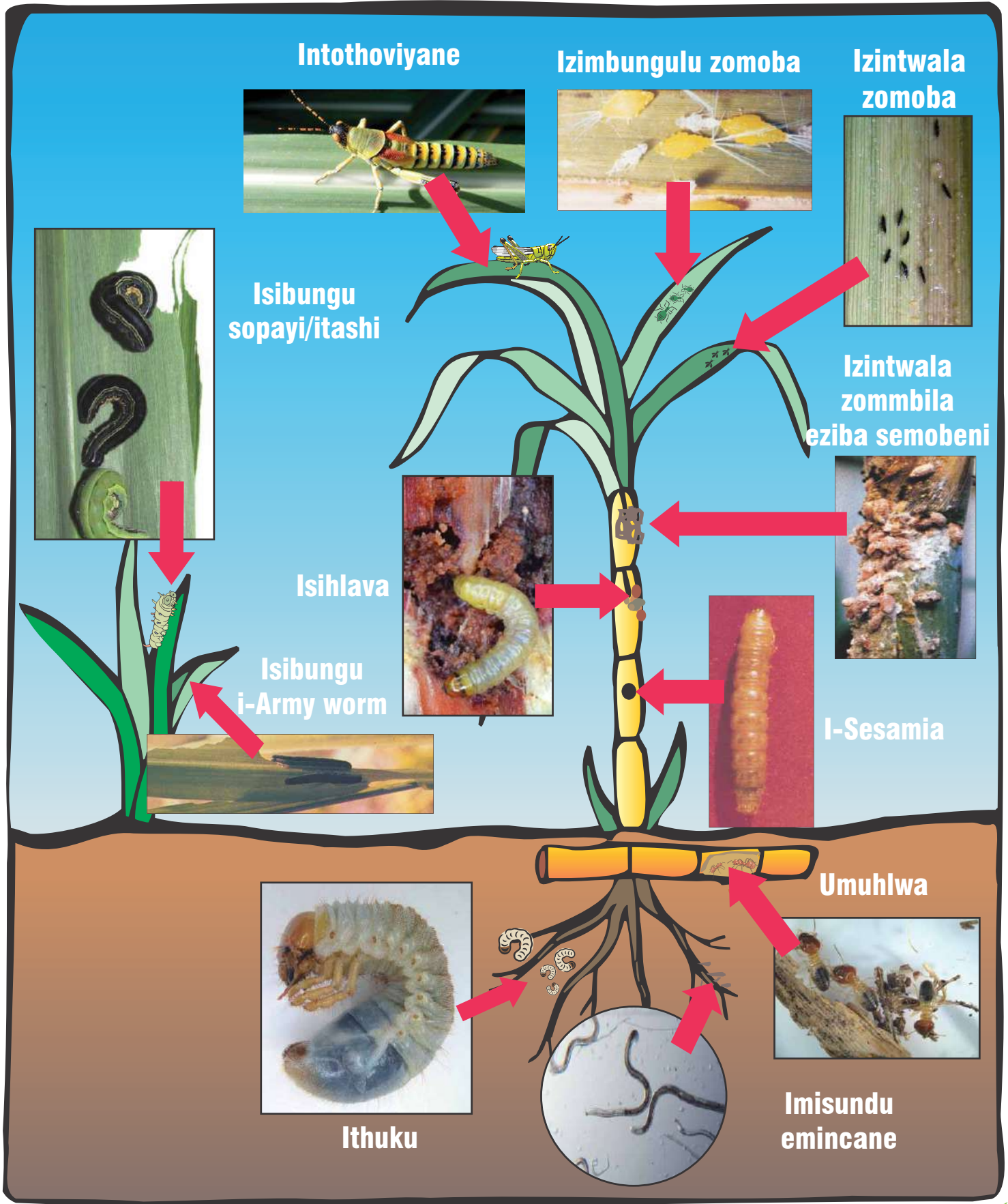


**Ukusebenzisa
isigubhu esithwalwa
emhlane**

Amasu Okufaka

- **Sonke isikhathi sebenzisa izincomo zakwa-FAS** (inani nohlobo lukamanyolo).
- **Ehlobo** - Faka umanyolo ngemva kokuhlahla.
- **Ebusika** - Faka umanyolo ngemva kwezimvula zokuqala kwentwasa hlobo.
- **Emhlabathini owubumba** - Faka umanyolo kolayini bomoba.
- **Esihlabathini** - Faka umanyolo phezu kolayini nasemaceleni.
 - Ungawufaki wonke umanyolo kanye kanye.
 - 1/2 ngenkathi utshala
 - 1/2 ngemva kwamasono ayi - 8 utshalile
- **Izincomo zesikhuthazakhaba zingancishiswa ngama- 20 kuya ema-30kg ngehheka.**
 - **Emhlabathini ongajulile**
 - **Uma kunesomiso**
 - **Uma isihlava siyinkinga kakhulu**

Izinambuzane ezivamise ukwenza umonakalo emobeni



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

Isihlava

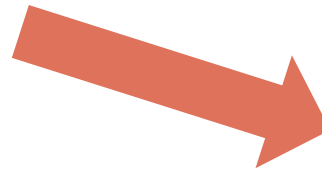
Sitholakala kuphi?

- ▶ Ikakhulukazi ezindaweni ezifudumele ezigudle ugu.
- ▶ Kuzozonke isigaba nezikhathi zokukhula komoba.
- ▶ Emobeni okhahlamezekile.



Umonakalo:

- ▶ Singena ogoqweni lomoba
- ▶ Singalimaza sonke isitshalo



Yini ongayenza?

- ▶ Hlola umoba ozowuhlahla ngonyaka olandelayo
- ▶ Hlahla ngokushesha umoba onesihlava
- ▶ Ukuphundla umoba ngaphambi kokuhlahla
- ▶ Hlahla umoba ungakashiywa yisikhathi.
- ▶ Faka isikhuthazakhaba ngokulandele izincomo zemiphumela yenhlabathi (FAS).
- ▶ Ungadluliseli umoba omdala noma okhahlamezekile kwisizini elandelayo.
- ▶ Tshala uhlobo lomoba olukwazi ukumelana nesihlava.
- ▶ Tshala kuphela imbewu ehloliwe.



I-Sesamia

- ◆ Isibungu esiphehla umoba esifana nesihlava
- ◆ Senza umonakalo omncane kunesihlava



Umehluko phakathi kweSihlava ne-Sesamia

I-Sesamia	Isihlava
Iwudla kancane umoba	Siwudla kakhulu umoba
Iyaphuza ukugoqana uma uyithinta	Siyashesha ukugoqana uma uyithinta
Ayikwazi ukuhamba ihlehle uma uyithinta ikhanda	Siyakwazi ukuhamba sihlehle uma uyithinta ikhanda
Ayinabo ubulwembu	Sinolwembu
I- Pink	Sisampunganga sakuba mnyama ngombala
Ihlasela ingaphezulu lomoba	Sihlasela ingezansi lomoba



Isibungu sopayi noma setashi

Sitholakala kuphi?

- ▶ Imvamisa siba ensimini engashiswanga
- ▶ Ngesikhathi sokuhlaha (Nhlaba kuya kuL wezi)
- ▶ Ebusuku sidla amaqabunga omoba osemncane
- ▶ Emini ngaphansi kopayi noma itashi

Umonakalo:

- ▶ Kungalahleka isivuno esingase sibe wu-17tc/ha uma izinambuzane ziziningi kakhulu
- ▶ Isitshalo sizobuye sikhule ngokuhamba kwesikhathi



Ukuvikela

- ▶ Ukuvikela ngokwemvelo: nge-fungi, izimpukane neminyovu enobuthi, izinyoni, izintuthwane, izicabucabu nokunye.
- ▶ Ukusetshenziswa kwezibulala zinambuzane
AKUNCONYIWE

Izintwala zomoba

- Ziyizinambuzane ezincane ezinemizimba ezacile nezimpaphe ezilula.
- Ezindala zibansundu ngokweqile noma zibemnyama (1mm ubude).
- Isibungu siba phuzi sibe namehlo abomvu.



Zitholakala kuphi?

- Phakathi kwiqabunga elingakavuleki, uzithola ngokulivula.
- Zitholakala unyaka wonke, zivamise kakhulu phakathi kukaMfumfu noNdasa.



Umonakalo:

- Zimunca imisoco emaqabungeni omoba
- Amaqabunga ayabophana, ome aphinde agoqane
- Zidala umbala ophuzi sakuba mhlophe emaqabungeni avulekile.

Ukuvikela:

- Faka isibulala-zinambuzane uma utshala.
- Ehlumeleni, futha emaqabungeni ngesibulala-zinambuzane.
- Gwema ukutshala umoba ozohlahlwa ekupheleni kwesikhathi sokuvuna.

Ithuku



Linjani?

- ◆ Isibungu simise okwesikela, isibungu esimhloshana noma esimpunga.

Litholakala kuphi?

- Ezimpandeni zomoba
- Livamise ukubonakala ngoNhlolanja kuya kuNcwaba.

Umonakalo

- Lidla izimpande zomoba
- Isitshalo asikhuli kahle sibe namaqabunga aphuzi.



Ukuvikela

- Ukuvikela akulula ngoba liphila emhlabathini
- Ukuvikela ngokwemvelo (I-fungi kanye nezinzambuzane ezisemhlabathini ezidla amathuku) akuthembekile
- Izibulala-zinambuzane kufanele zichelwe ngqo esibungwini, lokhu akulula ehlumeleni
- Izibulala - zinambuzane **AZINCONYIWE.**

Umuhlwa

- Awuvamisile ukudala umonakalo emobeni
- Umonakalo uvamise ukuba setshalweni, ngesikhathi sesomiso, emhlabathini oyihlabathi lapho umuhlwa ufuna ukuthola umswakama.

Ukuvikela

- Ayikho indlela enconyiwe okwamanje
- Ukuqala kwezimvula kuyasiza

Yini okumele uyenze

- Tshala kabusha izindawo ezidliwe



Imisundu emincane edla izimpande

- Thumela isampula lomhlabathi nezimpande kwa-SASRI ukuze bakhulolele ukuthi awunayo yini lemisundu edala umonakalo.
- Lena yimisundu emincane etholakala es'hlabathini (onobumba olungaphansi kwamaphesenti ayi - 6).
- Ayibonakali ngamehlo enyama.

Yini okumele uyenze?

- Tshala uhlobo lomoba olungahlaseleki kalula.
- Sebenzisa amadaka noma umquba ngenkathi utshala.

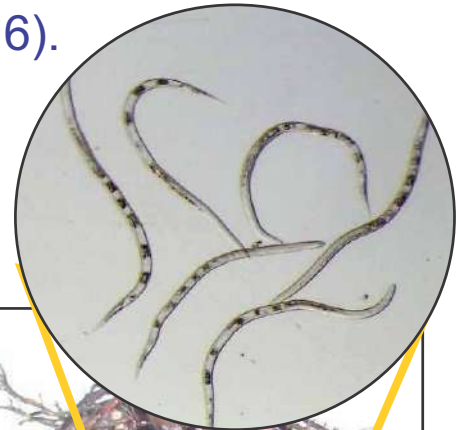
Umonakalo

- Ihlasela izimpande zomoba izenze zibe mfishane bese ziyavuvukala.

Izimpawu eziye zibonakale yilezi:

- Umoba ongalingani, obhashile namaxhantela angemahle kanye namaqabunga acijile kwasameva.

- **Ukuvikela** ➤ Sebenzisa izibulala-zinambuzane (Nematicide)



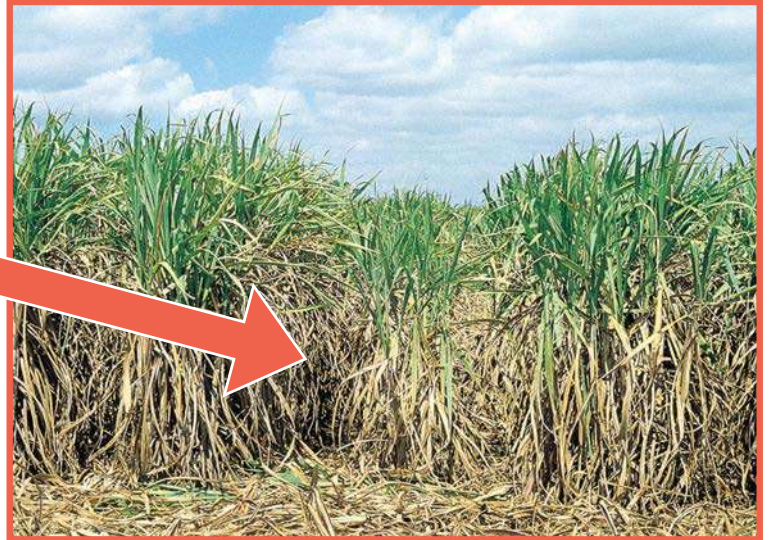
Izifo Zomoba

2018

Ikhasi 1

Izifo ezibalulekile zomoba ilezi:

1. Ubhasha (RSD)



2. Umabalabala (Mosaic)

3. Isiwumba (Smut)

Izifo Zomoba

Ikhasi 2

uBhasha - Isifo esibhashisa umoba

- Sitholakala kuzo zonke izindawo
- Zonke izinhlobo ezikhiqizwe eNingizimu Afrika ziyahlaselwa ilesi sifo

Senzani lesi sifo esibhashisa umoba?

- Ungalahlekelwa cishe isigamu sonke sesivuno sakho
- Sishaya kuzwele kakhulu emobeni ongondlekile kahle

Izimpawu

- Izingoqo ezizacile, ezimfushane futhi ezibhashile.
- Insimu ibukeka ingalingani
- Akulula ukuthi ubone uma sesihlasele



Yini eyandisa lesi sifo esibhashisa umoba?

- Ukutshala imbewu enaso lesi sifo
- Obhushu abangahlanzekile ngesikhathi kuhlahlwa
- Amavolontiya asala ensimini anesifo



Singanqandwa kanjani

- Sebenzisa imbewu ehloliwe kanye necwiliswe emanzini abilayo
- Mayihlolwe imbewu ukuthi ayinawo uBhasha
- Cwilisa obhushu emanzini anoshibhoshi uma uhlahla
- Susa amavolontiya ensimini



Izifo Zomoba

Ikhasi 3

uMabalabala

- UMabalabala utholakala ikakhulukazi ezindaweni ezibandayo kodwa nakwezinye izindawo uyatholakala
- Izinhlobo eziningi ezintsha ziyamelana nalesi sifo

Wenzani uMabalabala?

- Ukhuphula amathuba okulahlekelwa isivuno.

Izimpawu

- Isitshalo siba nombala ophuzi oyela kohlaza
- Amaqabunga wona aba nombala omabhadubhadu ngokuhlaza (Kulula ukusibona emaqabungeni omoba omcane).



Yini eyandisa lesi sifo uMabalabala?

- Ukutshala ngembewu enalesi sifo
- Sandiswa izinambuzane ezizishaya santwala okuthiwa i-maize aphid



Singanqandwa kanjani?

- Ngokusebenzisa izinhlobo zomoba ezimelana naso
- Ukutshala ngembewu engenasifo
- Ukunqanda ukhula notshani (ukhula lufukamela igciwane lalesi sifo)
- Qikelela ukugcina imithetho nemiyalelo yophiko lwamakomidi abhekene nezifo, izinambuzane nezemvelo.

Izifo Zomoba

Ikhasi 4

Isiwumba

- Isiwumba sitholakala ikakhulukazi ezindaweni eziseNyakatho yesifundazwe saKwaZulu Natali nezichelelayo.

Senzani isiwumba?

- Sidala ukulahlekelwa yisivuno
- Isivuno sehla minyaka yonke
- Ukulahleka kwesivuno kungafinyelela emaphesentini angamashumi ayisikhombisa nanhlanu (75%) emobeni okhahlamezekile.
- Ezinye izinhlobo ziyasizwela kakhulu lesifo isib. Nco376, N16, N39..



Izimpawu

- Uma sisaqala - isiqu sikhula sibe side
- Uma sesingenile - ukwakhela kwento esasiswebhu emnyama
- Isiqu esinalesi sifo sikhula kube sengathi utshani



Okusasiswebhu esimnyama



Umoba okhahlamezeke kakhulu

Yini eyandisa lesi sifo?

- Ukutshala imbewu enalesi sifo
- Izinhlamvu ezincane ezisuka emobeni onesifo zipheshulwa umoya
- Ukutshala emhlabathini onalesi sifo.

Singanqandwa kanjani?

- Ukutshala izinhlobo zomoba ezikwaziyo ukusimela lesi sifo isib. N27, N29, N35
- Ukutshala imbewu engenasifo
- Ukhiphe wonke umoba owubona ukuthi unalesisifo
- Insimu eshaywe kakhulu ilesi sifo, yitshale kabusha
- Khipha wonke amavolontiya
- Vikela umoba ungahlukumezeki.



Izifo Zomoba

Ikhasi 5

Ezinye izifo ezejwayelekile



Isifo sikaphayinaphu



Ukubola okubovu



Pokkah Boeng



Tawny Rust



Brown Rust



Ring Spot



Amachashaza ansundu

Izifo Zomoba

Ikhasi 6

Izifo ezingajwayelekile



Ukuncipha kwamaqabunga

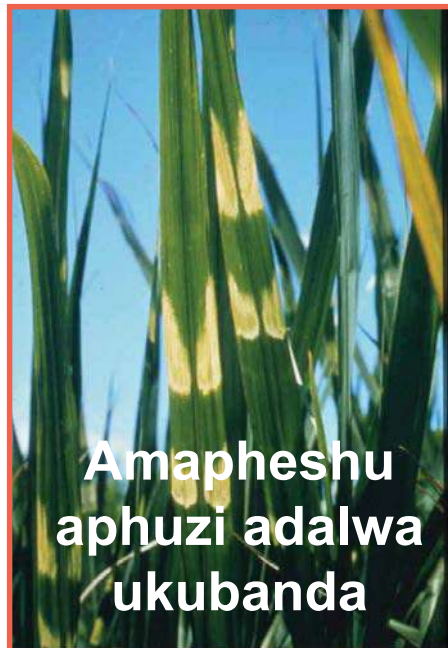


Amaqabunga aphuzi

Izimpawu okungezona ezezifo



Ukusweleka komsoco



Amapheshu aphuzi adalwa ukubanda



Ukulimala okudalwe isibulala-khula

UKUNQANDWA kokhula emobeni

2018

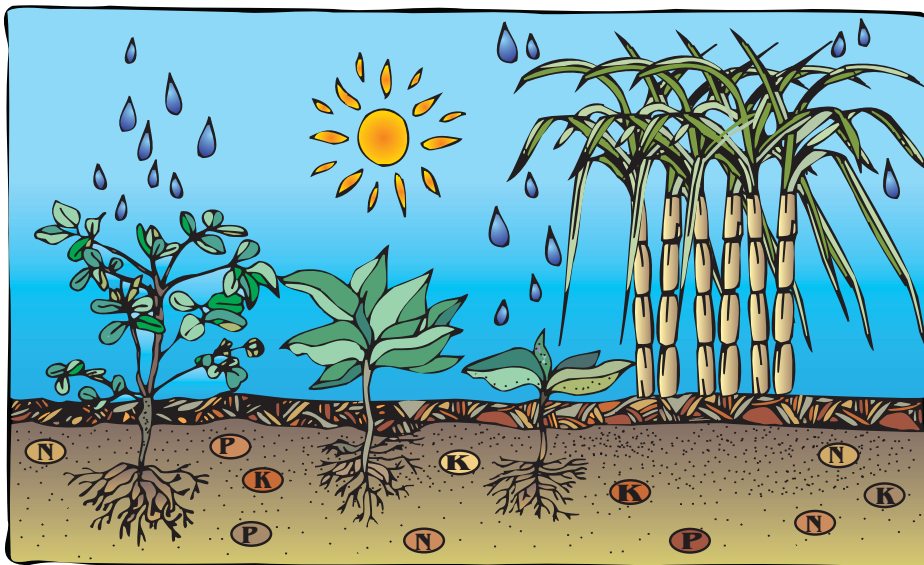
Ikhasi 1

Luyini Ukhula ?

Ukhula isitshalo esimile lapho singadingeki khona

Kungani Singaludingi Ukhula ?

- Ukhula luqhudelana nezitshalo ngalokhu:
 - ◆ Ukukhanya kwelanga
 - ◆ Amanzi
 - ◆ Imisoco



- Ukhula ludala ukuncipha kwesivuno
- Insimu yomoba kumele ingabi nokhula okungenani izinyanga ezintathu zokuqala itshaliwe noma ihlahliwe.

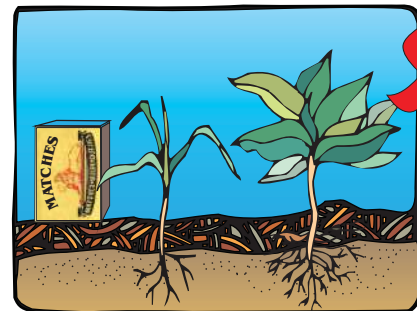
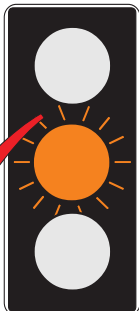
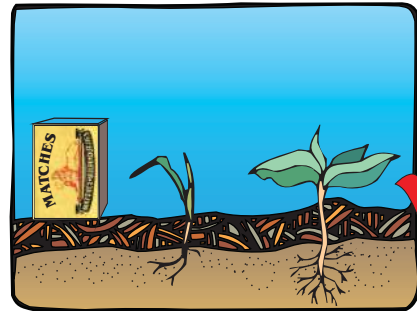
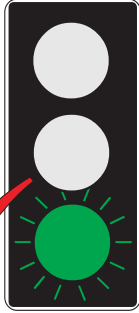
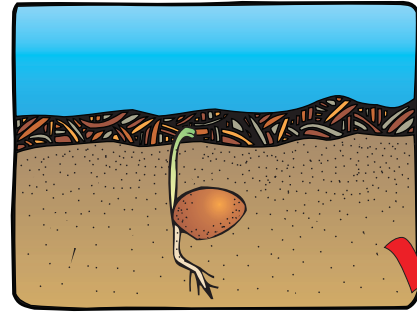
Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

UKUNQANDWA kokhula emobeni

Ikhasi 2

Izigaba zokukhula kokhula

- **Lunga kaveli**
 - Ngaphambi kokuba luqhume emhlabathini
- **Luseluncane emuva kokuvela**
 - Oluwutshani: Lunohlamvu olulodwa noma amabili
 - Ukhula olunamaqabunga abanzi lusengaphansi kwebhokisi likamentshisi
- **Emuva kokuvela**
 - Ukhula oluwutshani: Amahlamvu amabili kuya kwamane ngaphambi kokuba luqhakaze
 - Ukhula olunamaqabunga abanzi: lusengaphansi kwamasentimitha ayishumi ngaphambi kokwenaba kodwa lungakaqhakazi
- **Selulukhulu emuva kokuvela**
 - Utshani sebunabile
 - Ukhula olunamaqabunga abanzi selungaphezu kuka-10cm noma seluqhakazile



UKUNQANDWA kokhula emobeni

Ikhasi 3

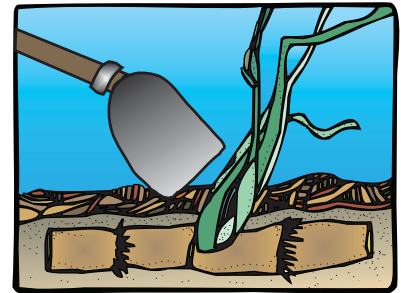
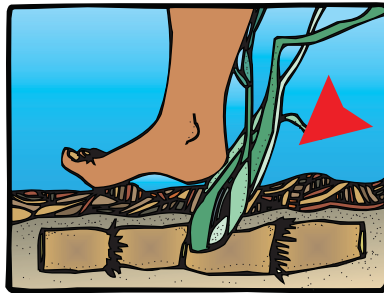
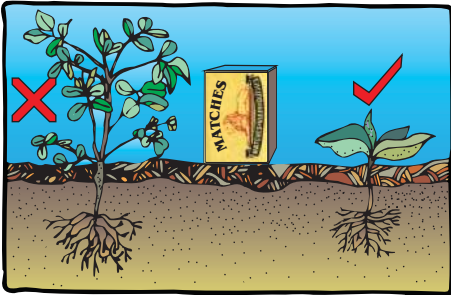
Izindlela zokunqanda ukhula

• Ngezandla

Ukuhlakula kungashibha

KODWA

- Kumele kwenziwe njalo (ngokujwayelekile)
- Kudinga abantu abaningi
- Kuyadula uma kuphuze ukwenziwa
- Kuhamba kancane
- Ukhula akumele luze lube ngaphezulu kwebhokisi likamentshisi
- Lungabuye lutshaleke ukhula
- Kungalimaza umoba osaqhumayo



UKUNQANDWA kokhula emobeni

Ikhasi 4

Izindlela zokunqanda ukhula

• Ngezibulala-khula (uphoyizeni)

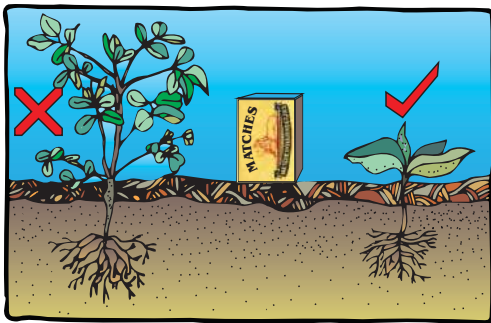


- Kufuna isibulala-khula okuyiso
 - Kudinga isigubhu sokufutha
 - Kufuna uqikelele/uqaphele
- KODWA**
- Kusebenza isikhathi eside (kuya emasontweni angu-14/16)
 - Kuyashesha
 - Kudinga umhlabathi oswakeme
 - Ukuwuhlanganisa (mixing) kahle kubalulekile

Umoba oyitshalo

Futha umhlabathi ongenalutho emuva kokutshala

Sebenzisa umuthi wokhula olungakaveli



Umoba osuke wahlahlwa

Shesha ufuthe emuva kokuhlahla

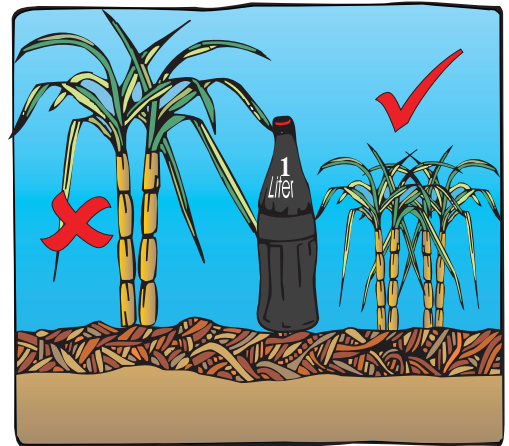
Ukhula akumele lube lude kunebhokisi likamentshisi

UKUNQANDWA kokhula emobeni

Ikhasi 5

Qikelela uma usebenzisa izibulala khula

- Zama ukungafuthi amaqabunga omoba
- Umonakalo uba mncane uma ufuthe umoba usengaphansi kwelitha kadilinki
- Uma umoba usungaphezu kuka-30cm, futha phakathi kolayini
- Qikelela ukuthi isifutho sakho sisebenza kahle njalo
- Sebenzisa i-flood jet nozzle



Ukugcinwa nokusebenzisa izibulala khula

- Funda okubhalwe ngaphandle ngokucophelela
- Beka imithi endaweni ephephile/ekhiyekayo
- Sebenzisa amanzi ahlanzekile, amanzi emvula yiwona anconywa kakhulu
- Sebenzisa izingubo zokuvikela

UKUNQANDWA kokhula emobeni

Ikhasi 6

Izimpawu zomonakalo wezibulala- khula

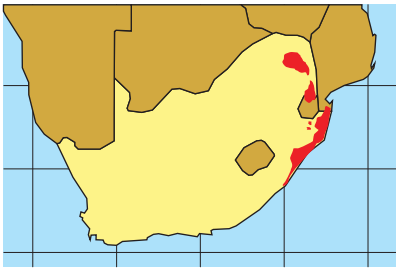
- Ukungaqhumi komoba kahle
- Ukubhasha komoba
- Amachashaza ansundu naphuzi emaqabungeni
- Amaqabunga angajwayelekile emobeni
- Umoba uba nemixhantela



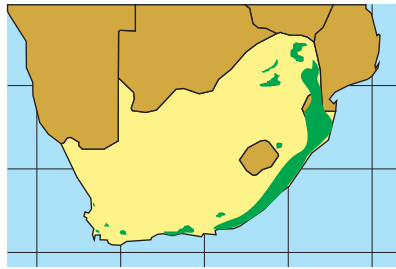
Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yiye yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

ALIEN PLANTS ¹

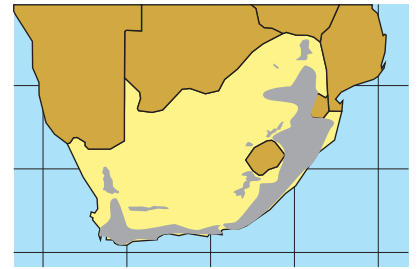
Ziyini izifikanamthwalo noma izinhlaseleli?



USANDANEZWE



UBHICI



UWATELA

Ziqhamukaphi lezizinhlaseli noma izifikanamthwalo?

Zifika ngengozi ziqhamuka kwamanye amazwe



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhalwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

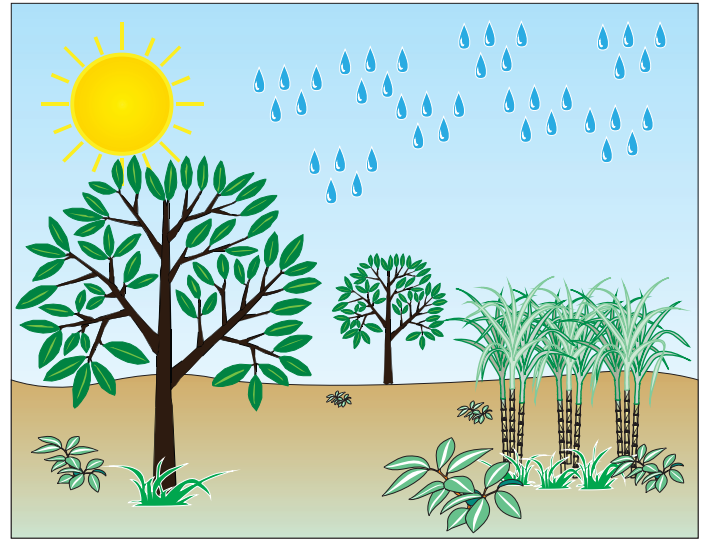
ALIEN PLANTS 2

Yini kumele zinqandwe lezizitshalo?

Izinhlaseleli zincintisana nezinye izitshala nge:

- langa
- Amanzi
- Imisoco
- Indawo

- Zibulala utshani bemvelo
- Zandisa ukuguguleka komhlabathi
- Zibulala imvelo.



Yini eyenza lezi zitshalo zihlasele kangaka?

- Zikhiqiza imbewu eningi
Usandanezwe nje ukhiqiza izigidi zembewu
- Imbewu ihlala isikhathi eside emhlabathini
Imbewu kawatela ihlala iminyaka engaphezulu kuka 80
- Imbewu isabalala kalula
Ngomoya, ngamanzi, izilwane kanye nemishini
- Zinezitha eziyingcosana zemvelo

ALIEN PLANTS ^{3a}

Ukuzikhomba nokuzihlunkanisa ngezigaba ISIGABA SOKUQALA

1. Usandanezwe
2. Ubhici noma ubukhwebezane
3. Ubhongabhonga
4. Pereskia



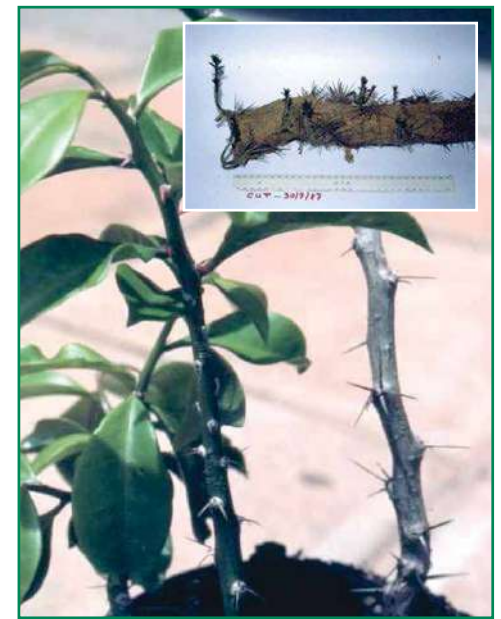
Usandanezwe



Ubhici noma ubukhwebezane



Ubhongabhonga



Pereskia

ALIEN PLANTS ^{3b}

Ukuzikhomba

ISIGABA SESIBILI

- Zivunyelwe kuphela uma unemvume yakwa Agricultural Resource Management
- Kumele kunqandwe ukusabalala kwazo

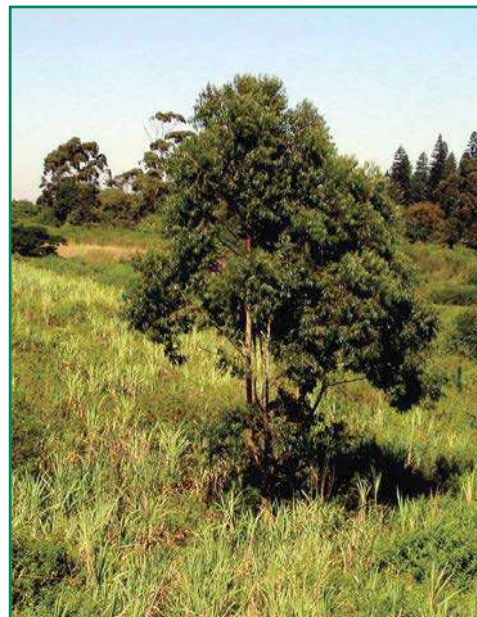
1. Ugwava
2. Uwatela
3. Indlulamithi
4. Uphaya



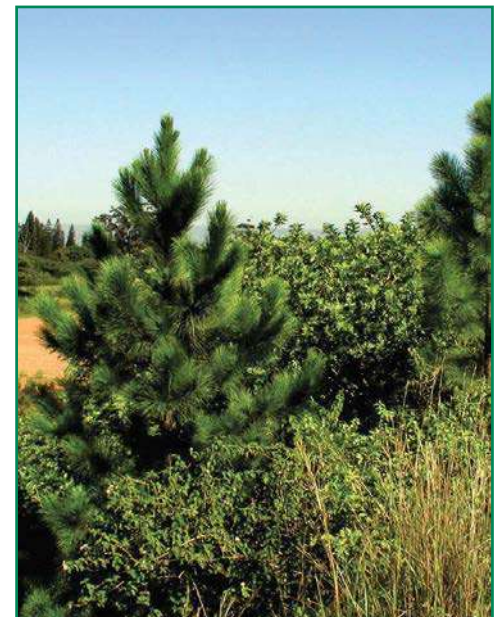
Ugwava



Uwatela



Indlulamithi



Uphaya

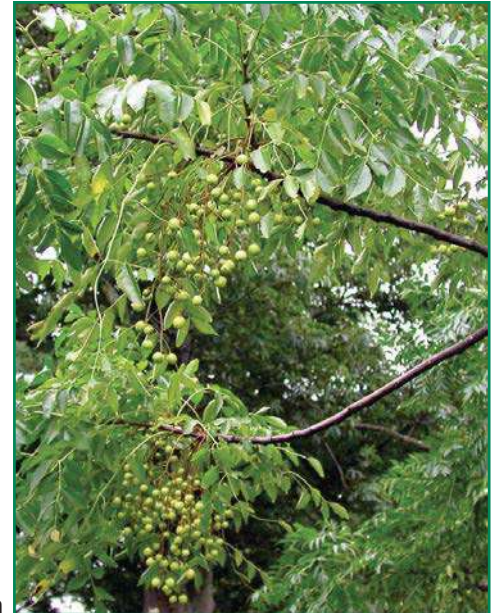
ALIEN PLANTS ^{3C}

Ukuzikhomba

ISIGABA SESITHATHU

- Ukudayiswa nokuqhutshekwa kokutshalwa kwazo akuvunyelwe

1. Umsilinga
2. Ijacaranda
3. Loquat
4. Umalibhele



Umsilinga



Ijacaranda



Loquat



Umalibhele

ALIEN PLANTS ^{4a}

Izindlela zokunqanda

● Ngezandla

● Ngokwemvelo

● Ngemithi

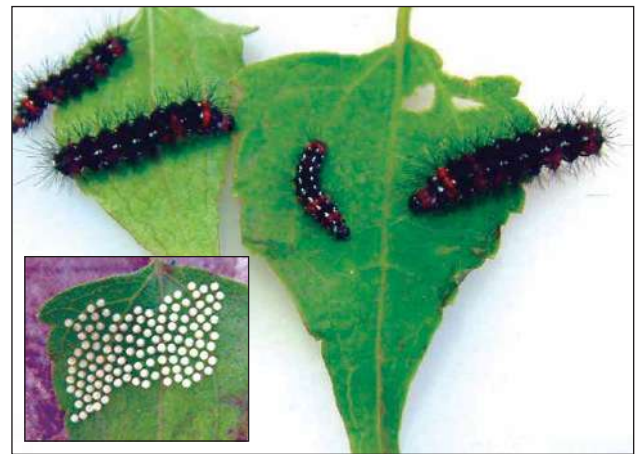
NGEZANDLA

- Ukusumpula izitshalo ngezandla
- Ukuhesha nokushisa
- Ukuxebula amagxolo



NGOKWEMVELO

- Ukusebenzisa izitha zemvelo
- Isebenza kakhulu uma izitshalo zicinene
- Zidla kuphela izifikanamthwalo hayi ezinye izitshalo



NGEMITHI

Ifakwa:

- Esihlahleni esinqunyiwe
- Esiqwini
- Emahlamvini



ALIEN PLANTS ^{4b}

Impahla Engasetshenziswa

Ibhulashi lokupenda

- Lisetshenziswa ukugcoba izinqamu zezihlahla

Ucelemba

- Ukunqamula isiqu
- Ukuxebula amagxolo
- Ukuhesha izihlahla ezicinene



Isigubhu saphoyizeni nenzolo

- Ukuchela izitshalo ezihluma kabusha
- Ukuchela amahlamvu
- Nezingamu zezihlahla



Ukususa lezi ezihluma kabusha

- Ziheshe izihlahla ezicinene ebusika
- Chela lezo ezimila kabusha entwasahlobo
- Lezo ezimila kabusha kumele zichelwe ngesikhathi sezifika edolweni
- Ukuhesha makulandelwe ukuchela ngomuthi



ALIEN PLANTS 5

Izigaba Zokunqanda

Zonke izigaba zidinga uhlelo lokulandela

Isigaba sokuqala

Ukunqanda okuncane

- Uma izinhlaseleli zingeningi
- Kushibhile futhi kulula

Isigaba sesibili

Ukunqanda okuphakathi nendawo

- Susa izithombo kanye nalezo ezimilayo futhi

Isigaba sesithathu

Ukunqanda okukhulu

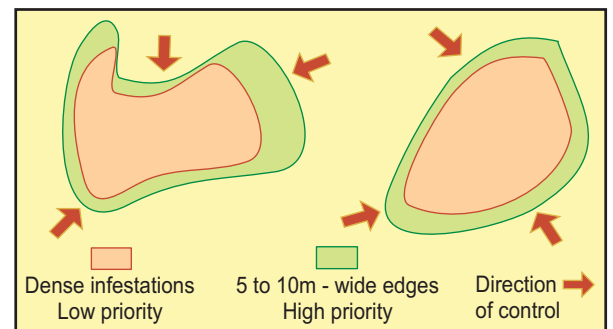
- Nqanda ezinkulu izitshalo
- Lezo ezikhulile zizokhiqiza imbewu
- Qala kuphela uma sewuke wazinganda ngezindlela ezingaphezulu

- Uma ungenayo imali zinqande onqenqemeni lapho ziningi khona

- Khuthaza ukukhula kotshani, ukuze umhlabathi ubuyele esimweni sawo okuzovimba ukuguguleka komhlabathi



Confine edges of dense infestations



ALIEN PLANTS ⁶

Ukunakekelwa nokusetshenziswa kwemithi

- Qiniseka ukuthi hlobo luni lwesitshalo
- Khetha umuthi ofanele
- Khetha indlela okuyiyonayona yokuchela umuthi
- Imithi iyingozi futhi iyabiza ngakho fundisisa ilebula
- Abantu abasebenzisa lemithi kumele baqeqesheke kulokho
- Xuba imithi ngokufanele
- Sebenzisa amanzi ahlanzekile
- Gqoka impahla ekuvikelayo ngasonke isikhathi
- Gcina imithi endaweni evalekayo nephephile
- Shisa izitsha ebeziphethe imithi



UKUCHELELA

2018

1

UKUSETSHENZISWA
KWAMANZI

UKUFAKWA
KWAMANZI

Ukuphefumula

Imvula

Ukuchelela

Umhwamuko

Ukugeleza
kwamanzi
ngaphezulu

Angena Emhlabathini

Ukukhameka nokuchinineka okujulile

Amalungelo okuqopha aquketwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nangenoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluquketwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.



SOUTH AFRICAN SUGARCANE
RESEARCH INSTITUTE

IZINHLELO ZOKUCHELELA



Ubhongozi/
umanqomfoza



Drip



Izinyoni\
Ifokofoko

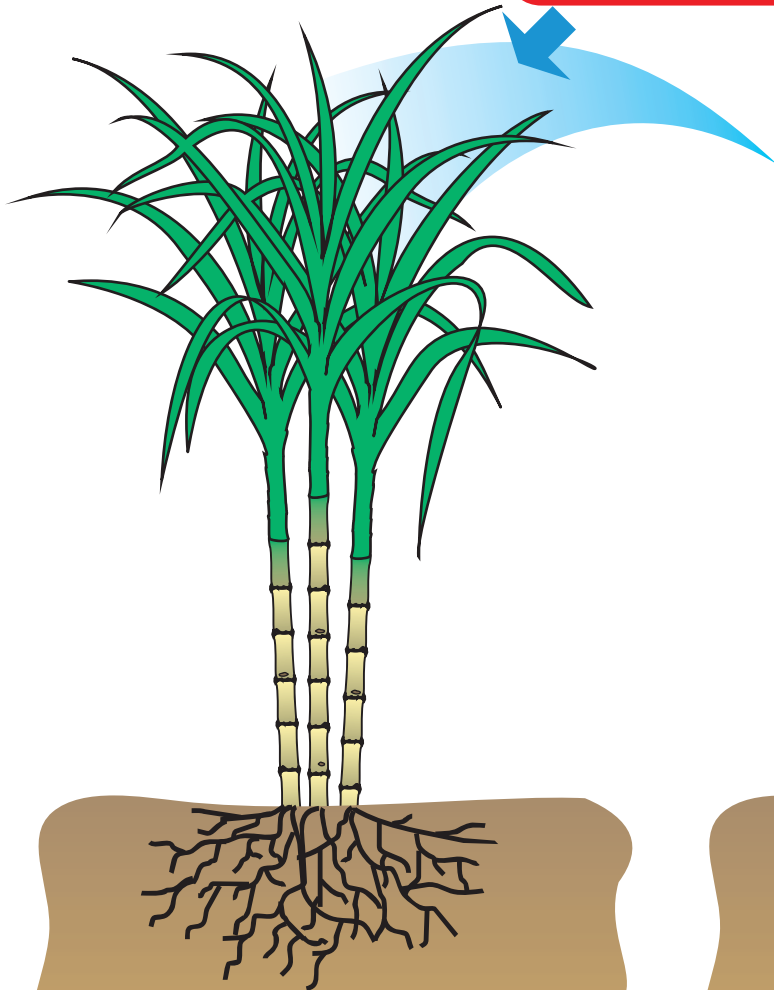


Solid Set
(floppy)

Ukusebenza kwamanzi nokulahleka kwawo



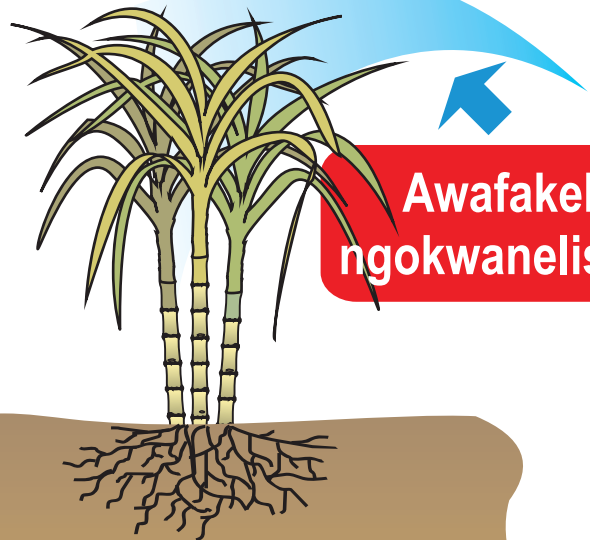
Afakeka ngokwanelisayo



Ukusebenza kwamanzi nokulahleka kwawo

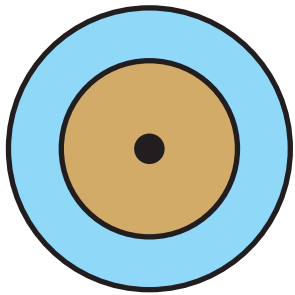


Awafakeki ngokwanelisayo

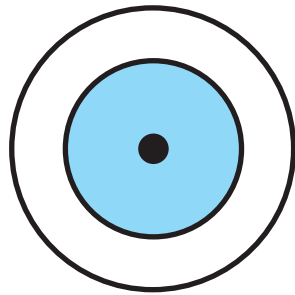


IZINHLELO ZOKUCHELELA

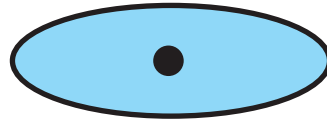
3



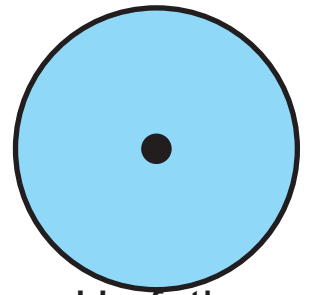
Umfutho oza kancane



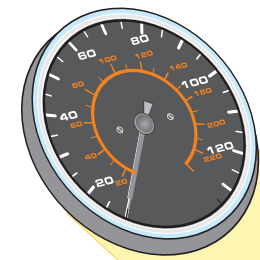
Umfutho oza kakhulu



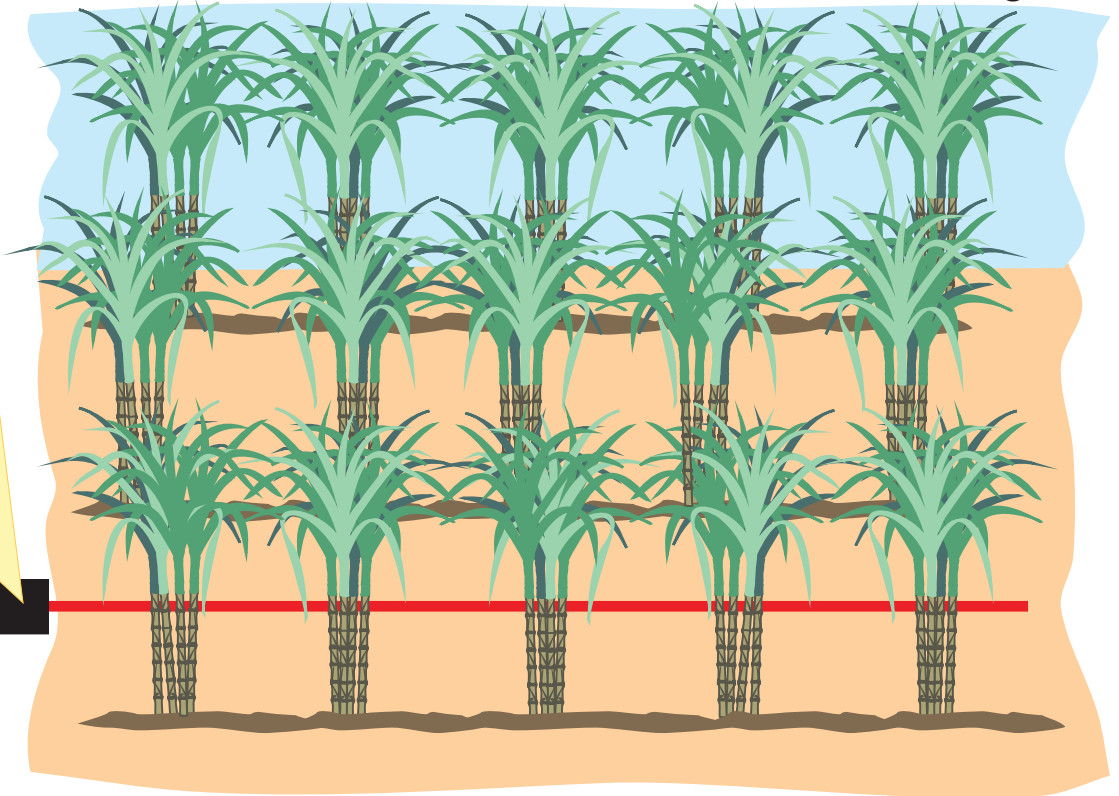
Ipayipi elitshekile



Umfutho oza ngendlela elungile



Isikali somfutho



Izinto ezidala ukuba amanzi angangeni ngokwanele

1. Umfutho oza kancane.
2. Ukuvuza.
3. Isilinganisa okungesiso senozolo (ishintshe minyaka yonke).
4. Izifafazo eziningi kakhulu ngehheka.
5. Ukunwebeka okungaphezu kwesiklamo sokuchelela.

UKUCHELELA

4

Ukuthathwa kwesampula lomhlabathi (emasontweni ayisishiyagalombili)



Faka imithi evuthiswa umoba (amasonto ayisithupha)



Yeka kome (amasonto amane)



(Ungazikhethela) Ukufaka isikofela (esontweni elilodwa)



UKUHLAHLA

Qala futhi uchelele (Esontweni elilodwa)



(Esontweni elilodwa)



Faka umanyolo (emasontweni amabili)



Faka izibulali khula (ngokuqhubeka emasontweni amathathu)



Faka umanyolo ngokuwuhlukanisa (Esihlabathini) (8-10 weeks)



Gcwalisa lapho kunezikhala khona kusukela ngo Ncwaba (August) kuya phambili



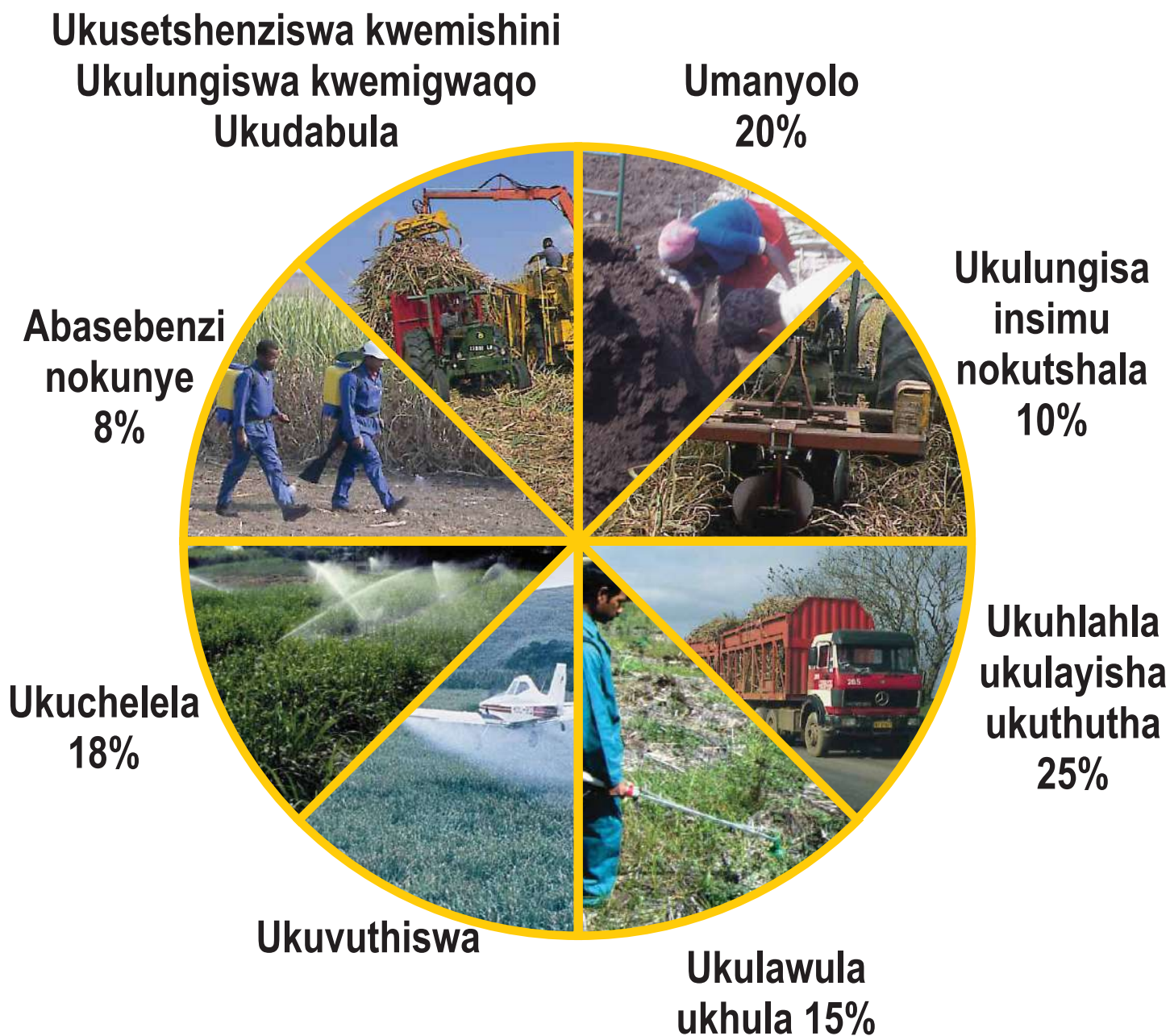
Ukuthathwa kwesampula lamaqabunga (ezinyangeni ezintathu kuya kwezinhlanu)



Hlela ukuba ikomidi lezifo nezinambuzane lizokuhlolela ezinyangeni eziyisishiyagalombili

IZINDLEKO ZOKUKHIQIZA UMOBA

5

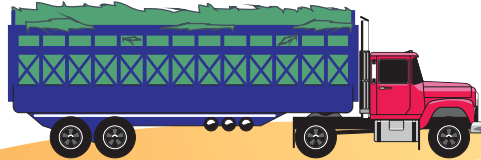


Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

UKUHAMBA KWEMALI

6

Isigayo



Ukuhlahla

Omabhalane
Basesigayweni



Umlimi

Izikwelethu

Land Bank, Ukuhlahla,
Ukuthutha, UAF

Intela

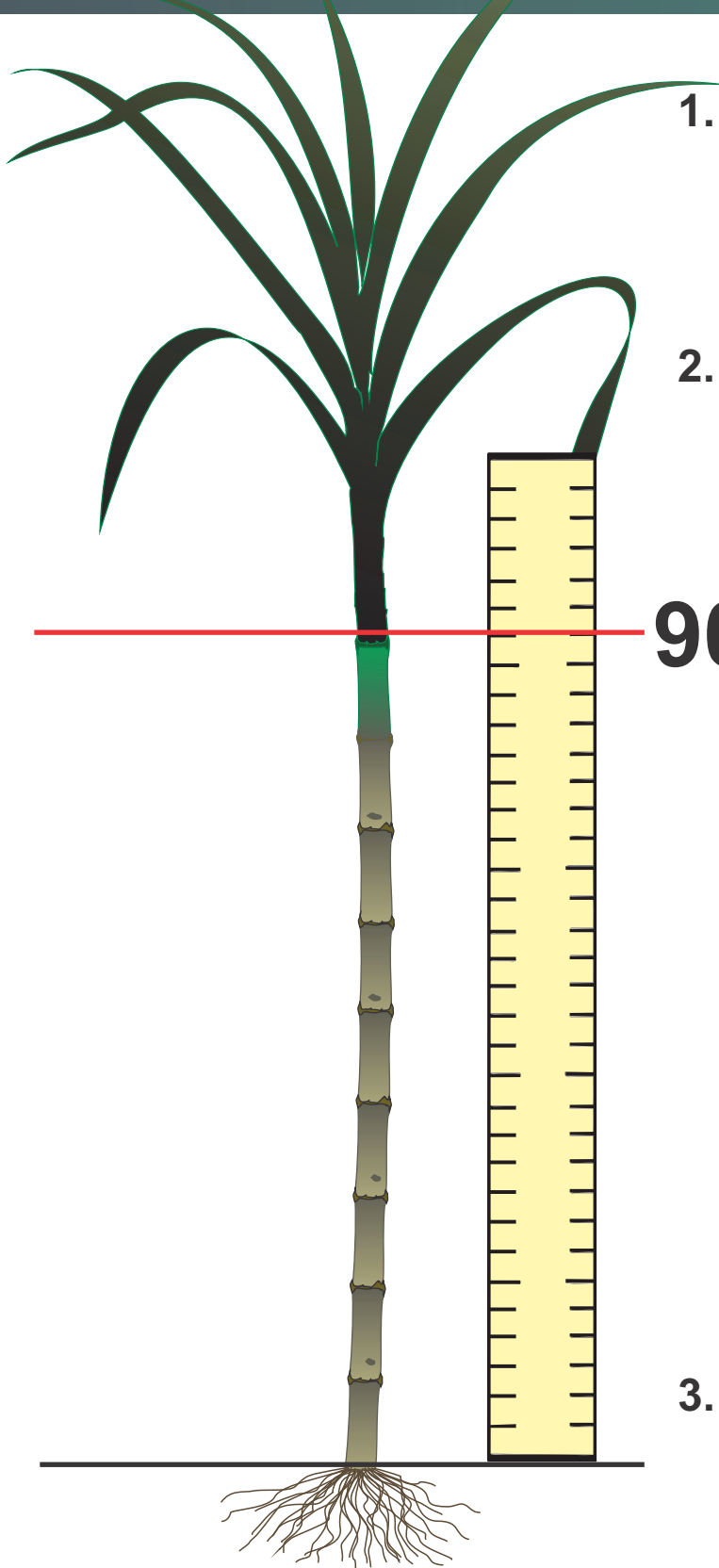
Isikhwama
Esibanjwayo

Umanyolo, Usokontileka,
Ukubulala ukhula, Itoho,
eyokuginca insimu iyinhle,
Ugesi / Ukuchelela, Nokunye

IZILINGANISO ZESIVUNO SOMOBA NGEHHEKA

1

Uma ugxila kubungako kanye nesisindo sezingoqo



1. Kala ubude bogoqo lomoba ukusuka esiqwini salo kuze kufike lapho isikhaba somoba siziphukela khona.
2. Kuphindaphinde kalishumi ezindaweni ezahlukene ensimini yakho.

90 cm

Isibonelo = 90
96
89
101
75
94 cm
84
102
92
81
904 cm

3. Ubude bogoqo lomoba = $904 \div 10 = 90.4$ cm

Isilinganiso sesivuno = $\text{ubude bogoqo lomoba} \div 2 = 90.4 \div 2 = 45.2$ amathani ngehheka

IZILINGANISO ZESIVUNO SOMOBA NGEHHEKA

Isisindo esifakwa umoba inyanga nenyanga

Sebenzisa ithebula leli elikhuluma ngamathani afakwa umoba inyanga nenyanga ukuthola ukuthi ngesikhathi sokuhlala umoba uzobe ungamathani amangaki.

Amathani afakwa umoba inyanga nenyanga ehhekeni

	3 amathani	4 amathani	5 amathani	6 amathani	7 amathani	10 amathani
Izinyanga	Aphansi kakhulu	aphansi	phakathi nendawo	aphezulu	aphezulu kakhulu	Ezindaweni eziniselwayo
Mbasa	4	5	6	7	8	12
Nhlaba	1	2	3	4	5	7
Nhlangulana	0	1	2	3	4	6
Ntulikazi	0	0	1	2	3	4
Ncwaba	0	0	1	2	3	4
Mandulo	0	1	2	3	4	6
Mfumfu	1	2	3	4	5	7
Lwezi	4	5	6	7	8	12
Zibandlela	6	7	8	9	10	14
Masingana	7	9	10	11	12	17
Nhlolanja	7	9	10	11	12	17
Ndasa	6	7	8	9	10	14
Total	36	48	60	72	84	120

IZILINGANISO ZESIVUNO SOMOBA NGEHHEKA Isibonelo

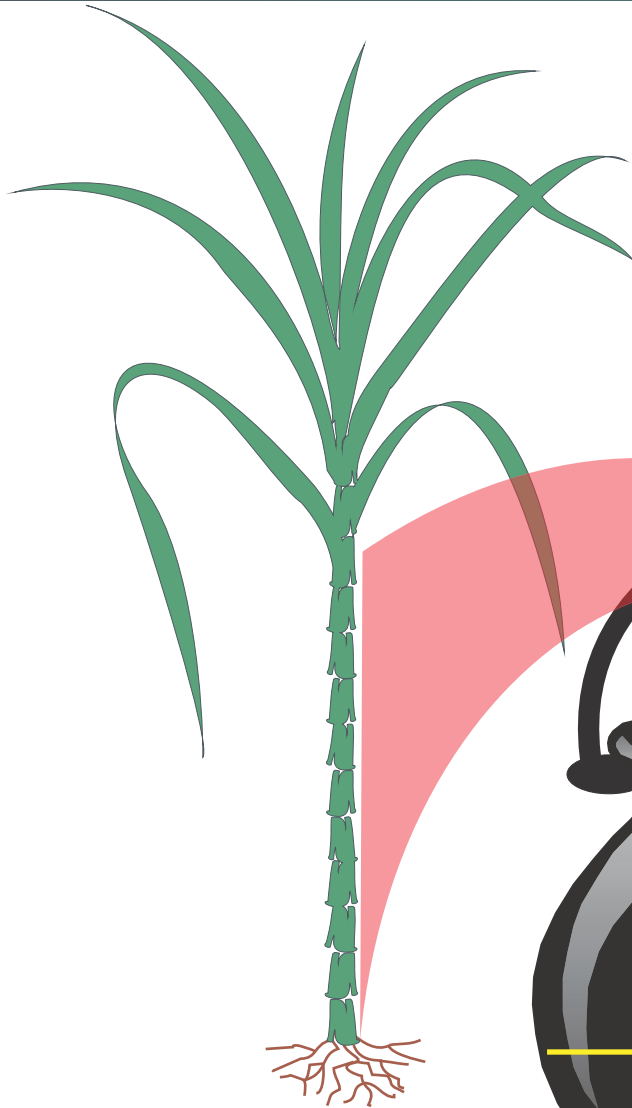
3

- Usuku okwenziwe ngalo izilinganiso 2 June (Nhlangulana)
- Ubudala bomoba izinyanga eziyisishiyagalolunye (9 months)
- Izilinganiso 45 amathani ehhekeni
- Isigaba samathani angena inyanga nenyanga uma ukukhula kungokwejwayelekile, 45 amathani ngehheka ÷ izinyanga eziyisishiyagalolunye = amathani amahlanu ngenyanga 30 August (Ncwaba)
- Usuku okuzohlhlwa ngalo
- Yengeza amathani azofaka umoba ngalezi nyanga ezilandelayo (Nhlangulana, Ntulikazi kanye noNcwaba), ubheka kwithebuli elikhuluma ngamathani afakwa umoba

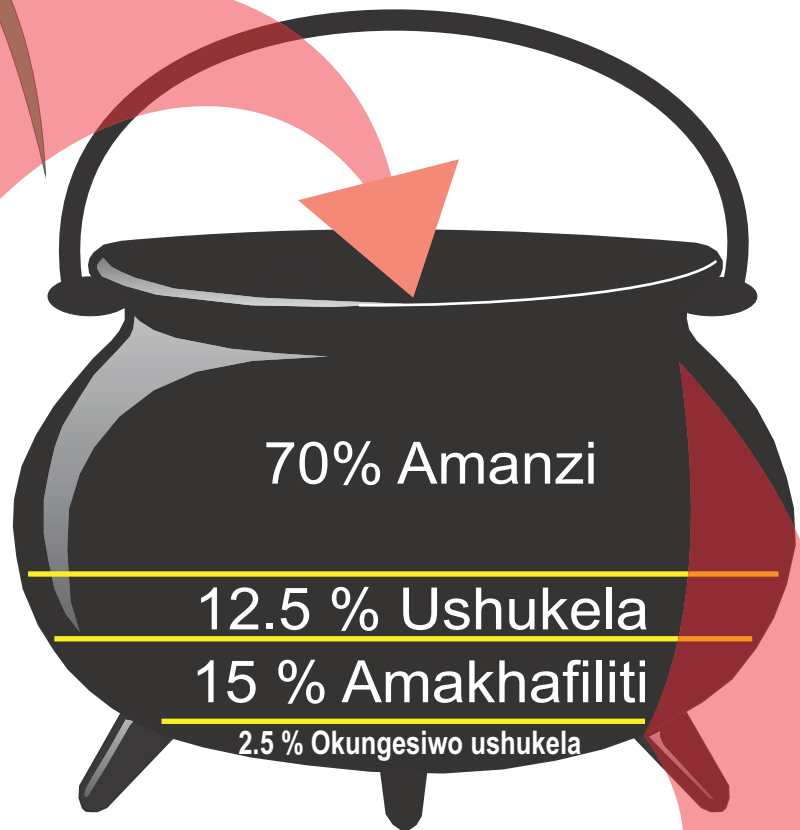
Amathani afakwa umoba inyanga nenyanga ehhekeni

	3 amathani	4 amathani	5 amathani	6 amathani	7 amathani	10 amathani
Izinyanga	Aphansi kakhulu	aphansi	phakathi nendawo	aphezulu	aphezulu kakhulu	Ezindaweni eziniselwayo
Mbasa	4	5	6	7	8	12
Nhlaba	1	2	3	4	5	7
Nhlangulana	0	1	2	3	4	6
Ntulikazi	0	0	1	2	3	4
Ncwaba	0	0	1	2	3	4
Mandulo	0	1	2	3	4	6
Mfumfu	1	2	3	4	5	7
Lwezi	4	5	6	7	8	12
Zibandlela	6	7	8	9	10	14
Masingana	7	9	10	11	12	17
Nhlolanja	7	9	10	11	12	17
Ndasa	6	7	8	9	10	14
Total	36	48	60	72	84	120

**Ubungako bamathani omoba ngesikhathi sokuhlala =
45 amathani ngehheka + 4 amathani ngehheka = 49 amathani ngehheka**

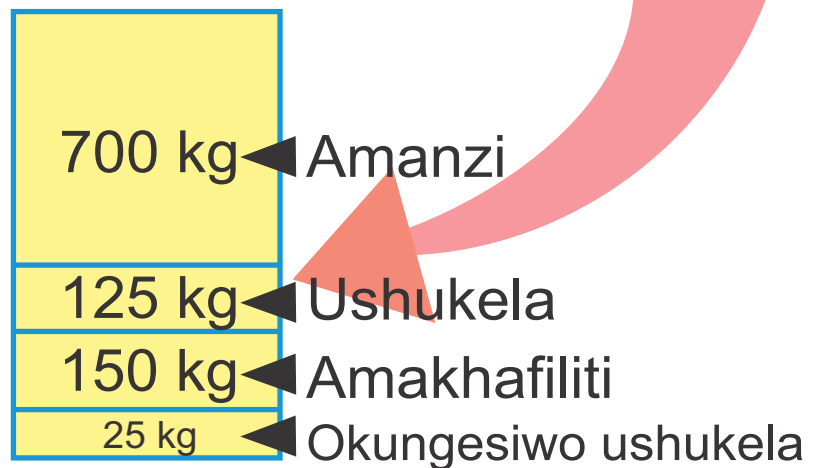


Yini esogoqweni lomoba?



**Ithani lomoba
(1000 kg)**

=



YINI EYENZA UMOBA UBE MUHLE?

Ubuhle bomoba buqala ensimini

Ukunakekelwa Kwensimu

- Imbewu eseqophelweni
- Uhlobo lomoba
- Ukulungiswa komhlabathi
- Insimu engenakhula
- Insimu efakwe umanyolo owanele
- Insimu engenazo izifo nezinambuzane



Ukuhlahla

- Ubudala bomoba
- Ukugawulela phansi
- Ukunquma amathopisi
- Umoba ohlanzekile
 - ongenapayi
 - ongenanhlabathi
 - ongenazimpande



Ukubambezeleka komoba

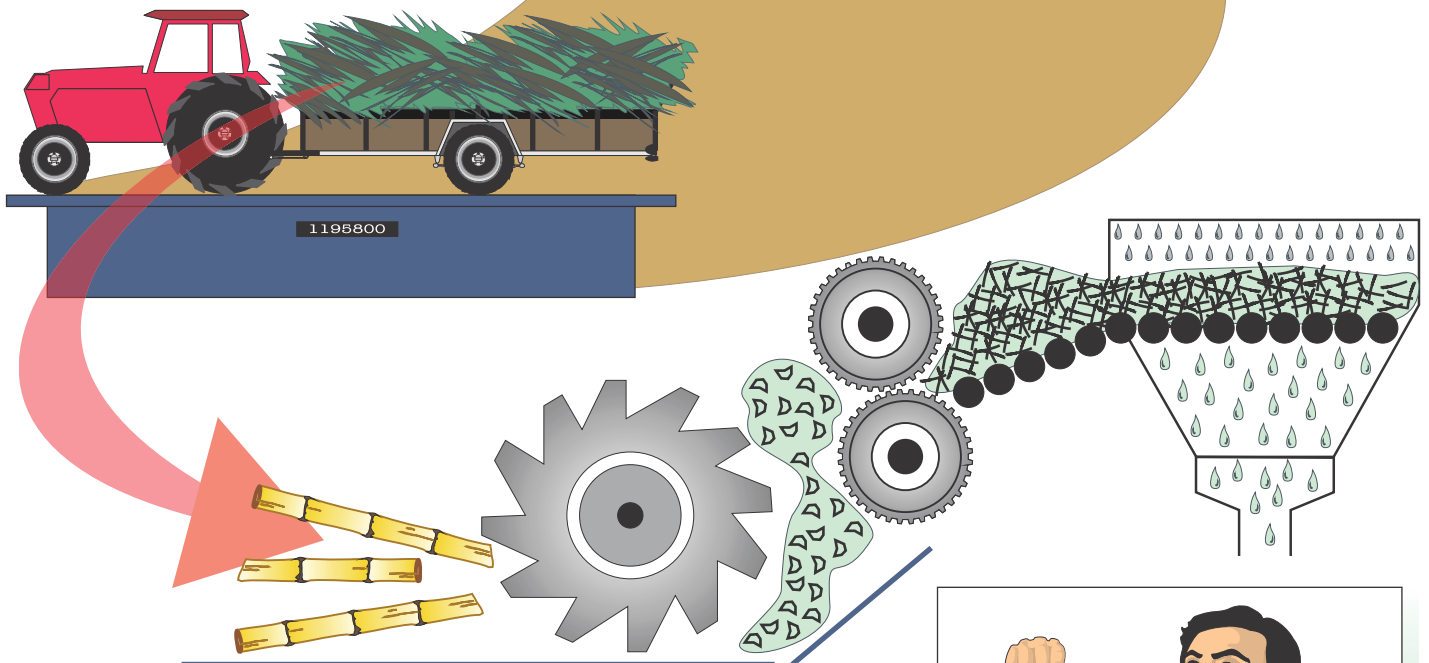
- Kusukela ekushisweni kuya ekugayweni
 - Hambisa umoba esigayweni ngokuphuthuma
 - Umoba omuhle = umoba osezingeni
 - Shisa umoba olingene (owosuku olulodwa noma ezimbili) ozosheshe uhambe
 - Ungashiya amabhondela ensimini

BUHLOLWA KANJANI UBUHLE BOMOBA?

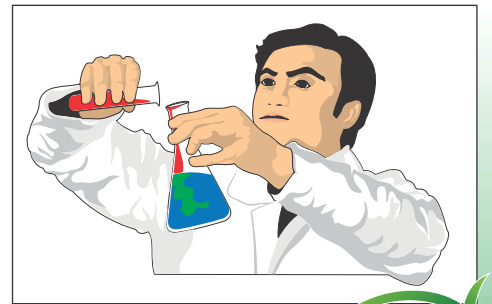
3



Ubuhle bomoba buhlolwa
yi 'CTS' = abahlola
ubushukela emobeni
hhayi isigayo



i-CTS ihlola
ubungako bukashukela %,
okungeshukela kanye namakhafiliti



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

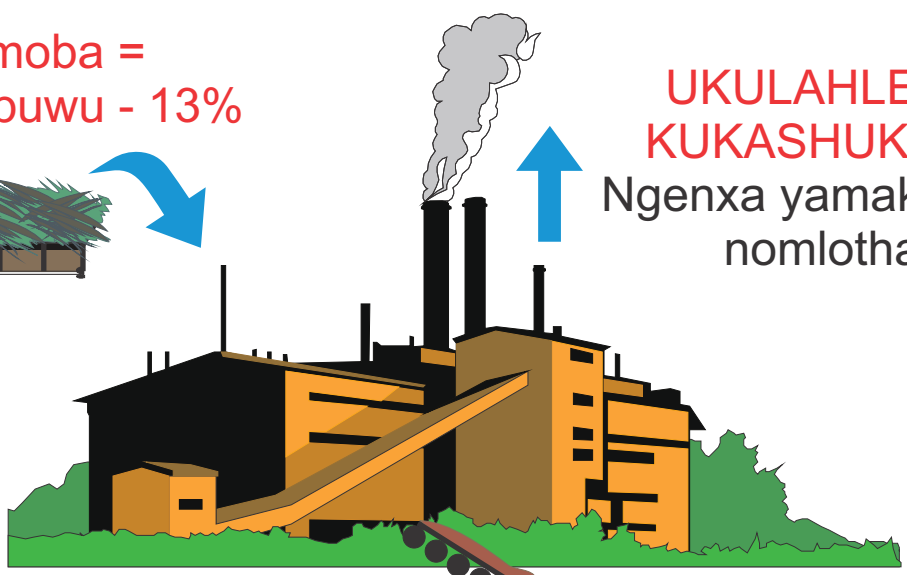
NGABE YIKUPHI LAPHO KULAHLEKA KHONA USHUKELA?

NGOBA UBUHLE BUKAMOBA KUTHINTA IZINGA LOMKHIQIZO

Amathani omoba = anobushukela obuwu - 13%



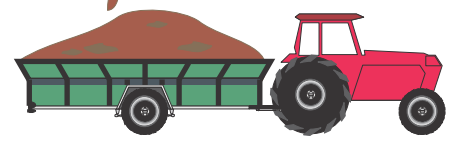
UKULAHLEKA KUKASHUKELA
Ngenxa yamakhafiliti nomlotha



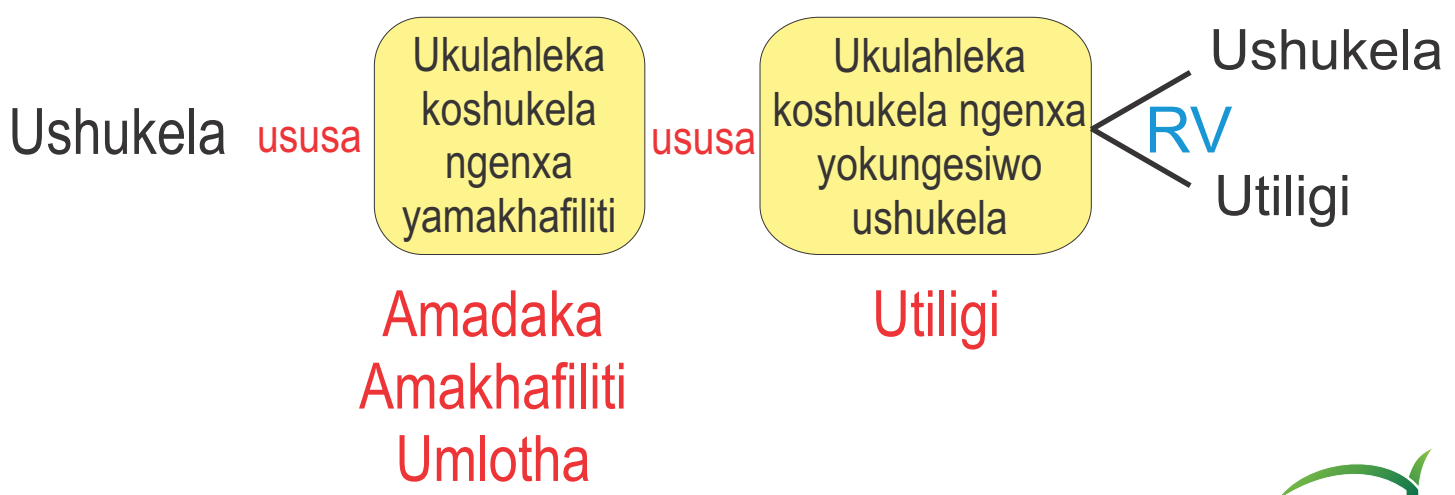
UKULAHLEKA KOSHUKELA
Yokungesiwo ushukela



UKULAHLEKA KOSHUKELA
Amadaka



USHUKELA



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqkethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.



UKUKHOKHELWA NGE-RV

RV

(R971,02)

RV% ilingana ne% kashukela
ususa 0,02% wamakhafiliti uphinde
ususe 0,04% wokungesiwo
ushukela

Amathani e-RV alingana ne RV%
iphindaphindwa ngamathani omoba

i-RV ibala ubungako
bamakhafiliti nokungesiwo
ushukela okutholakale emobeni

UKUKHOKHELEKA

	Uhlobo olungeluhle izinsuku eziyisikhombisa ubudala (7 days) Amathophisi angemahle	Uhlobo olungcono izinsuku ezine zobudala (4 days)	Uhlobo oluhle izinsuku ezimbili zobudala (2 days) Amathophisi asikwe ngendlela
Okungesiwo ushukela % Amakhafiliti % i-RV %	15.5 3 10.99	14.5 2.4 11.75	13.5 2 12.43
Inkokhelo yemali ngamathani omoba			
i-RV (R)	109.43 - R3.07	117.00	123.77 + R2.27

* RV = Inzuzo yomoba Osebenzile

UKUBAMBEZELEKA KOMOBA KUBIZANI?

Intengo yomoba R4 292.14
Amathani x RV % x Intengo yomoba = Inzuzo

Izinsuku phakathi kokushisha nokugaya	Amathani	i- RV % yomoba	Inzuzo (ngama randi)	Inzuzo elahlekile
Usuku lokuhlala	5.00	11.78	252 807.05	0.00
Ukubambezeleka ngosuku olulodwa	4.95	11.71	248 791.75	4 015.30
Ukubambezeleka ngezinsuku ezimbili	4.90	11.65	245 016.81	7 790.24
Ukubambezeleka ngezinsuku ezinthathu	4.85	11.58	241 059.46	11 747.59
Ukubambezeleka ngezinsuku ezine	4.80	11.51	237 132.15	15 674.90
Ukubambezeleka ngezinsuku ezinhlanu	4.75	11.44	233 234.89	19 572.16
Ukubambezeleka ngezinsuku eziyisithupha	4.70	11.37	229 367.67	23 439.38
Ukubambezeleka ngezinsuku eziyisikhombisa	4.65	11.29	225 330.91	27 476.14
Ukubambezeleka ngamasonto amabili	4.30	10.73	198 035.05	54 772.00



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

INKOKHELO NGOKWESIGAYO

2018

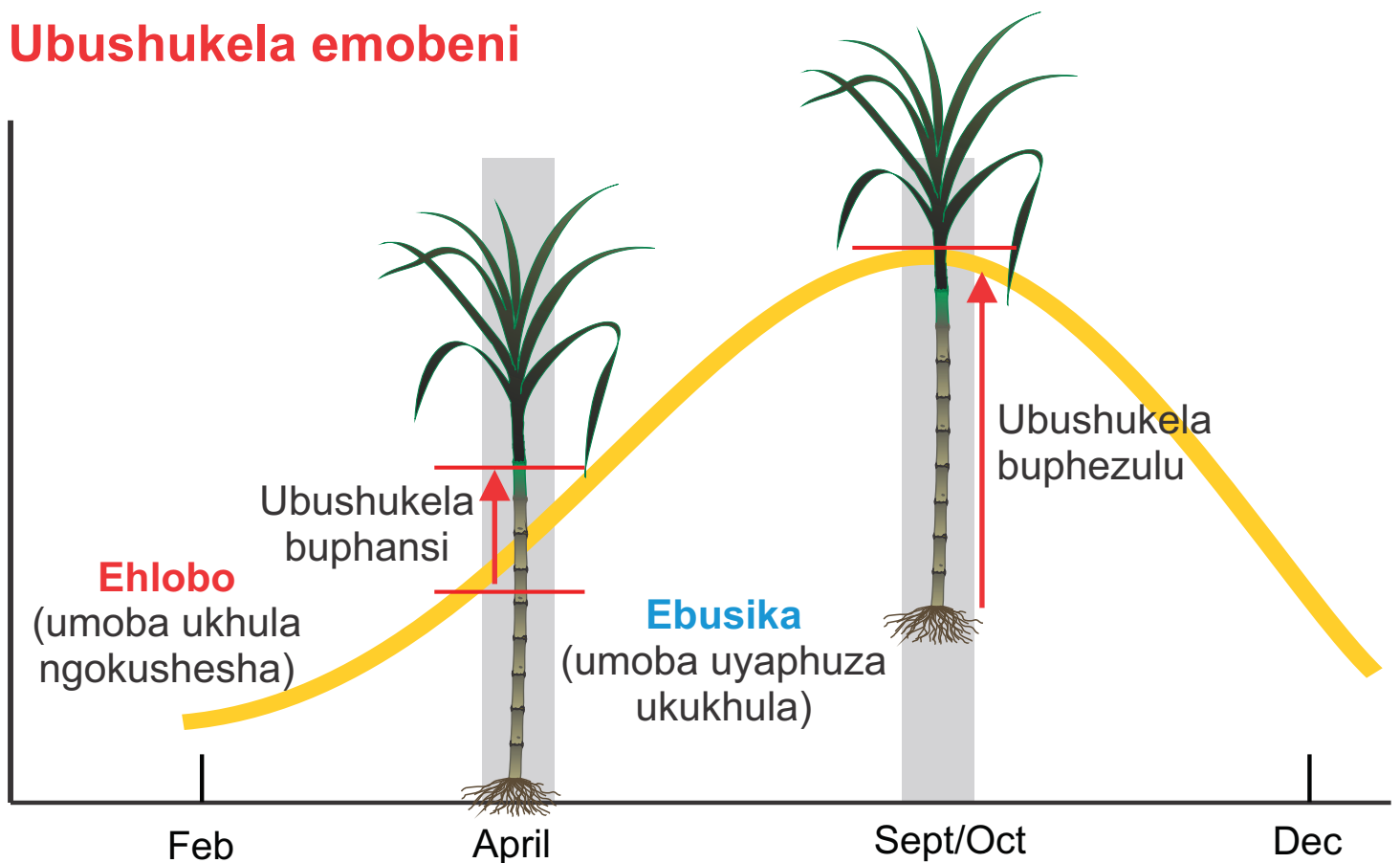
RELATIVE PAYMENT

- **Ehlobo** umoba ukhula ngokushesha okwenza ushukela ogcinwa isitshalo ube muncane.
- **Ebusika** umoba uyaphuza ukukhula okwenza ushukela ogcinwa isitshalo ube muningi.

Ngakhoke:-

- Uma isigayo sesivulwa ngoMbasas (April) ubushukela busuke buphansi emobeni.
- Kodwa ngoMandulo/Mfumfu (Sept/Oct) ubushukela busuke buphezulu emobeni.
- NgoZibandlela (Dec) uma sekubuye ihlobo ubushukela bomoba bubuye behle futhi.

Ubushukela emobeni



INKOKHELO NGOKWESIGAYO

RELATIVE PAYMENT

Lokhu kuchaza ukuthini?

- Umoba othunyelwe esigayweni uma sivulwa noma sesivalwa ngoZibandlela (Dec) usuke unobushukela obuncane.
- Umoba othunyelwe esigayweni ngoMandulo/Mfumfu (Sept/Oct) unobushukela obuphezulu.

Indlela isigayo esikhokhela ngayo

- Isigayo siyabahlawula abalimi abathumela umoba wabo ngesikhathi ubushukela buphansi (Dec).
- Isigayo siyabuyekeza inkokhelo kubalimi abathumela umoba ngesikhathi ubushukela buphezulu (Sept/Oct).

Imiphumela yalokhu

- Akekho umlimi olahlekelwayo.
- Akekho umlimi ozuza kungafanele.

Indlela isigayo esikhokhela ngayo yakhiwe ukuze inzuzo icazwe kahle kubalimi.

INKOKHELO NGOKWESIGAYO

RELATIVE PAYMENT

Yenziwa kanjani le ndlela?

**Indlela yokukhokhela abalimi
ngohlelo lwe-RV**

$$RV\% = \text{Isilinganiso sikashukela esifakwe abalimi ngesonto} - \text{isilinganiso sikashukela sesigayo} + \text{Isilinganiso sikashukela esijwayelekile ngaleyonkathi}$$

Ikomiti labalimi elihlanganise nabamele isigayo lithatha isinqumo sokuthi ubushukela bomoba ngaleso sikhathi kumele bubekwe kuliphi izinga.

INKOKHELO NGOKWESIGAYO

RELATIVE PAYMENT

Isibonelo:

$$RV\% = \text{Isilinganiso sikashukela esifakwe abalimi ngesonto} - \text{isilinganiso sikashukela sesigayo} + \text{Isilinganiso sikashukela esijwayelekile ngaleyonkathi}$$

Isilinganiso sikashukela esijwayelekile ngaleyonkathi = 11%
(Ikomiti labalimi elihlanganise nabamele isigayo elithatha lesinqumo)

Mbasa (kuqala inkathi yokuhlala)

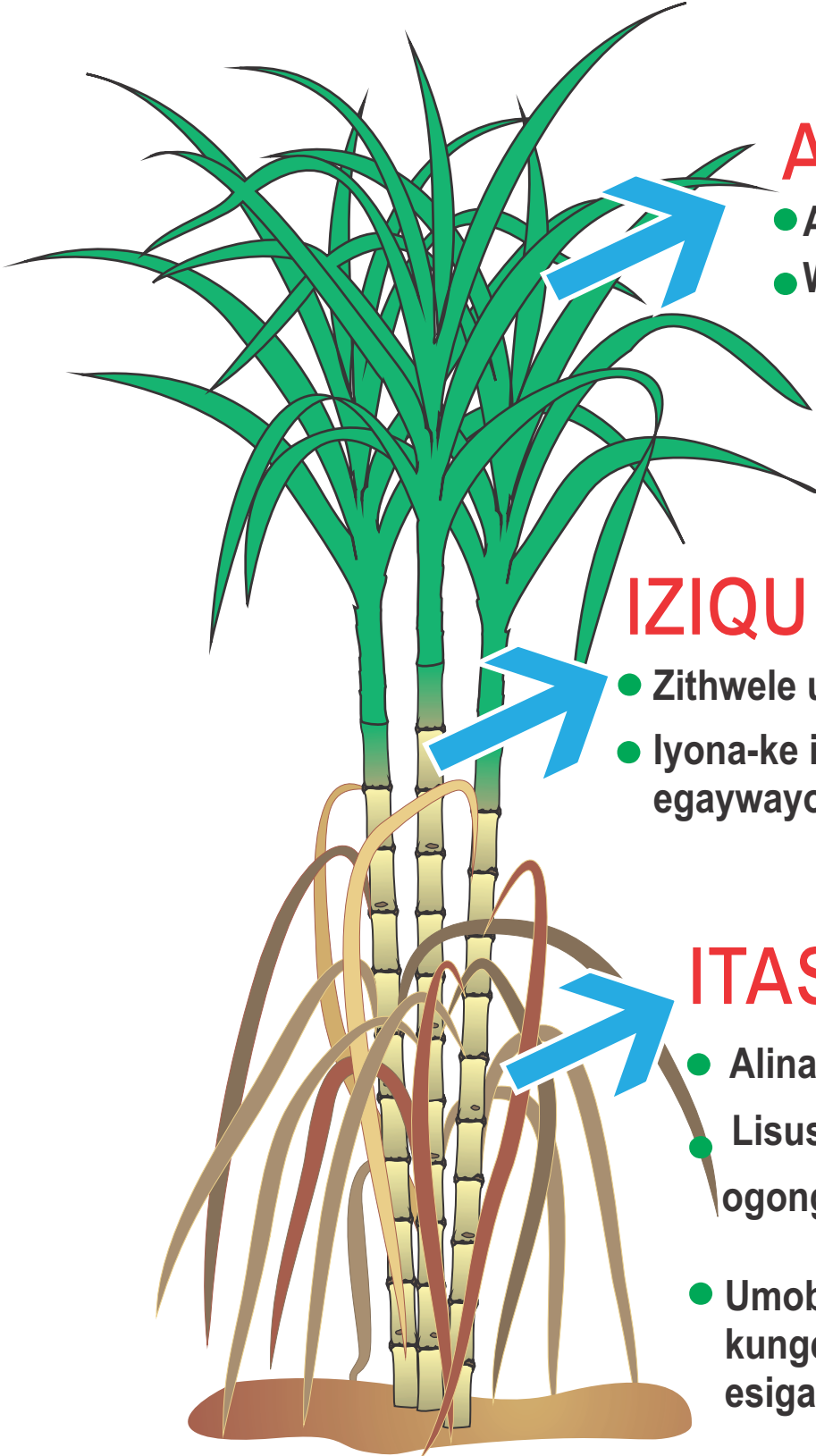
Iviki	Umlimi	Isigayo	Inkathi	RV%
1	9.1	- 8.6	+ 11.0	= 11.5
2	8.3	- 8.4	+ 11.0	= 10.9
3	10.1	- 9.2	+ 11.0	= 11.9
4	8.5	- 7.8	+ 11.0	= 11.7
Av	9.0	- 8.5	+ 11.0	= 11.5

Iyiphi ingxenye yomoba egaywayo?



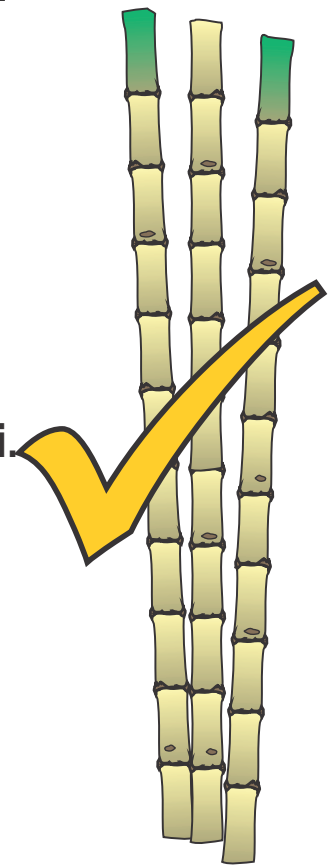
AMATHOPHISI

- Athwele ushukela omncane kabi.
- Washiye ensimini.



IZIQU

- Zithwele ushukela omningi.
- Iyona-ke ingxenye egaywayo.



ITASHI

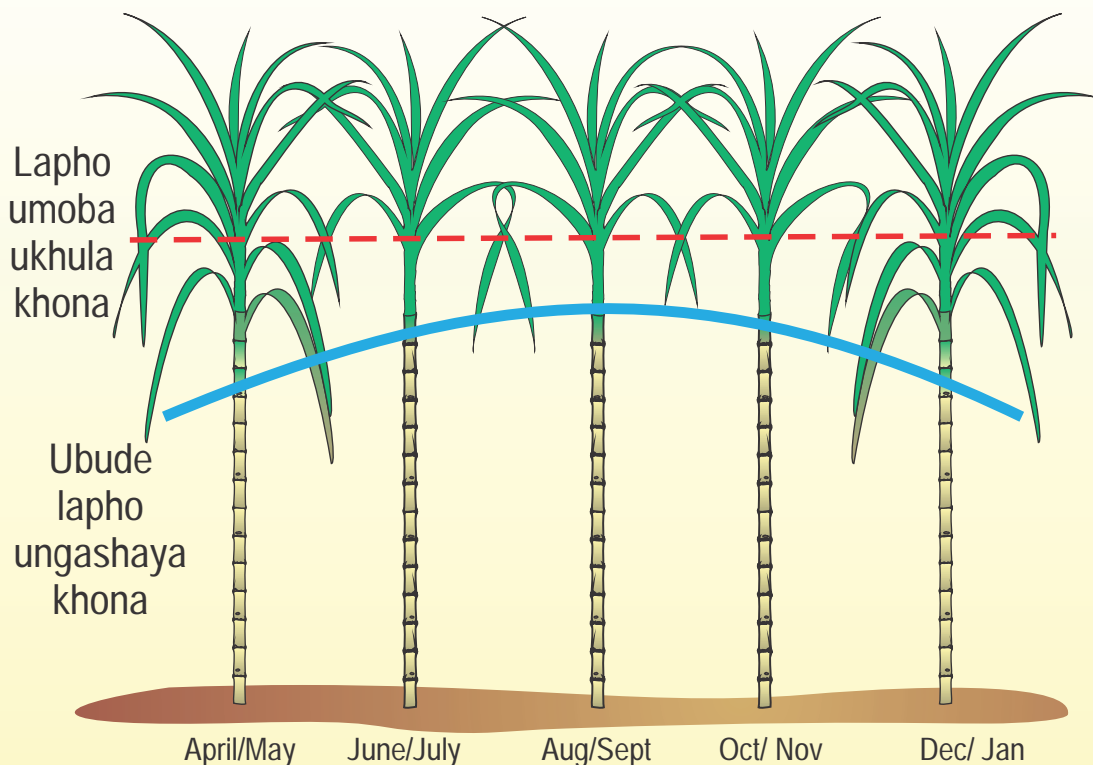
- Alinashukela
- Lisuse itashi ogongolweni.
- Umoba onetashi eliningi kungenzeka ungamukelwa esigayweni.



1. Ukugawulwa kwethophisi ngokuhluka kwezikhathi zonyaka

Umoba ongakavuthwa unethophisi elide elinamaqabunga amade aluhlaza

Umoba ovuthiwe unethophisi elincane elinamaqabunga amancane



Gawulela ngezansi umoba ngezikhathi:

- zokuvula kwesigayo noma sesizovalwa
- uma usemncane futhi ungakavuthwa
- uma isigayo ukude

2. Wuzwe lapho ukunambitheka kuphela khona

Lapho umoba ukhula khona

10 cm
Ihlamvu lesihlanu No.5

Kumuncu

Kumuncwana

Kuphakathi nendawa

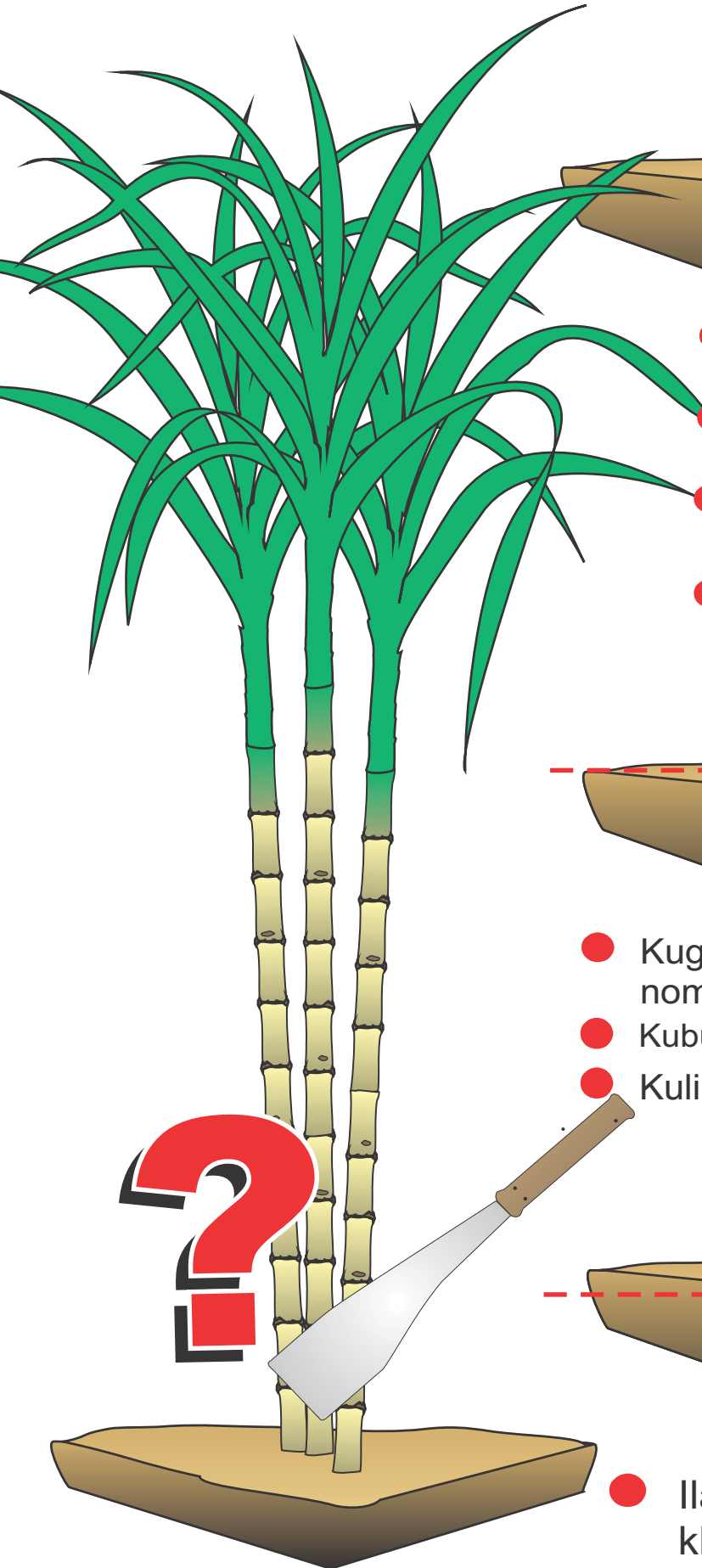
Kunobushukela obuncane

Kunobushukela

Susa ithophisi lapha

Ukuhlahla

UHLAHLA



X Kuphezulu kakhulu



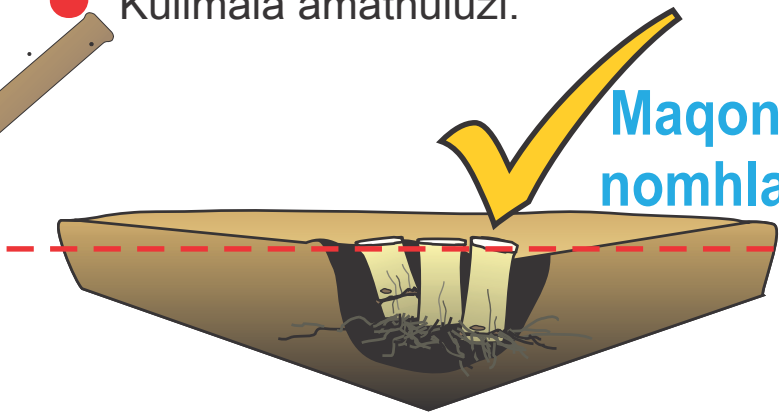
- Lokhu kubanga ukulahlekelwa inzuzo yoshukela.
- Umoba omusha oqhuma ngaphezu komhlabathi awukwazi ukukhula.
- Kubanga ukuthi umoba ungabi namahlumela amahle.
- Isinqamu esisele singaba isidleke sesihlava.

X Ngaphansi komhlabathi



- Kugcina sekuthunyelwe izimpande nomhlabathi esigayweni.
- Kubulala isinde lapho umoba ukhula khona.
- Kulimala amathuluzi.

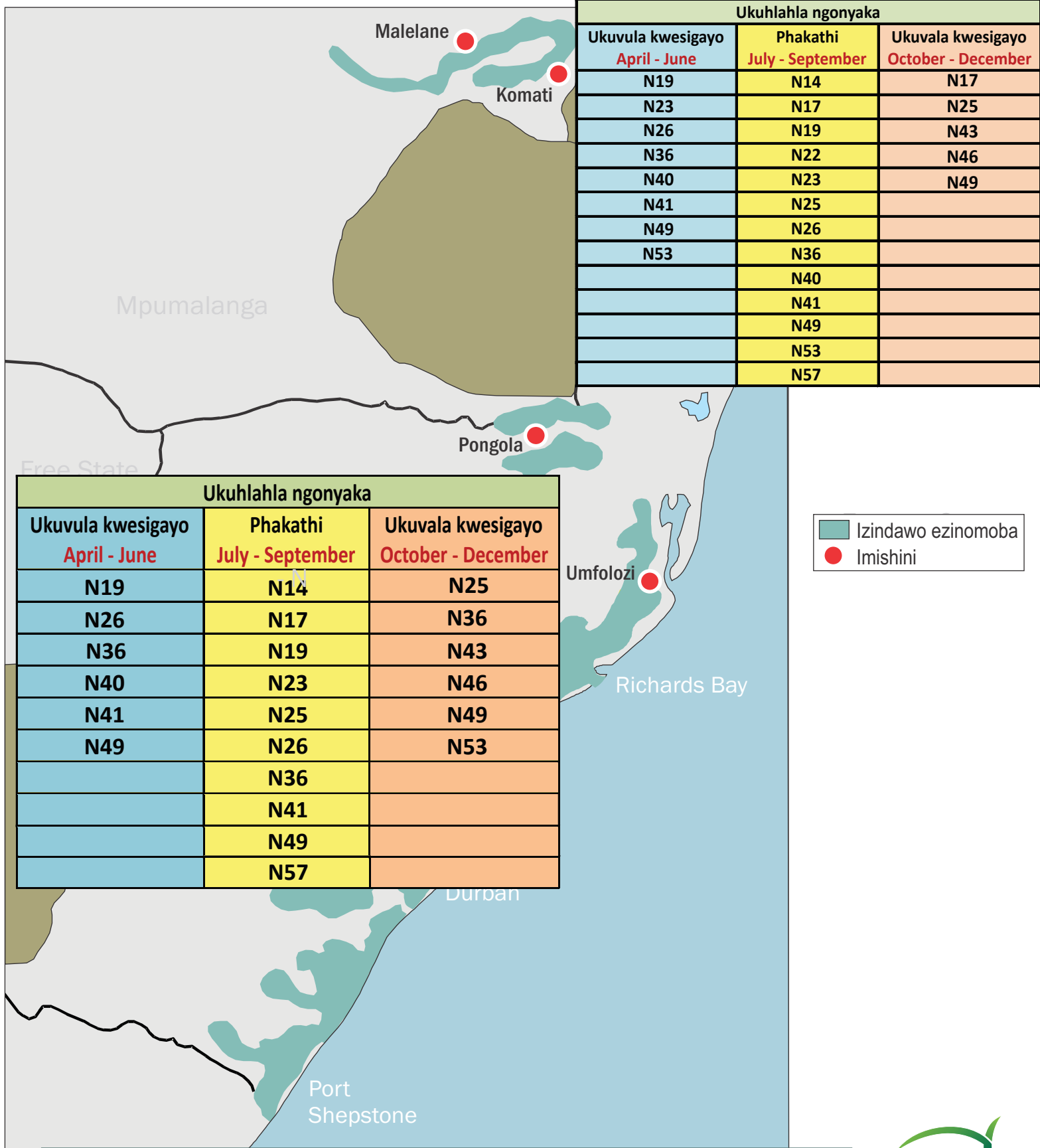
✓ Maqondana nomhlabathi



- Ilapho-ke kufanele ugawulele khona.

Isikhathi sokuhlaha

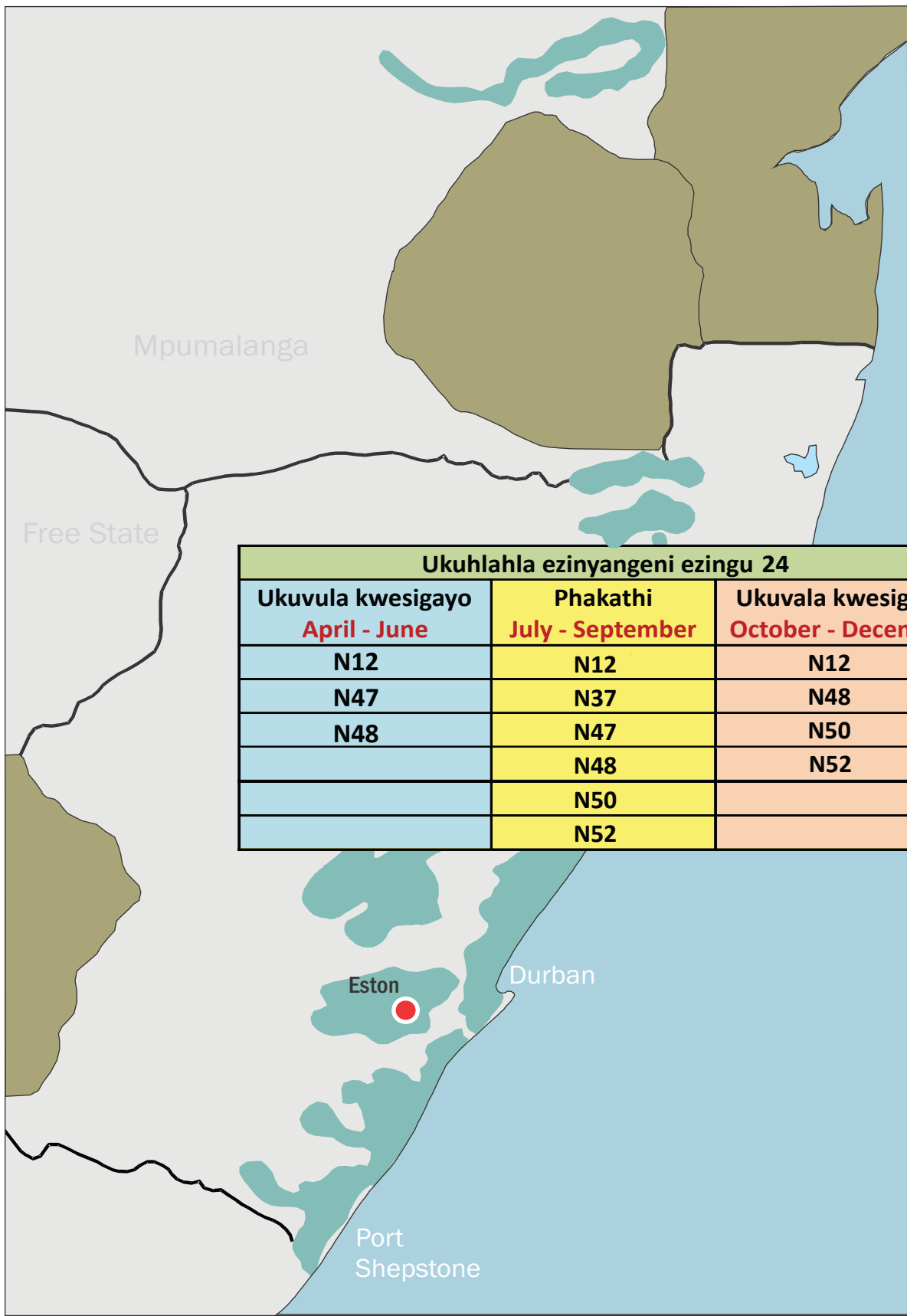
- Izinhlalo ezihlukene kufanele zihlahlwe ngezikhathi ezihlukene onyakeni.
- Hlela ukuhlaha izinhlobo zakho ngezikhathi esifanele.



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Isikhathi sokuhlahlAHLA

- Izinhlalo ezihlukene kufanele zihlahlwe ngezikhathi ezihlukene onyakeni.
- Hlela ukuhlahlAHLA izinhlalo zakho ngezikhathi esifanele.

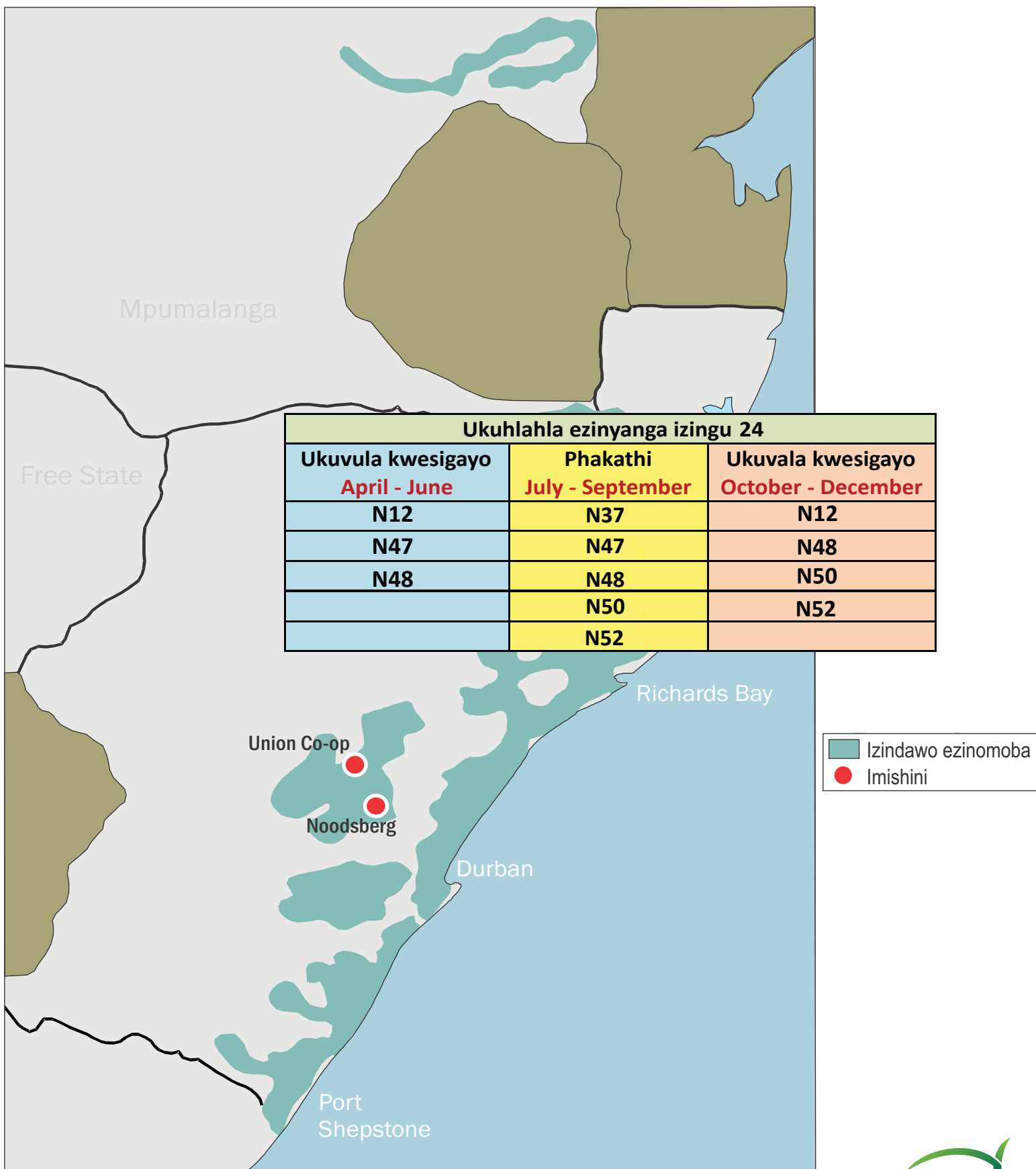


■ Izindawo ezinomoba
● Umshini

Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Isikhathi sokuhlahlA

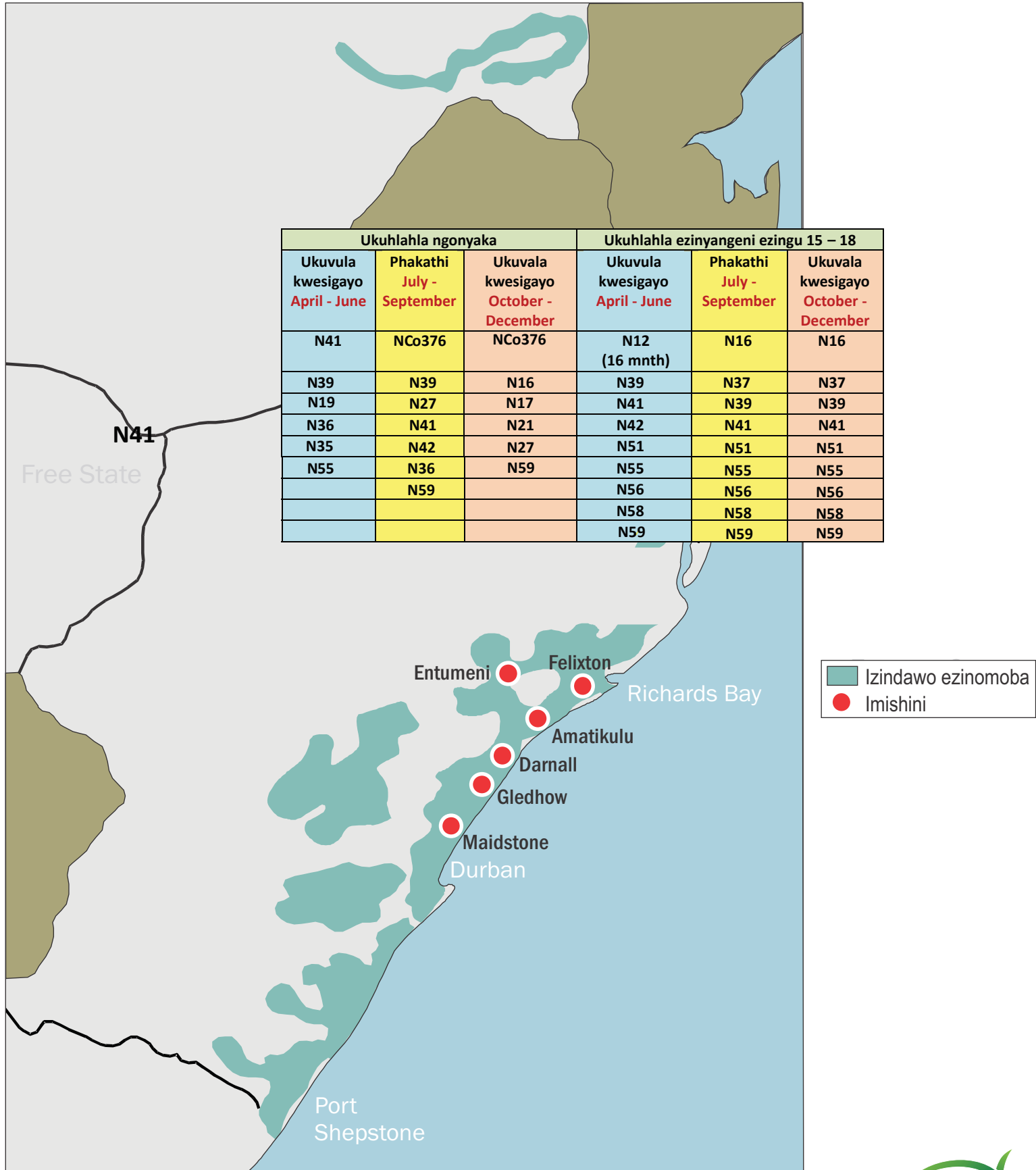
- Izinhlalo ezihlukene kufanele zihlahlwe ngezikhathi ezahlukeni onyakeni.
- Hlela ukuhlahlA izinhlobo zakho ngesikhathi esifanele.



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenywe yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokunisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Isikhathi sokuhlaha

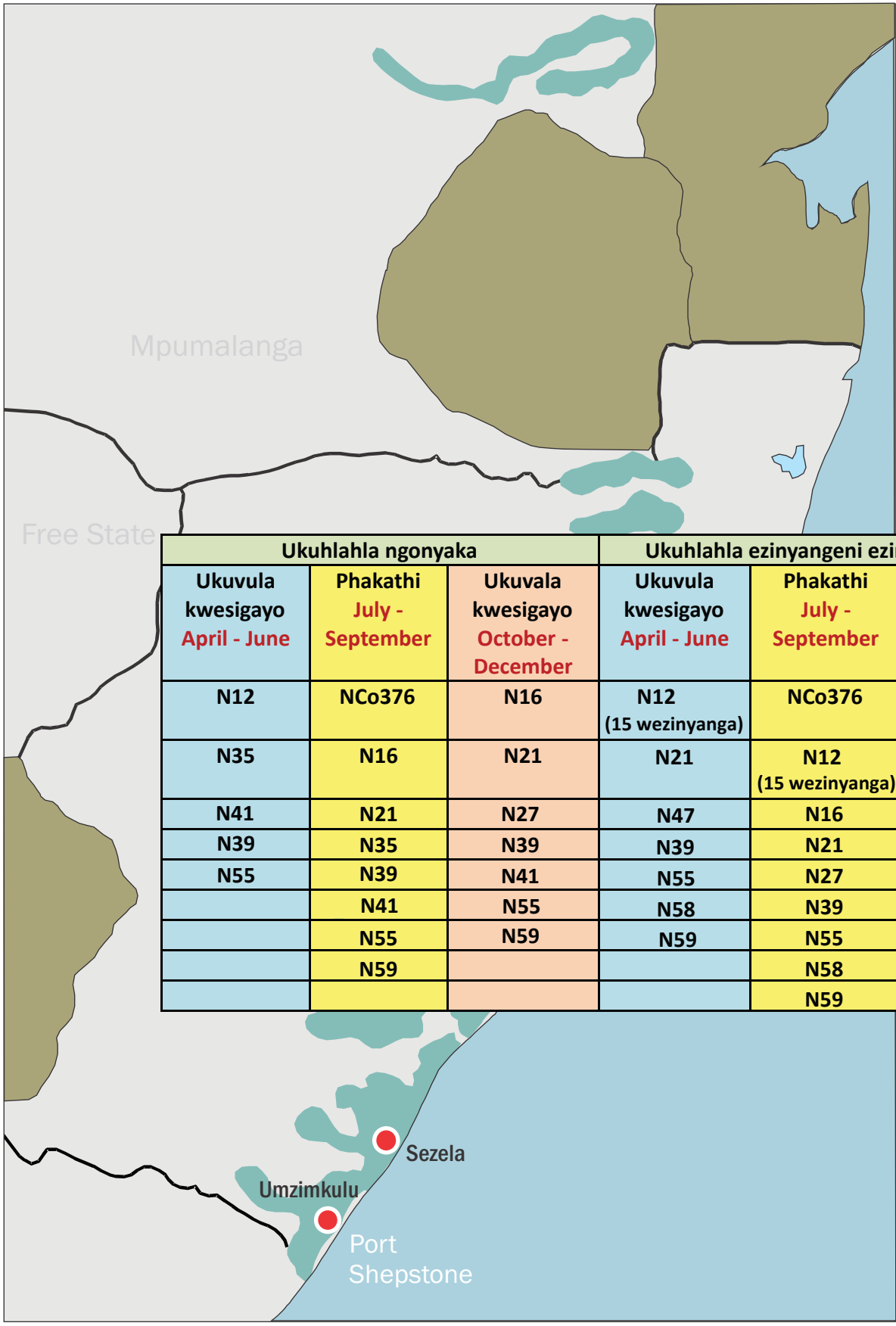
- Izinhlalo ezihlukene kufanele zihlahlwe ngezikhathi ezahlukeni onyakeni.
- Hlela ukuhlaha izinhlobo zakho ngezikhathi esifanele.



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nangenoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yiye yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gquguzela ukuthi zisetshenziswe.

Isikhathi sokuhlaha

- Izinhlalo ezihlukene kufanele zihlahlwe ngezikhathi ezahlukeni onyakeni.
- Hlela ukuhlaha izinhlobo zakho ngesikhathi esifanele.



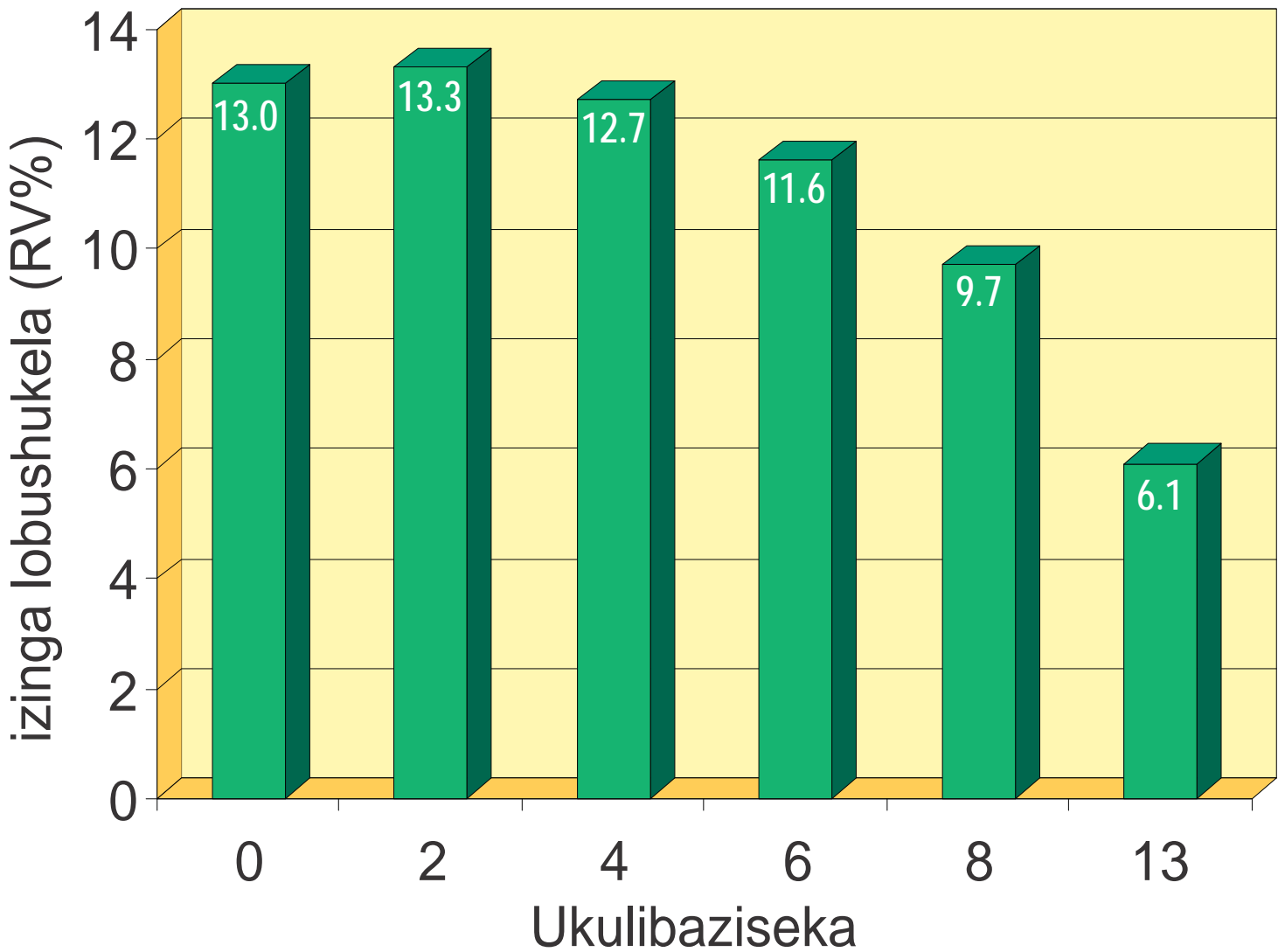
Ukuhlaha ngonyaka			Ukuhlaha ezinyangeni ezingu 15 – 18		
Ukuvula kwesigayo April - June	Phakathi July - September	Ukuvula kwesigayo October - December	Ukuvula kwesigayo April - June	Phakathi July - September	Ukuvula kwesigayo October - December
N12	NCo376	N16	N12 (15 wezinyanga)	NCo376	N39
N35	N16	N21	N21	N12 (15 wezinyanga)	N55
N41	N21	N27	N47	N16	N58
N39	N35	N39	N39	N21	N59
N55	N39	N41	N55	N27	
	N41	N55	N58	N39	
	N55	N59	N59	N55	
	N59			N58	
				N59	

■ Izindawo ezinomoba
● Imishini

Amalungelo okuqopha aqakethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nangenoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqakethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Ukulibaziseka komoba kusukela ushiswa uze ufike esigayweni

5



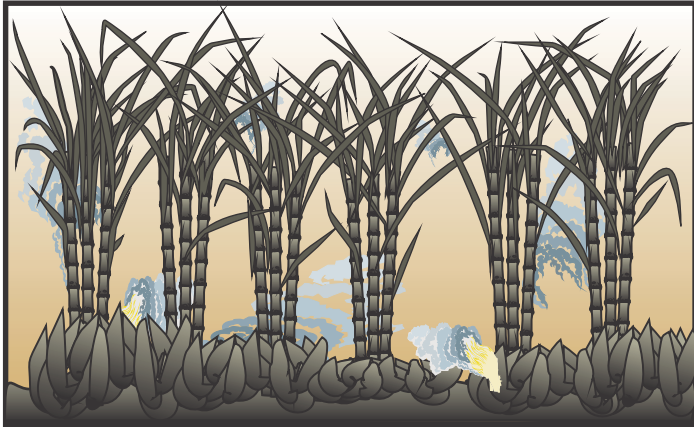
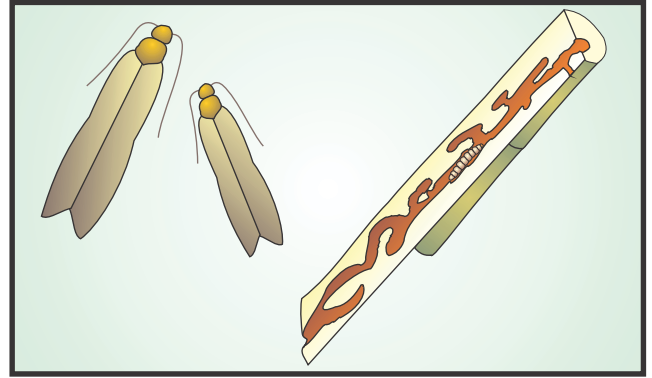
Ukulahlekelwa ushukela (RV) ngenxa yokulibaziseka komoba kusukela ushisiwe uze ufike esigayweni

Ukuvikela ukulahlekelwa ushukela (RV)

- Hambisa umoba esigayweni ngokushesha. Ushukela wehla ngokushesha uma kushisa.
- Hlahla umoba oshisiwe ngokushesha ungawuyeki umile.
- Shisa indawo encane.
- Thumela umoba ohlanzekile ongenanhlabathi namathophisi.

UMOBA ONESIHLAVA

- Uhlahle ngokushesha

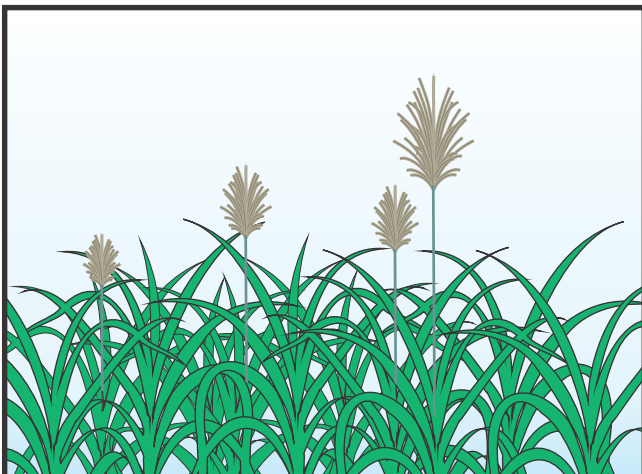
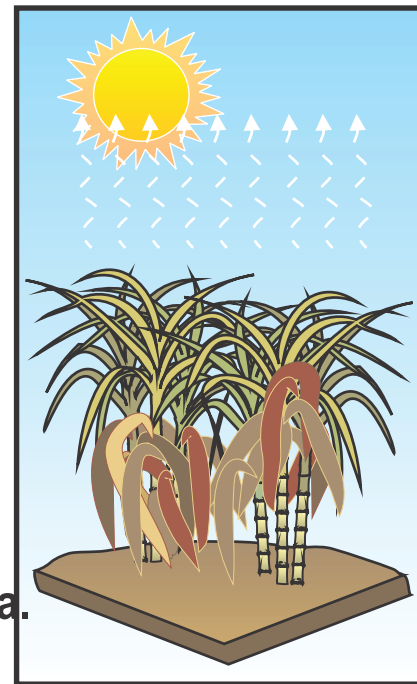


UMOBA OSHE NGENGOZI

- Kufanele ugawulwe ungashiywa umile.
- Uphuthumise esigayweni ngokushesha.
- Faka umanyolo bese ubulala nokhula.

UMOBA OKHAHLANYEZWE ISOMISO

- Umoba ongagayeka - Hlahla lawomasimu amabi kuqala ungawushiya umoba omubi kuze kube isizini elandelayo.
- Umoba ongeke ugayeke (ongenaso isihlava) - Uyeke umile. Faka isikhuthazakhaba uma kuqala izimvula ususe nokhula
- Umoba ongeke ugayeke (onesihlava) - Ushise, uwugawule. Faka isikhuthazi zingakafiki izimvula.



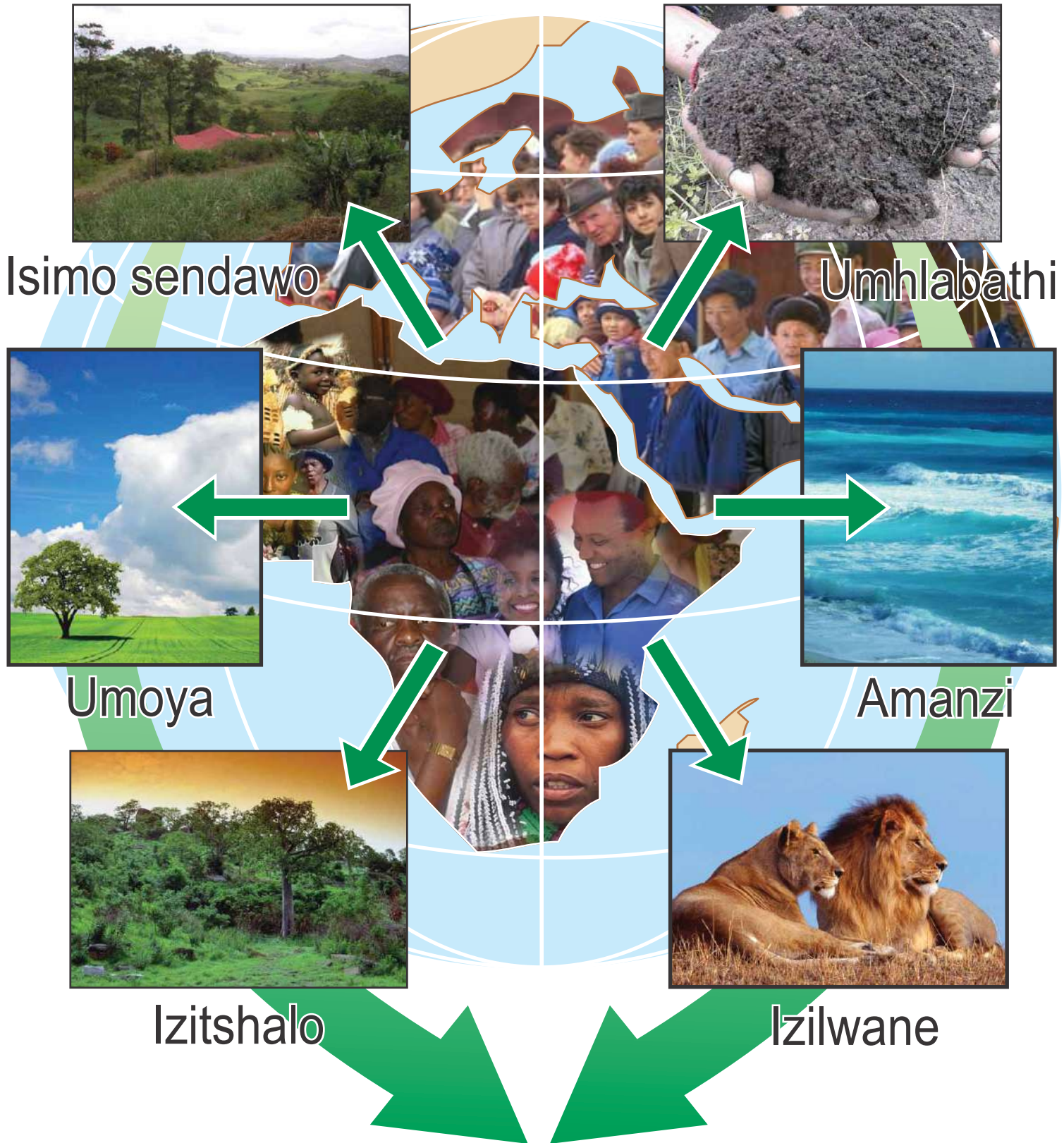
ONENTSHAKAZA

- Uhambise esigayweni ungakapheli uMandulo.
- Ungawuyeki kuze kube isizini elandelayo.
- Faka isikhuthazi.

Iyini imvelo?

2018

Ikhasi 1



Ingcebo Eyimvelo

Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqkethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

Ukunakekela ingcebo yethu yemvelo - Amanzi

Ikhasi 2

Siwasebenzisa kanjani amanzi futhi kwenza- kalani uma sesiqedile ukuwasebenzisa?



Ukunisela



Imboni



Ukunisela



Ukuphumula



Imifula, ulwandle namadamu



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

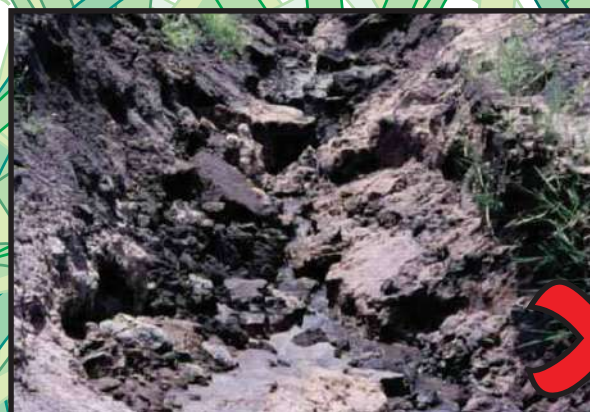
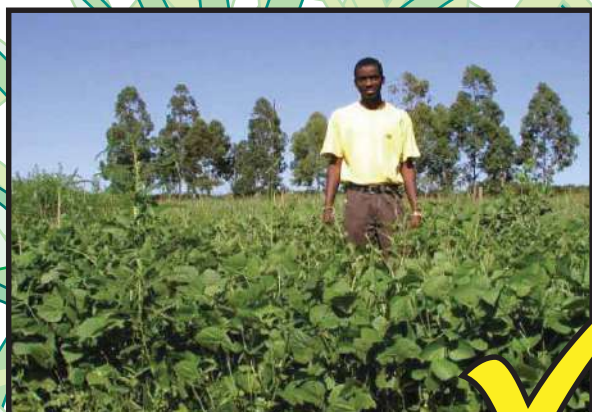
Ukunakekela ingcebo yethu yemvelo - Umhlabathi

Ikhasi 3

Ukuphathwa komhlabathi

Kuhle

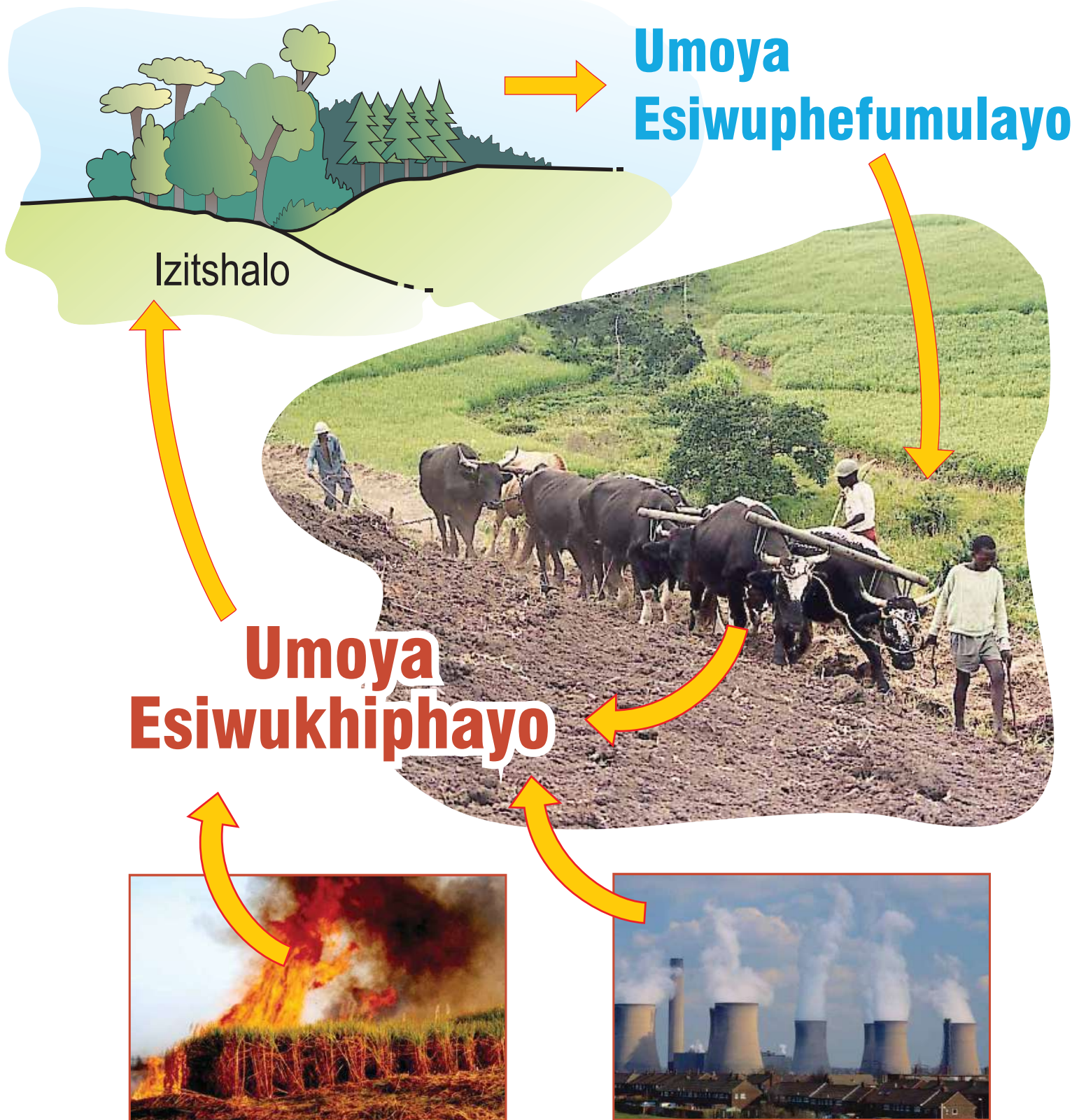
Kubi



Amalungelo okuqopha aqukethwe kulo mbhalo. A ikho ingxenye yalo msebenzi engaphinda yenziwe nangaroma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokugqinisekisa ubugotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathekwa zinyathelo ngokulabeka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulemshicilelo akungathathwa njengokuqinisekisa ngqunguzela ukuthi zisetshenziswe.

Ukunakekela ingcebo yethu yemvelo - Umoya

Ikhasi 4



Uma **UKUSHISA** umlilo kungeke kugwemeke!

Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Abantu nemvelo

Ikhasi 5



Isimo sendawo semvelo

- Izilwane zasendle
- Izitshalo zendabuko
- Ukugqagqana kwezindlu



Isimo sendawo esiguqulwayo

- ✗ Ukuphela kwezilwane zasendle
- ✗ Ukuphela kwezitshalo zendabuko
- Ukwanda kwezindlu
- Ukuqala kokulima
- Ingqalasizinda



Isimo sendawo esesiguqukile

- ✗ Ukungabibikho kwezilwane zasendle
- ✗ Ukungabibikho kwezitshalo zendabuko
- Ukuminyana kwezindlu
- Ukwanda kwamadolobha
- Ukungcoliseka komoya
- Ukwakheka kwengqalasizinda

Ukunakekela ingcebo yethu yemvelo - Imithetho emisiweyo

Ikhasi 6

UMTHETHOSISEKELO



Izitshalo



Umoya



Amanzi



Umhlabathi



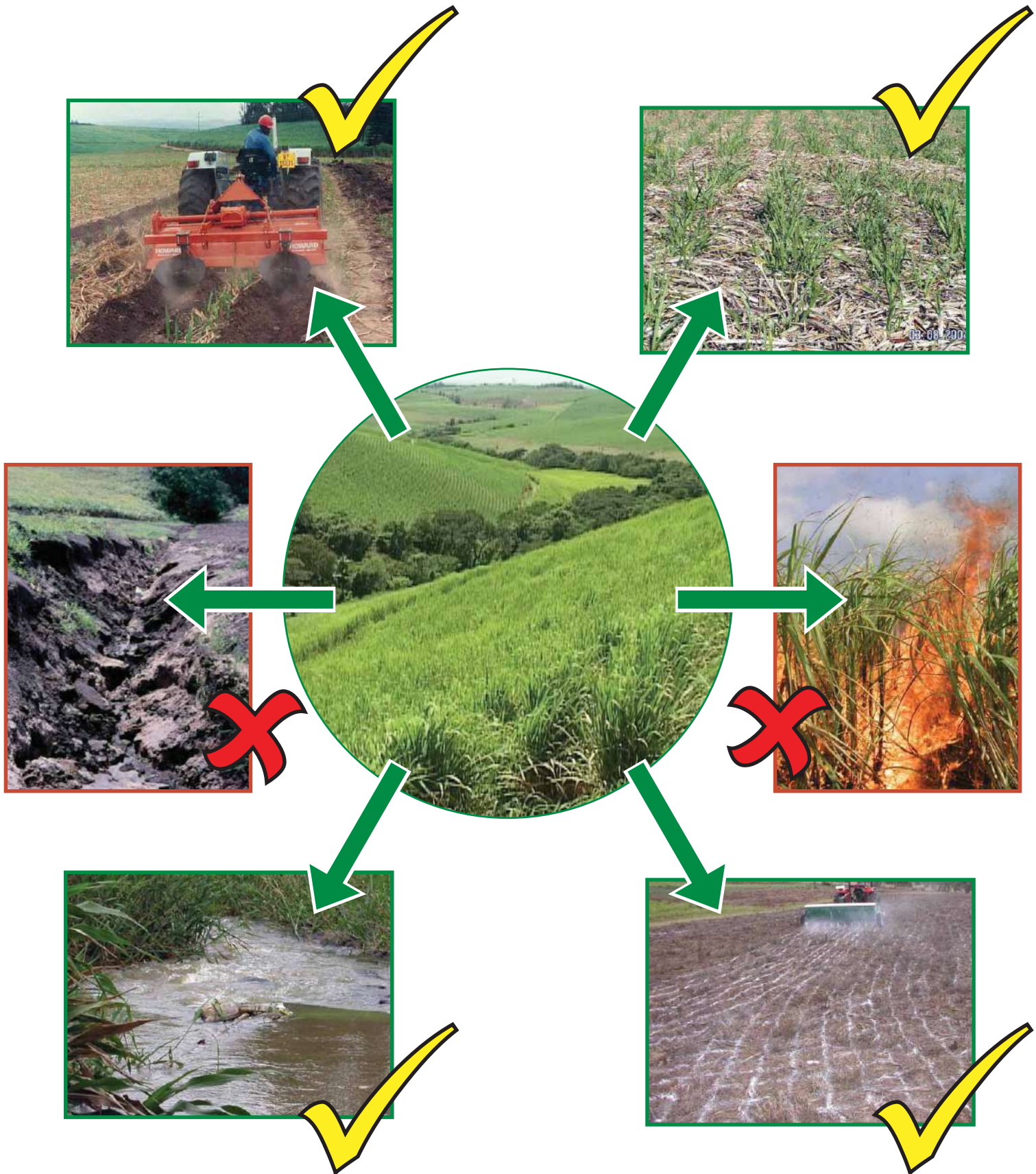
Izilwane

IMITHETHO EMISIWEYO YEZEMVELO

- National Forest Act
- The National Water Act
- Occupational Health and Safety Act
- The Conservation of Agricultural Resources Act
- The National Environmental Management Act (NEMA)

Kunamuphi umthelela ukulima kwezemvelo?

Ikhasi 7



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isikhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukathathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gququzela ukuthi zisetshenziswe.

Ukunakekela ingcebo yethu yemvelo - Izitshalo nezilwane

Ikhasi 8

Izitshalo nezilwane eziwusizo ekulimeni umoba

Ezasendle



Izitshalo



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqokethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Kungani kufanele sinakekele ingcebo yemvelo?

Ikhasi 9

Ukuze sithole ukudla, amanzi, uphahla kanye nezolimo ezisimeme



Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwanningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqkethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.

Ukunakekela ingcebo yethu yemvelo - Ukuxhumana

Page 10

Kubalulekile ukuxhumana.

Kungani sidinga ukuxhumana?

Ukunyusa izinga lokuzwana ukuze sihlanganyele ekutholeni izisombululo eziphathelele nokuphathwa kwemvelo.

Ubani esixhumana naye?

Yonke imiphakathi kwezolimo

- Abalimi
- Abeluleki bezolimo
- Osonkontileka
- Izinhlango ezilekelelayo
- Umphakathi wendawo
- Abasebenzi basemapulazi kanye nemindeni yabo





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