

# PULA IMVUILA

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EYEDWARHA  
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## Ingqiyo NGENTE- NGISO YOMBONA

Imazini yakwa Grain SA  
yophuhliso Iwabavelisi

Bala moteng:



**K**two onke amacandelo okulima amaxabiso entengiso asoloko egukuka ngenxa yembandela eliqela eyahluka-hlukileyo. Njengabalimi luxanduva lwethu ukuba nengqiyo ewahambela phambili amaxabiso eemveliso zethu futhi siphinde sisoloko sighthuba ngokulandela ekhondweni lemigaqo efanelekileyo.

Iliqela imithombo yeenkukacha efumanekayo esinokuyilandela xa sisenza oku, kodwa kufuneka siqaphele njengoko eminye inokuthenjwa phucuki-

leyo kuneminye. Yiba nobuchule bokwahlukanisa izinto. Kweli nqaku siza kuqwalasela imibandela eyahluka-hlukileyo echaphazela amaxabiso okuthengisa nendlela yokwazi ukuba ingaba sifumana ixabiso elichanekileyo na ngeemveliso zethu.

Ixabiso lentengiso yombona lelinye lalawo angenazinzo phakathi kwavo onke amacandelo eenkozo futhi ngenxa yokuba uyenye yeemveliso zokutya eziphambili eMzantsi Afrika kwaye oko kuchaphazela inxalenye enkulu yabalimi belizwe lethu.

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## UMAKHULU UJANE UTHI...

**K**utshanje bendicinga ngokuthi ziyintoni na iimpawu zomntu olungileyo ziyintoni ezommi olungileyo waseMzantsi Afrika?

Ndimana ukuzibuza qho ukuba – yintoni injongo yobomi bam? Yintoni eyenza ubomi bam bube nentsingiselo? Njengomntu, ndikholelwu ekubeni ndisemhlaben ukuze ndibe negalelo elinoncedo ebomini babanye abantu. Kufuneka ndithembeke, ndinyaniseke, ndicingele abanye, ndibe nenkathalo kwaye ndisebenze nzima. Ndifanele ukusebenza ukuze ndifumane imali engenayo ukuze ndikwazi ukondla nokunxiba usapho lwam; ndifundise abantwana bam ndibalungiselele ukuba bajongane ne-hlabathi abaza kuhlala kulo (ndikwenze oko kangangoko ndinakho kuba andilazi ihlabathi abaza kuhila kulo); ndilungiselele umhlaplaphantsi wam; kodwa ngaphezu kwako konke ndibe negalelo elincinane eluntwini naseli-zweni lethu.

Njengabalimi, akukho mntu simsebenzelayo –si-yakwazi ukusebenzisa umhlabia neminye imithombo yendalo ukuze siziphilise. Nangona kunjalo, umhlabia awenzi msebenzi – siti esifanele ukwenza umsebenzi emhlabeni ukuze sivelise izityalo esinokuzithengisa. Nangona kunjalo, sikhetha ukungenisa imali, sifanele ukuba nemali engenayo ukuze siphile.

Yintoni enokundenza ndikufanele ukuzibiza ngokuba ndingummi olungileyo waseMzantsi Afrika? Ilizwe linemithetho esifanele ukuyithobel. Injongo yemithetho kukuqinisekisa ukuba uluntu lwethu lusebenza kakuhle. Ndifanele ukuhlawula irhafu ukuze ndibe negalelo elizweni. EMzantsi Afrika ngoku kukho abantu abangaphezu kwezigidi ezili-17 abafumana uncedo lobonelelo-mali kurhulumente. Ivela phi le mal? Ivela kurhulumente kwi-irhafu ezihlawulwa ngabantu. Abalimi nabo bahlawula iirhafu esingenalwazi lwazo – irhafu yokuthenga impahla zamalungiselelo okulima kumzwe angaphandle, irhafu yamafutha okubaselisa esiwasebenzisayo, kune ne-VAT yeemveliso zamalungiselelo okulima zethu. Ukuba akuyihlawuli irhafu, urhulumente akasayi kuba nemali lize ilizwe lethu lingakwazi kusebenza.

Ingaba ukuba ngumntu olungileyo, okanye umlimi olungileyo, okanye ummi olungileyo kunento yokwenza nebala lam? Hayi, enyanisweni akunjalo. Sonke singabemi baseMzantsi Afrika kwaye sifanele ukusebenzisana ukuze kubekho ikamva eliphucukileyo lethu sonke. Ndiyawathanda amazwi kaDalai Lama: **Ukuba ngenene besinokujongana njengoobhutinoosisi bethu, bekungasayi kubakho calulo, ukuthathana nokuxhaphazana.** Ngoko ke, kubalule-kile ukukhuthaza ulovo lobunye bobuntu, ukuthi xa singabantu siyafana sonke.

## Ingqiyo ngentengiso yombona

### Siwulimela ntoni umbona?

Inzozo, imozulu nokutya. Nantsi imibandela emithathu ephambili eyalatha ukuqhuba kokulinywa kwestiyalo sombona. Sifanele ukulima isityalo esifanelekileyo ngokoqoqosh. Ukuba akunjalo oko kuthetha ukuba siqhuba ishishini elingenazinzo. Kwakhona sifanele ukulima izityalo ezifanele iimeko zemozulu yethu ethile. Okokuggibela, thina balimi sinoxanduva olukhulu lokunkelia ngokutya kubantu besizwe sethu. Sifanele ukuba ngamachule okulungelelanisa le mibandela mithathu ngendlela efanelekileyo malunga noshishino nekwaziyo ukuba ngumsebenzi osnika inzozo.

### Imibandela echaphazela iintengiso zombona eMzantsi Afrika

Umbandela ongowna uphambili phezu kwayo yonke eminye eyalatha ixabiso lombona kwixesha ngalinye lokulima **ngowokuthengisa nokuthenga**. Xa kuthethwa gabalala i 75% yombona olinhya ngexesha lokulima isetyenziswa kummandla wokuthengisa wethu walapha. Kusenokuba ziimveliso ezenziwe ngombona ezenzelwe abantu nezenzelwe izondlo zezihwanya. Ngendlela elula; xa sifumene unyaka omhle waze umbona wethu waba nesivuno esihle, ixabiso lombona liyehla njengoko umminzi othengiswayo. Kwiminyaka yembalela engenakutya kakuhle xa izivuno ziphantsi ixabiso liya kunyuka ngenxa yokuanya kwentengo efunekayo.

**Ifuthe lentengiso yehlabathi** nalo linendima kumaxabiso esiwafumanayo ombona wethu. Kwiminyaka apho singenambona waneleyo wokuthengisa elizweni sidinga ukuhlangabeza intsilelo ngokuthenga umbona emazweni angaphandle. Ngamanyi amaxesha oku kunokuba nesipumo esithoba umgangatho kummandla wethu wentengiso yombona ukuze ixabiso leli lizwe lime ndawonye.

Ixabiso lombona lelizwe lethu likwachatsazelwa yintengiso yesityalo sethu kumazwe angaphandle. Kwiminyaka apho besinombona oggithisileyo kuyenze ka ukuza kubekho amazwe anentsilelo ebangela ukuba abe ngabathengi bombona wethu. Oku kuyakwazi ukugcina amaxabiso ethi emi ndawonye. Nangona kunjalo, imithetho eliqela yorhwebo iwlhlabathi eyinxalenyenokuthengisa nokuthenga emazweni angaphandle afana neerhafu kune nemiqathango yempilo. Sisihloko esinobugocigoci esi: asizi kuxoxa ngaso kweli nqaku.

Ixabiso lamafutha okubaselisa nothutho zinendima enkulua kwixabiso lethu lombona



njengoko kunjalo kwiimveliso zethu ezininzi. Umbona ulinywa kuzo zonke iindawo zeli li-zwe kwaye kufuneka uthuthelwe kwiindawo zokuwlundoloza nakummandla wokuwuthengisa. Ngoko ke, xa amafutha okubaselisa enyukile nexabiso lombona esiwulimayo liyehla njengoko umthengi ekubalela oku kwi-indleko zakhe. Umbona unetyathanga elide lamaxabiso alandelwayo ukusuka efama ukuya kumthengi wemveliso kanti inyathelo ngalinye lifuna amafutha okubaselisa.

### Ingaba ixabiso esilifumanayo liyahambelana nelo likummandla wentengiso?

Ngoku siyayiqonda imithetho-siseko embalawa yokuqala eyalatha ixabiso lombona, kodwa siya kulazi njani ixabiso esilifumanayo ukuba liyahambelana na nelo likummandla wentengiso?

Kulapha kanye apho wena njengomlimi ufanele ukuyazi into eyenzeka kummandla wentengiso. Zicgine unowlazi ngokufunda nokumamela abo banowlazi ngesi sihloko. Oku kubaluleke kakhulu njengoko usenokufuna ukwenza isicwangciso-cebo ukuze we-nze isicwangciso sokuba uza kusithengisa nini futhi njani isityalo sakho ukuze uzame ukufumana elona xabiso lifanelekileyo.



Unakho nokucinga ngokugcina umbona wakho kwithuba lexesha elithile lide liphinde linyuke ixabiso kwakhona.

Kukho imithombo yeenkcukacha ethembekileyo epapasha amaxabiso ombona ngazo zonke iitsuku njengeGrain SA neSafex. Unakho ukucela ukuthunyelwa umyalezo ngefowuni yonke imihla ukuze uhlale unamaxabiso angoku. limbumba zenu zentsebenziswano zalapha ezifana neAfri, iSuidwes, iNWK, iSenwes nezinye ziya kuba ngumthombo othembekileyo weenkckukacha apho unokufumanisa khona ukuba lithini na ixabiso, kune neziqhelo ezinokubakho kwixesha elizayo.

Eyona nto ibaluleke kakhulu ofanele ukuyenza **Iuphando** phambi kokwamkela naliphi ixabiso elibekiweyo ngemveliso yakho ngenxa yokuba ngelishwa kukho abo bayo kusoloko bezama ukuxhaphaza abangenalwazi. Nangona kunjalo, sukulibalu ukuba kusoloko kukho iimali ezithile ezixhuzulwayo ezisikweni kolu shishino. Kuse-nokutsalelwu ubunzima bomthwalo wombona omdaka onentsalela eninzi kuwo. Usenokohlwaye-lwa umgangatho ophantsi wombona. lindawo ezi-ninzi zokuthengisa umbona zisebenza ngenkqubo esesikweni yokuhlela. Ngamanye amaxesha unokuhlwaliswa imali encinane yokuqwalaselwa

xa usisa isityalo sakho kwindawo yentengiso. La maxabiso asisiqhelo ngoko ke awafanelanga kukuphazamisa ekuthengiseni. Ngaphezu kwako konke hlala unolwazi kwaye uzigcine unolwazi ngokwenzekayo kolu shishino.

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## Pula Imvula's Quote of the Month

*Leadership is practiced not so much in words as in attitude and in actions.*

~ Harold S. Geneen



# Ifuthe LEMIBUNGU EYONAKALISA ezi linyiweyo

**I**mibungu ezizidleleleli zeziyalo (iiPPN) yimibungu engqkuva emincinanana ehla-sela iingcambu zeziyalo nezinye iindawo eziphantsi komhlaba, kanti nezhkhondo ngokunjalo namaggabi. Iyinxalenye yezona zonakalisi-zityalo zixhaphakileyo eneentlobo ezingapehu kwezingama-4 000 zemibungu engqkuva ezizidleleleli zeziyalo exelwe ehlabathini ngokubanzi.

EMzantsi Afrika, kuxelwe iintlobo ezimalunga nama-455. Nangona kunjalo, *i-Meloidogyne* spp. (imibungu engqkuva eziqhinelu ezingcanjini) ise-sona sonakalisi-zityalo sibaluleke kakhulu esisidle-leleli sezityalo ezininzi kulandele *i-Pratylenchus* spp. (imibungu engqkuva yemisikeko). Nangona iinkukacha ngefuthe layo kuqoqoshu lisenganeno kweliqkaniselayo, iyonke isisithintelo sokuqinise-kiswa kobukho bokutya okwaneleyo kweli lizwenakumbi malunga nezityalo ezilinye kwiindawo zokulimela ukuziphilisa.

Kwelinye icala ukhula, alukhuphisani nezityalo kuphela ngesithuba, ngokukhanya nangezondlo (**Ifoto 1**), kodwa lunakho ukuba ngabamkeli be-zinye izonakalisi-zityalo, ngoko ke, lubangela iila-hlekoh zezivuno kwimeko yoqoqoshu ekulinyweni kweziyalo.

Izityalo nomgangatho wazo okanye iilahlekoh zezivuno zezivuno ngenxa yobudleleleli bemibungu engqkuva kwizityalo zikhola ukuba nobuzaza ngakumbi phakathi kwamaqela oluntu alimela ukuziphilisa kunasemazweni akudidi lokuqala. Oku kwenziwa ngakumbi lulwazi olungabumbenanga

ngokunjalo nonqongophalo lweziseko zezbonelelo noncedo lwemali kwicandelo lezolimo lokulimela ukuziphilisa.

Umonakalo obangelwa yimibungu engqkuva ezizidleleleli zeziyalo ukhola ukuqhuba ungaqa-pheleki okanye kubonakale ngathi ubangelwa yeminye imibandela edodobalala ukukhula, ngenxa yonqongophalo okanye ukungabikho kweempawu nangenxa yokungabi nalwazi kwabaliimi. Ingxaki yemibungu engqkuva iphindra yenzi-we nzulu kwicandelo lezolimo lophuhliso ngenxa yokunganeli komhlaba ofumanekayo wokulinwywa kweziyalo ezikukutya ngokunjalo nokusetyenzi-swa kwemihlanganisela eyivelayo IPPN ngokwe-siqhelo kwiinkqubo zokuditywa kweziyalo ezininzi nakwezongenelelo lwezityalo (**Ifoto 2a - b**).

## Amanyathelo olawulow

Kubalulekile ukuchonga izicwangciso-cebo zolawulo lwezonakalisi zeziyalo ezisebenzayo ezinongqi-

nelwano nezimanyanisiweyo eziza kuba lulawulo oluqukaniselweyo lokuhlangabeza ukulwa ukhula nemibungu engqkuva ngaxeshanye. Ngokubanzi ukhula lunciphisa isakhono sokujikelezisa kweziyalo okujoliswe kulawulo lweimbungu engqkuva.

Ngaphezu koko, olunye ukhula olungumthombo wesixhaso sokutya luyagcinwa ngabalimi, ngenjongo yokuba lube ngathi nalo lulinyiwe kuba lusetyenzi-swa nesityalo esikukutya kwemihla ngemihla. Oku kukhokelela kulgakkhiwo lwanamanani ePPN ukuze ekuggibeleni konakaliswe esona sityalo singundoqo ngelixa abalimi bengayiqondi le meko.

Izicwangciso-cebo zolawulo zinokuquka umba omnye okanye umdibaniso wemiba elandelayo:

- Ukitshatalaliswa kokhula kuselithuba kwiindawo ezinokutya kubalulekile ukuze kunthintelwe ukwanda kwamanani ePPN, njengoko ukhula lungabamkeli kwaye lune-nkxaso kupuhhliso nakulwandiso lwezonakalisi zeziyalo ezi lolo hlobo.



*Umzekelo weenkqubo ezi phinda-phindiweyo okanye zongenelelo phakathi kweenkqubo zeziyalo ezininzi okanye zongenelelo zabalimi abalimela ukuziphilisa.*



*Ukhula oluphakathi kombona entsimini, nolunokubangela ukwanda kwemibungu engqkuva ezizidleleleli zeziyalo.*



### IIMPAWU EZINGAPHEZU KOMHLABA EZINXULUMENE NEMIBUNGU ENGQUKUVA EZIZIDLELELELI KWIZITYALO



Izibhaxu nokunqaphela entsimini yombona ngenxa yemibungu engqukuva ezizidleleleli zezityalo.



Ukujika kwebala lamaggabi nokunqaphela kwemifuno okwenziwa yimibungu engqukuva ezizidleleleli zezityalo.

### IIMPAWU EZINGAPHANTSİ KOMHLABA EZINXULUMENE NEMIBUNGU ENGQUKUVA EZIZIDLELELELI KWIZITYALO



Amaghubu eminqatheni, kwiitapile nasezingcanjini zeHibiscus spp. ngenxa yemibungu engqukuva eziqhinelu ezingcanjini.

- Ukugalelwa kwezinto ebeziphila:
  - Kunceda ngokucinakala kokufuma komhlaba kuhinde kongeze kubukho bezondlo zezityalo.
  - Kwandisa ukufunxeka kwamanzi ne-zondlo zizityalo ukuze zimelane nohlaselo lwemibungu engqukuva.
  - Ukuftakela kwemigquba, imithana evundileyo neekhomposi nako kwandisa inqanaba lezidalwanana ezssemhlabeni nezikholela kubukho bezinye izidilwanana ezingabonakali ngeliso kodwa

eziluncedo ngokuba zitya zonke ezinye izidalwanana ezssemhlabeni, kuquka nemibungu engqukuva engezo zidleleleli. Nangona kunjalo, kubalulekile ukuqinisekisa ukuba ikhomposi esetyenzisiweyo mayingauki iingcambu/amagaqa aqhekeke ngokungaphelelanga nasuleleki yiPPN okanye anosulelo Iwezinye izifo ezipumaneka emhlabeni. Uphando Iwexesha elidlulileyo lubonise ukuba iintlobo zonyango lomgquba owonakeleyo wasebuhlanti zinciphise imibungu engqukuva

ezibhijela ezingcanjini phakathi kwe 41% ne 71% kwiimvavanyo zeetumato na-phakathi kwe 49% ne 99% kwiimvavanyo zombona kwiindawo ezingenamithombo yoncedo yaneleyo.

- Ukgcinwa kobushushu bomhlaba:

- Kuluncedo kwiiplohi ezincinane ukugquma umhlaba ngeplastikhi ebonisa ngaphaya kwayo ngexesha lasehlotyeni xa amaqndo obushushu asemini ephezelu. Esi sicwangciso-cebo siphinde sasetyenziswa ngempumelelo kwiimvavanyo zaseARC apho ngokubanzi siyinciphise kakhulu imibungu ezbihijela ezingcanjini.

- Ukujikelezisa kwezityalo:

- Izityalo ezinonxulumano zikhola ukuba zizisulu zezonakalisi zezityalo nezifo ezifanayo kwaye azifanelanga kulinywa ngendlela eyenza ukuba zimelane okanye zilandelane kumjikelo wojikeleziso. Izityalo ezizingcambu nezingamagaqa mazingalinywa endaweni enye yegadi kwiminyaka elandeelanayo ngenxa yokuba zizisulu ezikhulu zePPN nezinye izonakalisi zezityalo kune nezifo.

- Ukuamelana kwezityalo ezingabamkeli nako kulelinye icebo kuthintelo lokwanda kwananani emibungu engqukuva eziqhinelu ezingcanjini kwiinkqubo zokulinywa kwezityalo. Le ndlela yeyona ikhethekayo kuba ayixhamli kakhulu kwaye neendleko zezona ziphantsi. Nangona kunjalo, iintlobo zezityalo ezinomelano azifumaneki kuzo zonke izityalo eziziinkozo nakwzityalo zemifuno.

- Ukuisetenziswa komquba oluhlaza kune okanye izityalo ezigqumathelayo ezfana nengca yeVetiver neNemat engumhlanganisa weBrassica kunciphise amanani emibungu engqukuva eziqhinelu ezingcanjini kwiindawo ezithile zeemvavanyo nakwezasemasimini. Ingca yeVetiver iyakwazi nayo ukongeza ixabiso ukulungiselela umlimi apho imfuyo ikwayinxalenyne yenqubo yakho yokufama.

- Ukuftshatalaliswa ngaphandle kweekhemkhali kweengcambu/nezinye iinxalenye zezityalo: Tshabalalisa iingcambu/ezinye iinxalenye zezityalo kwangoko emva kokuba izityalo zingasakhuli egadini. Imibungu engqukuva ezizidleleleli zezityalo isaqhuba ngokuzondla nokuzandisa kwiinxalenye zeengcambu/nezinye iindawo zesityalo ezssemhlabeni nasekwandiseni amanqanaba omonakalo kwizityalo ezizisulu nezilandeliswayo.

Inqaku linikelwe nguNancy Ntidi, waseARC-Grain Crops, ePotchefstroom, nguAkhona Mbafotyi, waseARC-Tropical and Subtropical Crops, eMbombela noDriekie Fourie, we-Candelo leeNzulwazi zokusiniNgqongileyo noLawulo, kwiYunesithi yaseMntla Ntshona, ePotchefstroom. Ngolwazi oluthe vetshe, thumela i-imelyili alpha ntidin@arc.agric.za.



# I-CANOLA

## – ekufuneka kuqwalaselwa ngo-Okthobha

**N**go-Okthobha siqala silungiselele ukuvuna imivuzo yemisebenzi yethu yeenya ezelidulileyo. Zonke iimandlalo ezingaphezulu, izitshizi zezibulali zomngundo kanti ukufakwa kwezibulali zokhula kuyinto yexesha elidlulileyo.

I-canola esekwibanga elisekuqaleni lokuhlobleka kwemidumba isenokuba sisulu sohlaselo oluqalisa emva kwethuba kungako kusafuneka ukuhloloka okwenziwa rhoqo ngeveki nganye. Oku kungezeka ngokuthe chatha kwicanola enamasebe amaninzi ngenxa yokungayondelelani kwezityalo ize imidumba esemasebeni angaphandle athathie yexesha ukupuhuhla.

Izinambuzane ezinokubangela umonakalo wezoqoqoshu kweli banga ziquka iintwala, uvivingane olunomqolo osabudayimani kune nemibungu engqukuva. Luhlaselo olungaphaya komda oceiyiswayo kuphela olufanele ukutshizwa.

### Intwala

Ngokubanzi iintwala ziba yingxaki kwiimeko zemzulu enobushushu, nezbaleleyo. Izicuku ezikhulu zeentwala phezu kwezikhondo nakwimidumba zingathintela ukuhlobleka kwemidumba. Qwalasela kuphela ukufaka isitshizi xa inani eliphezulu lezityalo lihlaselwe. Icanola eseyikhulile ingalunyamezela uhlaseloluphezulu iwentwala kunakumabanga asekuqaleni okukhula.

Imozulu ebandayo idodobalalisa ukwanda kwamanani aphezulu eentwala kanti imvula izinciphisa kangangoko. Izinambuzane ezixhamlayo ezifana noonomeva, iimpukane noobhantom ziziqwengi okanye izidleleleli zeentwala ezikwaziyo ukunciphisa amanani azo. Kubalulekile ke ngoko ukuhlolole meko rhoqo ukubona ukuba ingaba kufanelekile na ngokoqoqoshu ukufaka isitshizi.

### Uvivingane lomqolo wedayimani (DBM)

Yiba soloko uhlola uvivingane oluncinane olumhlophe olubhabha phakathi kwezityalo xa lupazamisekile. Hlola izityalo ukhangeli iimpawu zentlava enebala elluhlaza okungekho nzulu olukholisa ukujinga kwimisonto yesilika kwizityalo xa lupazamisekile. Intlava encinane itya amaggabi kuphume imingxuma ekwaluphawu lohlaselo olonkuba khona. Xa zikhula zigqobhoza amaggabi abe nemingxuma kwimidumba nenokukhokelela kumonakalo olandela owokuqala ngenxa yezifo.

Umijkelo wobomi weDBM ukususela emaqandeni ukuya kuvivingane oludala kumaqondo obushushu afudumeleyo ( $28^{\circ}\text{C}$ ) asenokuba mafutshane kangangeentsuku ezili-14, ngoko ke amanani asenokwanda ngokukhawuleza okukhulu. Ukutshizela iDBM kunokuqwalaselwa kuphela xa ingaphezu kwe-20 imibungu yentlava ephakathi kobude be-3 mm ne-4 mm ngeshumi lezityalo nezibalwa kwithuba eliphakathi ukuya kweliseku-



*Izicuku ezikhulu zeentwala phezu kwezikhondo nakwimidumba zingathintela ukuhlobleka kwemidumba.*

gqibeleni lokudubula kweentyatyambo. Eli nani landa lifikelele kwimibungu eyi-50 ngeshumi lezityalo kwibanga lokuhlobleka kwemidumba.

### Imibungu engqukuva

Amasimi ecanola afanele ukuphawaselwa ukususela ekuqaleni kokudubula kweentyatyambo ukuze kukhangelwe imibungu engqukuva. Uvivingane olubhabha ebusuku lubekela ama qanda amhlophe nganye nganye kumphezulu wamaggabi. Uvivingane lwemibungu engqukuva lunamaphiko aphambilis asabuntsundu bomvu ukuze amaphiko angasemva abe sabumhlophe obufipheleyo. Uvivingane ose-lukhulile lingabekela ama qanda amanini kangange-1 000 kwithuba leentsuku ezintlanu ukuya kwezisibhozo zethuba lalo lobomi. Ama qanda aqandusela emva kweveki, ekhupha imibungu emincinane enokufikelela kwi-3 cm ngobude. Ngenxa yenani eliphezulu lamaqanda abekelwayo, amanani emibungu anokwanda ngokukhawuleza, ukuze kubekho uhlaselolukhulu olonkubangela umonakalo oxhalabisayo kwisityalo.

limeko ezikhuthaza ugqabhuo lwemibungu engqukuva ziquka iimeko zembalela, uhlaselolunamandalia iwentwala njengoko uvivingane luzondla ngencindi esemaggabini eyenziwa ziintwala okanye ezinye izondlo ezifunyanwa yimibungu. Imibungu engqukuva kumabanga asekuqaleni emibungu (ngaphantsi kwe-1 cm) ilawuleka lula kunemibungu eseyikhulile. Uku-tshiza makuqaliswe kuphela xa kubalwa imibungu emihlanu ukuya kwele shumi nge  $\text{m}^2$  nganye.

### Ukvuna icanola

Abalimi abaninzi bafula icanola yabo ngalo lonke ithuba lokukhula kwayo, kodwa bagqibele ngoku-



*Amasimi ecanola afanele ukuphawaselwa ukususela ekuqaleni kokudubula kweentyatyambo ukuhlolola ubukho nemibungu engqukuva.*

lahlekelwa yinzuso yasemva kokukhupha inkcitho ekupheleni kwexesha lokulima. Abaphandi abaninzi bakholelwakubeni ilahleko ezingeyomfuneko, ezingenazindleko kumlimi kwaphela xa zilungisiwe, zenzenka xa kufulwa nangexesha lenqubo yokuvuna. Lingqikelelo zeelahleko zezivuno ngenxa yokungalichani yexesha elifanelekileyo okanye ilahleko yeenkozo xa kuvunwa kubhulwa inokwahlu lula ukususela kwiikhilogram ezimbawla ukuya kwi-500 kg ngehektare. Kumaxabiso angoku, oku kumele ama-R500 enzuso emva kokukhupha inkcitho nge-100 kg nganye yelahleko.

### Ukufula

Ubukho bezixhobo zokusebenza bukhola ukuba ngumba ekusekelwa kuwo isiqqibo sokuba ingaba kuza kufulwa na okanye kuza kuvunwa ngqo ngokungqalileyo. Kwimandla ekukho kuyo imimoya evuthuza ngamandla xa icanola iqalis ukuvuthwa kufanele kuhkethwe ukufula njengoko ilahleko zisenokuba zikhulu kwicanola emileyo.

Ukufula kunezinto ezilunceo ngaphezu koku-vuna, nangona abalimi abaninzi eAustralia nase-Canada babuyele ekuvuneni ngqo. Xa icanola ivuthwa ngokungalinganiyo, ukufula kuyanceda njengoko imbewu iholisa ukuvuthwa ngokulungelelana ngakumbi xa ifuliwe. Oko kunakho nokunce-disa urlimi ukuba avune isivuno sakhe kwiintsuku ezis-8 ukuya kwezili-10 phambi kwexesha.

Ixesha elilelona lifanele ukufula kuxa ukutshintsha kwebala lembewu kuphakathi kwe 40% ne 70% nesiqulatho sokufuma se 30% ukuya kwi 40%. Umlimi makabe semva kwexesha kancinan ngakumbi kwimandla eshushu nebaileleyo kuba amaqondo aphezulu obushushu abangela ukoma kwemiqolo yefula ecukanisiweyo ukuze



**Ukuphakama okufanele ukusikwa kuko kokuphakame ngasentla kwamasebe ezityalo, ukuze izikhondwana ezimileyo ziba sabufolokhwe apho kunokuhlala khona umqolo wefula ecukanisiweyo.**

yome ngokukhawuleza. Icanola efulwe kwangoko kakhulu inokubangela iinkozo ezihihlaza nembewu encinane enesiqualatho seoyile ephantsi.

Ukfumanisa ukutshintsha kwebala lembewu, iisampulu zemidumba ezili-100 ezilimele intsimi yonke mazifulwe. Xa kuqalisa ukuvuthwa kwebewu ezantsi kwesityalo, imidumba mayicholwe ngezantsi, esiphakathini naphezu kwesityalo kwi-sikhondo esingundoqo. Vula imidumba uze ujunge ubunzulu bokutshintsha kwebala lembewu. Bala inani lembewu etshintshe umbala yaze yatyheli, yantsundu okanye yamnyama. KwiNcwadi yo-Qeesho ngokulinywa kweCanola kukho imizobo ecacileyo yokubonisa ukutshintsha kwebala lembewu emifanekisweni.

Iisampulu zokuqala mazithathwe kwiintsuku ezili-15 phambi kwesipheko sokudubula kween-tyatymbo ukuze kufunyaniswe elona xesha lifanelekileyo lokufula. Isipheko sokudubula kween-tyatymbo sichazwa njengaxa i 10% yazo zonke izityalo ziseneentyatymbo. Kufanele kuthathwe iisampulu rhoqo, kuba xa imbewu yomelele xa iqengqwa phakathi kweminwe, kungenzeka itshitshe ibala kwiiyure eziyi-24. Ukutshintsha kwebala kukhawuleza kakhulu xa kushushu futhi kubalele ngokunjalo kuyacotha kwiimeko ezipholileyo ne-zifumileyo ezithande ukufumaneka. Entsimini, imbewu ifunyenwe itshintsha ibala ngale ndlela ilandelayo ngosuku ngalunye:

20°C ukuya kwi 24°C: 3% ukuya kwi 4%;  
24°C ukuya kwi 2°C: 4% ukuya kwi 6%;  
kananjalo

27°C ukuya kwi 30°C: 7% ukuya kwi 8%.

Ukuba icanola ifulwe kwiintsuku ezine okanye ezintlanu phambi kwexesa, kungenzeka kubehko iilahleko ezinokufikelela kwi 10%. Ithutyana elifanelekileyo ziintsuku ezintathu ukuya kwezine kuphela. Eli thuba lenzeka malunga kwiintsuku ezingama-21 ukuya kwezingama-25 emva kokudubula kween-tyatymbo, kodwa oko kuxhomekeka kwimozi. Ukuba kufulwe emva kwexesa kakhu, iilahleko zezivuno zingancitishwa ngokufula ebusuku okanye xa umoya unokufuma okukona kuphezelu.

Ukuphakama ekusikwa kuko makube ngaphetu kwamasebe ezityalo, ukuze izikhondwana ezimileyo zibe sabufolokhwe apho umqolo wefula ucukaniswe khona. Oku kuqinisekisa ukuhamba komoya ngaphantsi komqolo wefula ocukanisiweyo ukuze icanola yome ngokukhawuleza. Ngokuxhomekeka kwiimeko zemozulu emva

kokubekwa komqolo wefula ecukanisiweyo ezifana namaqondo obushushu, umoya nokufuma, icanola ingavunwa malunga kwiintsuku ezisi-7 ukuya kwezili-14 emva kokufula.

### **Ukuvuna okungqalileyo**

limeko zamaxesha okulima zingowona mba mkhulu onefuthe xa icanola inokuvunwa ngokungqalileyo. Ngokubanzi, icanola ikulungele ukuvunwa ngokungqalileyo malunga neentsuku ezili-16 ukuya kwezingama-20 emva kwethuba elaneleyo lokubekwa kwefula ecukaniswe njengomqolo, kodwa ixesha lokubalela liya kukukhawuleza ukufikelela kwixesa lokuvuna. Isitshixo sokugcinwa kwexesha elichanekileyo lokuvuna ngqo ngokungqalileyo yipesenti yokufuma kwembewu. Inqanaba elifanelekileyo yi 7,5% ukuya kwi 8%, oko kuthetha ukuba imidumba ayinakufane iqhekeke kwaye iindiza ziya kungena ngaphandle kwamagingxigingxi kwishobo esiyintloko.

Ukuvuna xa ukufuma kuiyi 7,5% kuthetha ukuba icanola inokuvunwa ngaphandle kombethe njengoko izityalo ziya kuba ziseluhlaza kancinane. Ukuba abalimi balinda zide iindiza ziqualise ukuba mhlophe ngebala, njengoko beziya kuba njalo xa bekuvunwa icanola ebingaphezu kwefula engumqolo ocukanisiweyo, iilahleko zembewu beziya kuba phezulu. Xa ukufuma kwembewu kunokuba nganeno kwi 8%, qhuba ngokuvuna ungayeki. Imidumba ingavuthwa ngokukhawuleza xa kushushu, ngoko ke ukubamba ixesha kubaluleke kakhulu. Malunga nokuvunwa kweCanola ngqo isantya sokuvuna naso sibalulekile xa kuthelekiwa nokuvunwa kwezinye izityalo. Isantya esigqithisileyo, ngakumbi xa isityalo somile, sinokubangela ukuphekeka okukhulu ngenxa yemela nesixhobo sokwahlulahlula. Isantya sokuvuna sinokudinga ukucuthwa kancinane xa kusiyiwa kwimini emaqanda. Vuna xa ukufuma okufunekayo kungaphaya kwe 70% uze ueyeke ukuvuna xa kusihla. Icanola inokuthunyelwa xa isiqulatho sokufuma sifikelele kwi 14%, ngaphandle kokuba izibonelelo zokuyomisa ziyafumaneka.

Xa icanola ivuthwe ngokungalinganiyo, xa ukhula lwamva seluntshulile kungakho iingxaki ngethuba lokuvuna okanye kxa isityalo sixingile, kunokusetyenziswa iikhemikhali ukwenzela ukuba ivuthwe. Sebenzisa kuphela imveliso ebhaliselwe ukuvuthiswa kwayo ngekhemikhali njengoko iintsalela zezinye iimveliso zinokuthintela ukuphutelwa phambili kwesityalo. Ukumanziswa okufanelekileyo kwesityalo sipelele kubalulekile

**Elona xesha lifanelekileyo lokufula kuxa ukutshintsha kwebala lembewu kuphakathi kwe 40% ne 70% aphi isiqulatho sokufuma besiphakathi kwe 30% ukuya kwi 40%.**

njengoko ikhemikhali eyayanyiswayo ingasikhuphi endaweni yaso isityalo.

Ibanga lokufaka kwekhemikhali yokuvuthisa libaluleke kakhulu kuba ukuyitshiza kwangoko kakhulu kuya kuhokelela ekubeni imidumba ingabisakwazi ukuphuhla ngokuphuhla. Xa kuvuthisa ngekhemikhali, imbewu ifanele ukuba phakathi kwe 70% ne 80% yokutshintsha kwebala kona okwenzeka emva kwebanga lokufula. Icanola iya kuba ikulungele ukuvunwa phakathi kweentsuku ezine ukuya kwezisixhenxe emva kokutshiza, kuxhomekeke kubukhulu nakuyondelelwano lwestiyalo. Qaphela ukuba utshize kuphela indawo enokuvunwa kusuku olunye okanye kwezimbini ukuze kuthintelwe iilahleko ukuphekeka.

### **Yenza isicwangciso sexesha elizayo**

Yakuba ivuniwe intsimi, alicela amanyathelo anokunceda abalimi ukuba benze isicwangciso sexesha elizayo. Qwalasela iindiza ezisikiweyo ukufumanisa inqanaba lokusuleleka ngesonakalis esimnyama ne-sclerotina. Xa kubonakala ngathi inqanaba le-sclerotina elikhoyo liphezulu, zama ukuba kwixesa elizayo lokulima ungalimi icanola emasimini akufutshane nentsimi enosusleleko.

Kwakhona fumanisa isakhono senkubo yakho yokutshabalala ukhula. Qaphela ukuba loluphi ukhula olukhoyo, fumanisa ukuba ingaba iikhemikhali ebezisetyenzisiwe bezifanelekile na kubabanzi bokhula obunalo na uze wenze isicwangciso nomcebisi wakho xa kunokubakho iinguquko ezi-fanele ukwenziva kwixesa elizayo.

Okokuggibela, qwalasela ukuba ngawaphi amasimi afanele ukulinywa icanola kunya ozayo uze ucinge ngenqubo yokuvuna isityalo sangoku. Icanola ayintshuli kakuhle xa kukho umthwalo omkhulu wezikhondwana, ngoko ke makubehko icebo lokunciphisa isixa esiseleyo sezikhondwana, umzekelo, ukwenza iibhalis zesiroyi, okanye ukusika nokusasaza isitroyi ngokulungelelana ukuthintela ukucukana kweentsalela.

**Inqaku linikelwe nguChris Cumming, umceebisi kwiPRF 9Protein Research Foundation). Ngolvazi olithe vetshe, thumela i-imeyili apha: cummingza1946@gmail.com.**



# JONGA LE MIBA NGOKULI-NYWA KWEEMBOTYI ZESOYA

**U**cwangcisel o lwenqubo yakho yezityalo zasehlotyeni lusenokuquka ngaphezu kwesityalo esinye ngokunjalo nokulinywa kweembotyi zesoya mhlawumbi emhlabeni owomileyo okanye kumjikelo wonkcekcesho wijkeleziso lwezityalo.

Ezinye iingcinga ngezona zityalo zifanelekileyo ziza kubetha-bethana ngokuxhomekeka ekuben ingaba kuza linya emhlabeni owomileyo na okanye onkcenkcesshwayo.

Lingqikelelo zentengiso yemveliso okanye ixabiso leSafex leembotyi zesoya kwinyanga ka-Matshi nekaMeyi ngo-2019 ziyi-R4 807 ngetoni. Uhlalutyo lomda uwonke xa kuthelekiwa izityalo ezahluka-hlukaneyo ezinokukhethwa beluya kubonisa iingeniso ezilindele emva kokuxhuzulwa kwenkcitho malunga nefama yakho ngokunjalo nezivuno zezityalo ebezifumaneka kwiiizowuni zemihlaba nezemozulu yendawo ofama kuyo.

Amanqanaba amaxabiso ngetoni nganye abonisa ukuba olona gqaliselo lwezivuno lumphantsi lweetoni ezi-2 okanye ngaphezulu ekulinyweni kweembotyi zesoya emhlabeni owomileyo luya kuba lolufanelekileyo. Ukuze uqiniseke yenza olwakho uhlalutyo lweendleko olunobucukubhede.

## Imiba yolawulo neyokulima emayiqwalaselwe ngo-Okthobha nangoNovembra

### Imbewu nokutyalala

Ezinye iziphaluka ekulinywa kuzo ezssemihlabeni eyomileyo zifumene ngaphezu kwama-50 mm yemvula ngoJulayi kanti kune neemvula zasehlotyeni xa seliza kuphela nezasekwindla, inkcazo emfutshane ngomhlabi ifanele ukubonwa phantse njengesakhono sentsimi. Oku kuye kwacaca ngakumbi emihlabeni ephantsi kokulima nglondolozo lokuphethulwa komhlabi okanye xa kungahlakulwa kwaphela kulo nyaka.

Ingaba oku kufanele ukuba yinto eyenzeka kwifama yakho na, ukukhawuleza ulime iimbotyi zesoya kwangoko kukuthanda kwakho. Mhlawumbi lo ingangnyaka wezivuno ezhile ngenene. Mhlawumbi umntu angalima inxalenyenye kwezintathu ezilinganayo zeembotyi zesoya esaqla uSeptemba okanye

uOkthobha ukuze eziseleyo zityalwe ngoNovembra nangoDisemba esaqla.

Ukukhetha umhlanganisela weembotyi zesoya kuya kuba sesona sigqibo sibalulekileyo oya kuseenza. Thenga imihlanganisela yeembotyi zesoya kubathengisi ababalulwa ngomsebenzi omhle uez ucele icebiso labo malunga nokuthi ngowuphi owona ulungele ukulinywa kwixesha elide okanye eliphakathi. Zininzi iintlobo ezikhoyo ezinokukhethwa ngoku nezilungiselelwe isakhono somhlabawa kakh, iipateni zokuna kwemvula kunya namaqondo obushushu afumaneka ngexesha lokukhula kwezityalo endaweni yakho.

Okona kukhetha kuchanekileyo komhlanganisela olinywa kwangoko, esiphakathini okanye emva kwexesha okanye kwixesha elichanekileyo kusenokuba ngumba owakhayo okanye ochithayo nonokuqinisekisa ukufumana kwakho ezona zivuno ziphezulu phantsi kweemeko zendawo yakho. Qiniseka ukuba uthenge imbewu eyaneleyo ukwenzela xa kunokufuneka ukuba uphinde utyale. Amanani esityalo asekuggibeleni aphakathi krama-240,000 nama-280,000 angumzekelo omhle onokulandela nafanele ukulima okwensiwa emhlabeni owomileyo. Sebenzisa lo mgqaliselo kwimiqolo enezithuba zeemitha eziyi 0,76 neziyi 0,91 xa ufaka imilinganiselo kwisixhobo sakho sokutyalala.

### Ucwangcisel o lokufakwa kwezichumiso

Xa utyala, nokuba usebenzisa imigaqo yokuhlakula ngokwesiqhelo okanye nglondolozo qinisekisa ukuba ubuchule bokuhlanganisa isixhobo sokutyalala nomhlabi bumiselwe kakuhle ukujinisekisa ukudibana kakuhle komhlabi nembevu ngokunjalo amaqondo okufakwa kwsichumiso mawenzelwe imilinganiselo ngokweengcebiso.

Abanye abalimi basebenzisa izixa ezincinare zenitrogen xa betyla, kanti abanye abenzi njalo. Buza umthengisi wakho wembewu nengcali yomhlabi ukuze uyazi indlela eyamkelekileyo yokusebenza kune namava abongufakwa kwezichumiso eznika izivuno eziphezulu ngokunjalo namava malunga nefama okanye nendawo yakho. Ukuufakwa kwezichumiso ngokusekwa kwizondlo ezitsalwayo yeyona nto incinane inokwensiwa. Unqongophalo lwe-phosphorus ne-potassium efumanekayo luya kuba nefuthe elikhulu kwizivuno ekugqasilwelwe kuzo. Makwensiwe uhlalutyo lomhlabi

kwangethuba ukuze wazi ukuba kutheni usebenzisa izixa ocetyiswe ngazo nezilungiselelwe imeko yokuchuma kwemihlaba yakho. Thenga isichumiso esifanelekileyo ngokweengcebiso zelo xesha.

### Irayizobhiyam namaqhuquhuva

Qiniseka ukuba inkqubo yogonyo ngerayizobhiyam yeyona ifanelekileyo uze usebenzise izitofu zokugonya ezizezona zifanelekileyo. Ungafane wenze kuba ufanele ukugonya imbewu yakho ngokwemiyalelo nciam. Kukho iimveliso ezinokuxutywa kwintsuku eziliqela phambi kokutyalala ngelixa ezinye zifanele ukuxutywa ngokuchanekileyo kwiiyure eziphambi kokulima ukuze kufumaneka iziphumo ezizezona zilungileyo.

Ugonyo oluninzi luquka izivuseleli ezikhulisa iingcambu kwimveliso esisiseko sogonyo. Ezi ntlobi zogonyo zingasebenza ngenene ngokokuxhomedekka kwimeko yokuchuma nakubunzu bomhlabi ngokunjalo nakulwakhiwo Iwavo olufumaneka emasimini akho. Uze ungayibeki esichenengeni selanga ngqq imbewu exutyiwego xa uhloha isixhobo sakho ngembewu enyangiweyo.

Kubalulekile ukuqwalasela uphuhliso lwebhaktiriya yerayizobhiyam ezzinzisa initroge ezingcannji zeembotyi zesoya. Isitshixo sokufumana isivuno esiphezulu lugonyo olulungileyo olukwaziyo ukudala amaqhuquhuva awomeleleyo amaninzi ezingcanjini.

### Inkqubo yokutshatyataliswa kokhula

Ukuba usebenzisa imihlanganisela enyamezelia i-glyphosate qiniseka ukuba izixhobo ezidytaniswelwe kwsitshizi zilondolozelwe unyango olwenziwa ngexesha nangendlela echanekileyo ukuze naluphi ukhula oluyingxaki lutshatyataliswa ngexesha elichanekileyo locwangcisel o lokutyalala kwakho. Nceda funa icebiso malunga nokugcina ixesha nokuchanekwa kwexesha ngokunjalo nokuijya kwemveliso ye-glyphosate eza kusetyenziswa. Eli cebiso lifanele imigaqo yokuhlakula okwensiwa ngezandla nangomatshini nokuxhaswa ngemigaqo yokutshabalalisa ukhula ngaphandle kwe-glyphosate.

### Isiphetho

Yenza isicwangciso sokugcina zonke iimveliso zamalungiselelo ezingqalileyo zezityalo zeembotyi zesoya zilungile kuselithuba, efama, emva kokuqinisekisa zonke iingcebiso ezifanelekileyo kwiqela osebenza nalo lakho labacebisi. Zininzi indlela zobugcisa ezintsha malunga nokukhethwa kwemihlanganisela nemigaqo yokulima ngonyaka ngamnye apho umntu anokupuhlisa uthunge-Iwano Iwabacebisi abaphambili kumba ngamnye ngokulinywa kweembotyi zesoya.



# IIMBOTYI ZESOYA: Yintoni ingqiqo yeli xesha lizayo lokulima?

**N**gonyaka ka-2018/2019 kulindeleke iitoni ezizigidi ezingama-354,5 zemveliso yee-mbotyi zesoya ehlabathini. Kulindeleke ukuba imveliso yaseBrazil ihlale kwiitonni ezizigidi ezili-117 ngelixa iArgentina, ibuyele kwimeko yesiqhelo emva kwembalela kanti kulindeleke ukuba imveliso yayo yande kangangezigidzi ezili-17 ukuya kwiitonni ezizigidi ezingama-56.

ISebe lezoRhwebo noShishino (DTI) liphakamise isicwangciso-cebo sokufakelwa kwempahla ethengwa ngaphandle kwiminyaka embalwa edlulileyo, oku kuvuselele ukulima ngokunjalo kwakhulisa nesakhono seembotyi zesoya njengesezityalo ese-ziphambili kweli lizwe.

Kwishumi leminyaka edlulileyo, iimbotyi zesoya ibizezona zityalo zasemasimini ezikhula ngokona kukhawuleza kukhulu eMzantsi Afrika. Njengoko seliza kufika ixesha lokulima iimbotyi zesoya, kubonakala ngathi kuza kuqhuba isiqhelo sokukhula kwazo. Belilihle ixesha elidlulileyo lokulima, apha bekulinywe iihekture ezingama-573 950 kwaze ekuggibeleni kwakho isityalo seetonni ezizigidi ezili-1,316, ubukhulu becalo oku kubangelwe ziimeko ezintle zemozulu.

Malunga nonyaka wokuthengisa ka-2018/2019 iKomiti yeeNgqikelelo zeziTyalo (CEC) iqikelele ubukhulu bendawo ekulinywe kuyo iimbotyi zesoya obungangehektare ezingama-787 200, apha imveliso iya kuba ziitonni ezizigidi ezili-1,551 ukuze isivuno esilindelekileyo sibe malunga neetonni eziyi-1,97 ngehektare. IMpumalanga isephambili ekulinyweni kweembotyi zesoya apha kukho khona iitoni ezingama-554 300 ezivunwe ngonyaka ka-2017/2018 kanti imveliso kulindeleke ukuba

**Itheyibhile 1: Ixabiso leembotyi zesoya elifumaneka kwikeyiki yeoyile yesoya (iprotheyini yi 47%) elisetyenziswa eDurban njengakulo mhla 2018-08-21.**

Uthutho ngenqanawa R6 297	loyile ye- embotyi zesoya R10 900	Amakhasi eembotyi zesoya R1 600	Inqanaba lotshintshi- selwano R14,43
Okufike eDURBAN kwikeyiki yeoyile yeprotheyini yi 47%			R6 297 <b>R6 297</b> R4 660 R32 R1 853
Ingeniso evela kwiKeyiki yeOyile 74% Ingeniso evela kumaKhasi eeMbotyi zeSoya yi 2% Ingeniso evela kwiOyile yeeMbotyi zeSoya yi 17%			<b>R6 545</b>
<b>Ingeniso iyonke</b> lindleko zokucudisa nemida eyeyona iphantsi Uthutho ukuya kumatshini weembotyi zesoya			R400 R200
<b>Ixabiso lokuya kumlimi weembotyi zesoya (efama)</b>			<b>R5 945</b>

yande ngeetoni ezili-127 700 ukuya kwiitonni ezingama-682 000 ngonyaka ka-2018/2019. Ilandelwa yi-Free State enemveliso yeetoni ezingama-504 000 ngo-2017/2018 nekulindeleke ukuba yande ibe ziitonni ezingama-552 000 kweli xesha lizayo lokulima.

Ngowama-2017. Amaxabiso eembotyi zesoya ebemalunga ne-R4 600 ngetoni, esehla nge 29% kunya ngonyaka, ngenxa yamaxabiso ehlabathi aphantsi kune nerandi ebisomela. Kwixesha elizayo lokulima amaxabiso eSafex abonakala eza kuba kurhwebo oluphakathi komlinganiso wokuthenga nokuthengisa ngaphandle (**iGrafu 1**), apha **ixabiso elinxulunyanisiwyo** lekeyiki neoyile lalatha umlinganiso oxhome-keke kwixabiso leli lizwe (**Itheyibhile 1**).

#### Ukucukucezwa kweenkcukacha zamaxabiso

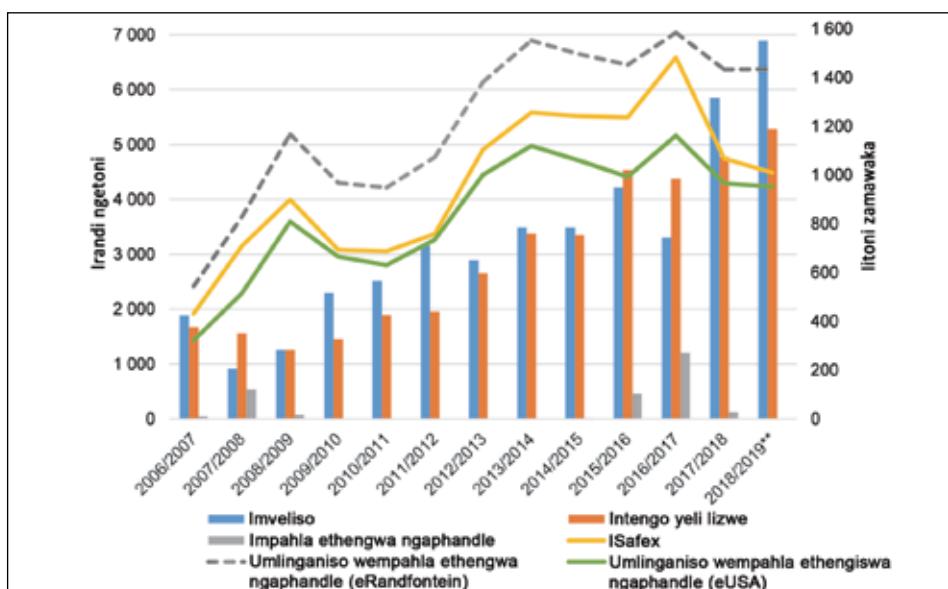
- Okufike eDurban kwikeyiki yeoyile yeprotheyini yeembotyi zesoya yi 47%: Ixabiso

ekunokuthengwa ngalo ngaphandle ikeyiki yeoyile yeembotyi zesoya enesiqualatho seprotheyini se 47% (simahlha kwisigadla, eDurban).

- **Amakhasi:** Ixabiso ekuthengiswa ngalo amakhasi eembotyi zesoya xa sekucudiswe isoya kwisityalo.
- **Ingeniso:** Ingeniso evela kwiinxalenye eza-hluka-hlukileyo emva kokuhuzwa komxube ngokucudiswa kweembotyi zesoya kumatshini wokucudisa osetyenziselwa urhwebo.
- **lindleko zokucudisa:** Ingeniso eyeyona inciane efuneka njengeendleko zokucudisa.
- **Uthutho lweembotyi zesoya:** lindleko zesiqhelo zothutho lweembotyi zesoya ukuya kumatshini wokucudisa iimbotyi zesoya ukuya kumatshini wokucudisa.
- **Ixabiso ukuya kumlimi efama:** Ukuxabiseka okufihlekileyo kweembotyi zesoya efama ngokuqwalasela zonke iindleko kune nenhalenye yengeniso yokucudisa iimbotyi zesoya (kuhluzwa umxube) kuze kuqwalaselwe umda ongowona uphantsi.

Ukuze intengiso yeembotyi zesoya iqhubo ngokwanda eMzantsi eAfrika ngenjongo yokuba ekuggibeleni ukwazi ukuzimela, sifanele ukusebenzia esona sakhono siphezulu sokucudiswa kweetoni ezizigidi ezi-2,5 malunga neembotyi zesoya ngokunjalo noojongilanga. Oku kuya kudinga ukuncitshisa okubanzi kwempahla ethengwe ngaphandle esiyifumana ngoku; abathengi beembotyi zesoya bangaphandle beli lizwe bafanele ukuqala bathenge imveliso yeli lizwe balinganise isidingo ukuze banqande ukuthengwa kwikeyiki yeoyile engena kweli lizwe ngexabiso elingaphantsi kweleendleko zethu zokuyilima.

**Igrafu 1: Ukulinywa kweembotyi zesoya, ukusetyenziswa kwazo, urhwebo namaxabiso: ngo-2006/2007 - 2018/2019.**



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# Masithethe ngojikeleziso lwezityalo

## Ukuba ufunu iziphumo ezahlukileyo ufanele ukuzama imigaqo eyahlukileyo

**U**jikeleziso lwezityalo lwalusiqhelo kubali-mi behlabathi lamandulo. Abalimi bexesha loMbuso waseRoma babelandela inkqubo eyayisaziwa ngokuthi 'ukufya, ukondla nefusi'.

Amasimi abo babewahlula ngokwamacandelo amathathu baze balime iinkozo ezityiwayo umzekelo, ingqolowa okanye umbona, isondlo semfuyo, njengebhali okanye iowuthsi ukuze icandelo lesithathu liyekwe liphumle ngokupheleleyo linikwe ithuba lokubuyisela izondlo kune nezinto ezivela kwindalo ebiphila ngaphambili.

Ujikeleziso lwezityalo lulahlwe ngabalimi bemyaka yoo-1950 xa ubuchwephesh 'banamhla' kune neekhemikhali babusenza ukuba abalimi babhenele ekulinyweni kwesityalo esinye kwindawo enye ngokunjalo bekusoloko kufumaneka izivuno eziphezulu ngokusebenzisa izichumiso, izitshabalisu zezonakalisi zezityalo nezibulali zokhula ese-zithengiswa kule mihla.

### Kodwa ivili ijikelezile ngoku...

Baninzi abalimi bombona abaphumeleleyo ekulimeni umbona wodwa entsimini bengawutshintshi nesinye isityalo, besebenzisa iinkqubo zokufakwa kwezichumiso, ulawulo lwezinambuzane nokhula ngokufaka izibulali zezonakalisi zezityalo zamanqanaba aphezulu. Abalimi baseMzantsi Afrika bebefumanise ukuba ukulima isityalo esinye kubanika izivuno eziphezulu kune neenzuso ezintle.

Nangona kunjalo, emva kwexesha elide lokulinywa kwesityalo esinye, abalimi babone ukuba ukulima isityalo esinye entsimini enye kunya emva komnye kuhokelela ekwanden iokhulu kobukho bezonakalisi zezityalo neziffo emasimini abo. Ukhukuliseko lomhlaba beluyenye ingxaki ebe-bequibana nayo ngaphezu kwakuqala. Ubukho benzuzu ekulinyweni kwezityalo kuye kwehla ngakumbi kwiminyaka yoo-1980 baze abalimi bajongana nemingcipheko eyandayo yokusoloko kulinywa isityalo esinye kwindawo enye. Bebefanele ukuzama into eyahlukileyo – ngoko ke baqalisa ngokusebenzisa iinkqubo zojikeleziso lwezityalo.

### Okungeloncedo ngokusoloko kulinywa isityalo esinye kwindawo enye

- Ukhukuliseko lomhlaba lukholisa ukukhawulezisa kukulima kwaye luqhele ukuba nobuzaza obuthe chatha xa kusoloko kulinywa isityalo esinye kwindawo enye.
- Isivuno sesityalo sisenokwehla xa kusoloko kulinywa isityalo esinye kwindawo enye.
- Ukhula luthanda ukwanda luze lube yingxaki.
- Kuyetha ukuchuma komhlaba, aze amanqanaba ezinto ebeziphila ngaphambili abe phantsi.

UNYAKA 1



UNYAKA 2



UNYAKA 3



*Umzekelo wenqubo enempilo yojikeleziso lwezityalo. Unyaka 1 = Ujongilanga → Unyaka 2 = Umdumba → Unyaka 3 = Umbona → Unyaka 4 = Sunflower.*

- Ukwakheka komhlaba namanqanaba okungenelena kwamanzi kuyetha kwiinkqubo zokusoloko kulinywa into enye endaweni enye.
- Ukusoloko kulinywa isityalo esinye kwindawo enye kuhokelela ekwanden kwezonakalisi zezityalo, iziganeko zezifo nelahleko kwizivuno.

### Imithetho-siseko ngojikeleziso lwezityalo

Enyanisweni ujikeleziso lwezityalo yinkqubo yokulinywa kweentobu ezahluka-hlukileyo zezityalo kumaxhesa alandelanayo kwintsimi enye ngenjongo yokuphucula isakhono esinozinzoso sokulima. Yinkqubo ephunyezwa ngenxa yokuba lunchedo emhlabeni okanye kuba izisa iinzuso ezintle zoqo-qosho – okanye zozibini ezo zizathu.

Ujikeleziso olulungileyo luya kubangela ukuphucuka kokuchuma komhlaba nesakhono sokukhupha imveliso kwaye lusoloko luquka isityalo esingumdumba esikhuthaza ukuzinziswa kwenitrogen, ingca okanye umdumba oya kuphucula ihumas kune nesityalo esiya kuhuthaza ulawulo lokhula. Indlela yokukhetha ujikeleziso ixomekeke kwizityalo eziqhelaniswe nemihlaba yemimandla, imozulu ngokunjalo nemeko yogoqosho. Ulwahlu-ka-hlukaniso oluza nenqubo yojikeleziso lwezityalo luneenuzzo ezininzi kuquka ukusetyenziswa kwezoqosho kwamanzi afumanekayo.

### Izinto eziluncedo ngojikeleziso lwezityalo

Ujikeleziso lwezityalo lunezinto eziluncedo ezininzi malunga nomhlaba, uqoqosho nokusingqongileyo xa kuthelkiswa nokusoloko kulinywa isityalo esinye kwindawo enye. Ujikeleziso lwezityalo olunesicwangciso esifanelekileyo luyiphucula kakhulu impilo yomhlaba njengoko kubakho ukwanda kwezinto ebeziphila ngaphambili, ukuphucuka kokwakheka komhlaba kune nokuphunguka kokwehla komgangatho womhlaba. Lusenakho nokubangela izivuno eziphezulu kune nesakhono semveliso yefama esithe chatha kwithuba elide.

- Inqanaba elithe chatha lezinto ebeziphila ngaphambili ezesmhlabeni liphucula ukugcineka kwamanzi nezondlo.
- Imeko yomhlaba ephuculiweyo inciphisa uxhomoekho kwizichumiso ezingeyomveli okukhokelela = kwiindleko eziphantsi zamalungiselelo okulima.
- Ukwakheka komhlaba okuphuculiweyo kukuthaza ukufunxe ka kwamanzi ukuze kunciphe imingcipheko yokugwantya kwamanzi ngamaxhesa ezikhukula.
- Ukuphucuka kokwakheka komhlaba kuthetha ukuncipha komhlaba otshayelekayo ukuze ucutheke umhlaba ongaphezulu olahlekayo.

# INGABA LIYAKHULA ISISHINI LAKHO?

**K**winqaku lethu lexesha elidlulileyo senze inkcazo yokuba kubaluleke kakhulu kumlimi wethu wamaxhesa anamhla, olima kakhulu okanye kancinane, ukuba abe nolwazi ngemicimbi yemali. Kwelo nqaku besijolise kwinkcazo yengeniso okanye ekwaziwa ngokuba yinkcazo yesiphumo seemali, inkcazo esetyenziselwa ukubonisa ukuba ingaba uyayifumana na inzuzo.

Inkcazo yengeniso ilinganisa isiphumo sakho seemali kwithuba elithile, yinto efana nogqatso. Kkishishini ugqatso lukholisa ukuthatha unyaka kwaye lubizwa ngokuba nguryaka-mali.

Kweli nqaku siza kujolisa kwinkcazo yemeko yemali, ngoku eseysasiwa ngokuba yimeko yemali yequmrhu yethuba elithile kwaye ilinganisa imeko yemali yeshishini lakho ngosuku oluthile. Imeko yemali ichaza isixa sempahla yexabiso ngokusitheleksa nesixa seentlawulo okanye samatyala. Ngoko ke ityala libonisa isixa semali osikwelita abanye abantu okanye osikwelita amaziko emali. Kodwa, inkcazo yemeko yemali iphindia isetyenziselwe ukubonisa ukukhula kwemali okanye inkqubela yeshishini lakho ukususela konyaka othile ukuya komnye.

Okuqhelekileyo kukuba uya kuba nenkazo yemeko yemali ekuqaleni kukanyaka-mali uze ube nenyekuqaleni konyaka ukuze uyithelekise neyasekuqaleni.

**Kwitheyibile 1** kukho isishwankathelo esifutshane esenziwe salula seeNkazo zeMeko yeMali ezimbini okanye iINkazo zemeko yeMali zosuku oluthile ekuqaleni kukanyaka-mali nakusuku olusekupheleni kukanyaka-mali. Kuboniswa imizekelo embalwa kphela yempahla yexabiso neyamatyala.

Masiqale ngokucacisa amagama ambalwa.

- Impahla yexabiso iqua yonke into eyeyakho esefama – efana nezixhobo, izixhobo zokusebenza, oomatshini, izithuthi, izakhiwo, imfuyo.

**Itheyibile 1: Isishwankathelo esenziwe salula seeNkazo zeMeko yeMali ezimbini zosuku oluthile ekuqaleni kukanyaka-mali nakusuku olusekupheleni kukanyaka-mali.**

- Amatyala aquka zonke iimali ozikwelita amaziko emali.
- Amagama afana nala athi, ithuba elifutshane, ithuba eliphakathi nethuba elide abhekiselele kwiminyaka yoqobo – kodwa xa kuthethwa ngempahla yexabiso abhekiselele kwithuba lesiqhelo lobomi bempahla yexabiso. Ithuba elifutshane ngunyaka omnye ukuya kwemibini, ithuba eliphakathi liqhele ukuba yiminyaka emihlanu kanti ithuba elide liyiminyaka elishumi nangaphezulu.
- Amatyala abhekiselele kwixesha onalo loku-hlawula imali-mboleko. Ithuba elifutshane lithetha ukuba unonyaka omnye ukuya kwemibini yokuhlawula imali-mboleko, ithuba eliphakathi liyiminyaka emihlanu kanti ithuba elide yiminyaka elishumi nangaphezulu.
- Igama elithi isabelo somnini okanye imali yeshishini esetyenzisiweyo lixabiso lemali ephuma epokothweni yakho oyityale kwifama yakho kunye/okanye iinzu ophinde wazityala kwifama yakho.

Ukuze ukwazi ukuqukanisela inkcazo yemeko yemali yequmrhu udinga iinkukacha. Okokuqala, udinga irejista yempahla yexabiso eluludwe lwayo yonke into eyeyakho kunye nexabiso lemali lezintezo. Okwesibini, ufanele ukugcina ingxelo efaneleleyo yawo onke amatyala.

Inkcazo yemeko yemali ibaluleke ngantoni? Ngokuqwalasela le nkazo umntu unakho ukubona ukuba ingaba isishini liyakhula na. Oko kwensiwa ngokufumanisa umahluko phakathi kwesabelo somnini ekupheleni kukanyaka-mali nasekuqaleni kwavo.

Kumzekelo wethu unyaka uphele ngomhla wama-28 kuFebruwari ngo-2018 kanti ugale ngo-mhla woku-1 kuMatshi ngo-2017. Umahluko ke ngoko ubuyi-R117 5000 ekuthathyathwa kuyo

i-R1 090 000 (amanani aku-J) obonisa inkqubo entle ngesixa esiyi-R85 000. Kusoloko kusisixa esisekupheleni ekuthathyathwa kuso isixa-mali sasekuqaleni. Xa isiphumo sibonisa inkqubo entle, njengakumzekelo wethu, oko kubonisa ukuba isishini lakho liqhube kakuhle kwithuba lonyaka okanye likwimeko ephucukileyo okanye eyomeleleyo okanye enokhuselo ekupheleni konyaka kunasekuqaleni. Le asiyonzuzo ingenguwo nomqukuelo wemali esesandleni, kodwa iyene into. Utyale imali ethe kratya kwimali eyeyakho kunye/okanye iinzu ophinde wazityala kwifama yakho.

Inkcazo yemeko yemali nayo inakho ukubonisa ukuba ingaba isishini lakho liyakwazi na ukuhlawula amatyala okanye akunjalo. Kubonisa oku, umntu ufanele ukubala ulwalamano phakathi kwempahla yexabiso epeheleleyo kunye namatyala apheleleyo. Kumzekelo wethu, ulwalamano phakathi kwempahla yexabiso iyonke kunye namatyala ewonke yi-2.58:1. (R1 520 000 (C) eyahlulwa ngo-R590 000 (H) nebalulwa njengolwalamano). Oku ke ngoko kuthetha ukuba nge-R2,58 nganye yempahla yexabiso unamatyala angange-R1,00. Icebiso kukuba ulwalamano lufanele ukuba yi-2:1 obona buncinane, oko kuthetha ukuba isishini lakho liyakwazi ukuhlawula amatyala futhi noko akukho mngcipheko ungako.

Xa kuchazwa ngenye indlela, ukuba unamatyala angapezu kwempahla yexabiso, umzekelo ulwalamano lungange 0.5:1, ngoko ke isishini lakho kungalindeleka ukuba lingakwazi ukuhlawula amatyala. Lo ngumzekelo onguwo wodwa weziganeko zolwalamano eziliqela anokwenza izibalo zavo umntu ngokusebeniza iinkukacha eziqukwe kwinkcazo yemeko yemali kwaye ingulowo unebalilahluyleyo lempumelelo yeshishini lakho ngokwasemalini.

	Impahla yexabiso	2017/03/01	2018/02/28		Amatyala	2017/03/01	2018/02/28
	<b>Impahla yexabiso yethuba elifutshane</b>	R	R		<b>Amatyala ethuba elifutshane</b>	R	R
A	Ibhanki	25 000	-		Ibhanki	-	5 000
	Imfuyo enokuthengiseka	100 000	125 000		Imbumba yoshishino	40 000	30 000
A	<b>Isixa sisonke</b>	<b>125 000</b>	<b>125 000</b>	E	<b>Isixa sisonke</b>	<b>40 000</b>	<b>35 000</b>
	<b>Impahla yexabiso yethuba eliphakathi ngobude</b>				<b>Amatyala ethuba eliphakathi ngobude</b>		
	litrektra	50 000	60 000		Imali-mboleko yeveni	35 000	30 000
B	Izithuthi	40 000	60 000				
B	<b>Isixa sisonke</b>	<b>90 000</b>	<b>120 000</b>	F	<b>Isixa sisonke</b>	<b>35 000</b>	<b>30 000</b>
	<b>Impahla yexabiso yethuba elide</b>				<b>Amatyala ethuba elide</b>		
	Umhlaba	1 000 000	1 000 000		Imali-mboleko yomhlaba	550 000	525 000
C	Izakhiwo	500 000	520 000				
C	<b>Isixa sisonke</b>	<b>1 500 000</b>	<b>1 520 000</b>	G	<b>Isixa sisonke</b>	<b>550 000</b>	<b>525 000</b>
				H	<b>Amatyala E + F + G</b>	<b>625 000</b>	<b>590 000</b>
D	<b>Impahla yexabiso iyonke A + B + C</b>	<b>1 715 000</b>	<b>1 7650 000</b>	J	<b>Isabelo somnini H + J or D - H</b>	<b>1 090 000</b>	<b>1 175 000</b>
D				K	<b>Isixa sisonke H + J</b>	<b>1 715 000</b>	<b>1 765 000</b>

Iqela labahleli

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*isiXhosa,*  
IsiNgesi, IsiBhulu, iSeTswana,  
iSesotho, iSesotho sa Leboa nesi IsiZulu.

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**Articles written by independent writers  
are the views of the writer and not of Grain SA.**

## 10 Masithethe ngojikeleziso Iwezityalo

- Kwimimandla emininzi yaseMzantsi Afrika ukhukuliseko olubangelwa ngumoya lwemihlaba engaphezulu lusisothuso esixhalabisayo, kanti ukuphucuka kokwakhaka komhlaba nezinto ezithe chatha ebeziphila ngaphambili kunciphisa ezi lahleko.
- Ukuphucuka kokwakhaka komhlaba kwandas ubukho bamanzi asemhlabeni ngamaxe-sha embalela.
- Ujikeleziso Iwezityalo lusetyenziselwa ukutshabalala ukhula nezifo kanti ukhula oluyingxaki lufunyaniswe njengolubangela umonakalo ongano-neno kujikeleziso Iwezityalo kunakwiinkqubo zokulinywa kwsityalo esinye kwindawo enye.
- Ujikeleziso Iwezityalo, xa kuthelekiswa nokulinywa kwsityalo esinye kwindawo enye, kunciphisa uhlaselw iwezinambuzane nezinye izonakalisi zezityalo ngokunjalo lunciphisa nokusetyenziswa kwezitshabalalisi zezonakalisi zezityalo = okubangela ukwetha kfewuthe lokusingqongileyo + iindleko eziphantsi zamalungiselelo okulima + imida yenzozo eyandileyo.
- Izityalo eziyimidumba – njengeembotyi zesoya, iimbotyi, iiveryisi ezinemidumba emide, amandongomane – kujikeleziso, zizinzisa initrogen ziyidibanise nomhlaba ngokwenza njalo kwa-nanda ukuchuma kunciphe isidingo sezichumiso ezingeyomveli.
- Kwakhona akunakuthiwa akubalulekanga ukuba ujikeleziso Iwezityalo luyindlela yokuthomalisa inguquko yemozulu. Ukuncitthiswa kwezichumiso ezithengwayo kukhokelela ekuncitthisweni kweegesi eziphumayo ezingafunekyo.
- Ukuphucuka kwempilo yomhlaba xa kudibene nokugcineka kwamanzi = kukhokelela kwizivuno eziphezulu kwithuba elide.
- Ujikeleziso Iwezityalo yenye yezona ndlela zilula zokulondoloza isakhono somhlaba sokwandisa imveliso.



*impawu zomelwano lokhula ngenxa yokubaxwa kweentlobu ezifanayo zeekhemikhali.*

iingcaphephe malunga nayo le nkqubo ukuze ufumanise ukuba yeyiphi eyona misebenzi yokufama eza kukulungela.

### Kubalulekile ukuqwalesela imibandela efana nale:

- Ingaba sisityalo esineengcambu ezinzulu okanye ezisidibi umzekelo, umbona noojongilanga zizityalo ezineengcambu ezinzulu kanti ingqolowa neembotyi azinazingcambu zinzulu.
- Ingaba sisityalo samaggabi abanzi okanye anciphileyo?
- Zeziphi izitshabalalisi zezonakalisi zezityalo eziza kufakwa, kwaye ingaba zinethuba elide lentsalela enokubangela umonakalo kwsityalo esilandeliswayo kwinkqubo yojikeleziso?
- Buza abanye abalimi ukuba zeziphi na iintlobo zojikeleziso ezibasebenzeleyo bona. KuMntla Ntshona abalimi bathanda ukulandela oku, kuNyaka woku-1: nguJongilanga – kuNyaka wesi-2: imidumba umzekelo iimbotyi nee-erityisi zemidumba emide – kuNyaka wesi-3: Ujikeleziso lombona, isityalo seengcambu ezinde sika-jongilanga silandeliswa ngesityalo seengcambu ezisidibi semidumba esizinzisa initrogen emhlabeni phambi kokuba kutyalwe isityalo nezifo ezifanayo.
- Izityalo zosapho olunye mazingaze zilinywe ngokulandelelana kuba kusenokwenzeka ukuba zikhathazwa zizonakalisi zezityalo nezifo ezifanayo.

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## Yenza umsebenzi wakho wasekhaya uzazi izityalo zakho

Ujikeleziso Iwezityalo asiyonto umntu anokusuka enze isiqqibo ngayo ngesiquphe. Yinkqubo yama-nyathelo ecwangciselwe ngobuchule. Yinkqubo efanele ukwenzelwa isicwangciso kwiminyaka eliqela kwithuba eliphambili. Lusoloko iluluvo olulungileyo ukuzidibanisa nabalawuli bophu-hliso beGrain SA bendawo yakho kune nezinye

## Ingaba liyakhula ishishini lakho?

Ukuze ishishini lakho libe nempumelelo ngokwase-malini kufuneka lifake inzuso (ngokokwalathwa yinkcazo yengeniso), ishishini lifanele ukukhula ngonyaka ngamnye (ngokokwalathwa yinkcazo yimeko yemali) kwaye kufuneka ube nemali esesandleni ekhoyo ebhankini (inkcazo yomquk-qelo wemali esesandleni). Nangona kunjalo, ubukho benzozo kusabaluleke kakhulu. Ukuba

ishishini alifaki mali alisayi kukhula, kwaye kunge-nzeka ungabi nayo imali ebhankini.

*Athikele e kwadilwe ke Marius Greyling, mokwadi wa Pula Imvula. Fa o tlhoka kitso gape, o ka romela emeile go mariusg@mccacc.co.za.*



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