

# PULA IMVULA

**GROWING** FOOD • PEOPLE • PROSPERITY

INCWADI YEGRAIN SA YABALIMI ABASAKHULAYO



Isithombe: Eric Storbeck

## Kubalulekile ukuvuna NGESIKHATHI ESIFANELE

**U**KUVUNA NGESIKHATHI KUQINISEKISA UKUBA AMANDLA ESIVUNO AFINYELELE EQOPHELWENI ELIPHEZULU NEMALI ENGENISWA YIZILIMO INGATHOLAKALA NGOKUPHELELE MASINYANE EMVA KWESIGABA SOKUVUTHWA NGOKWE-FIZIYOLOJI.

Ukuvunwa kommbila, ubhekilanga nobhontshisi isoya kubandakanya ukucabanga ngamanye amafektha afanayo ajwayelekile esilimeni ngasinye.

- Ukuhlela ngokufanele indawo yokubeka noma ukudiliva isilimo kubaluleke njengesikhathi esifanele sokuvuna.
- Ukulahlekela yizinhlamvu ngenxa yokuvuna isikhathi sesedlule kakhulu kufanele kuncishiswe.

- Noma yisiphi isimo sezulu esibi esifana nemvula eningi ngokweqile, umonakala ongadalwa umoya noma isichotho esilimeni esesivuthiwe kuba nomthelela omkhulu esivunweni sakho.
- Isimo sezulu esiqhubeka nokuguqbala singaphromotha *i-fungus*, *i-aflatoxin* nezinye izinhlekellele emakhanda ezinhlamvu.
- Zama ukunciphisa umonakalo odalwa yizinambuzane, izilokazana, izinyoni nezilwane.
- Nciphisa umonakalo ongadalwa ubungozi bomlilo ezilimeni zakho.
- Kamuva nje ukwebiwa kjesilimo sakho osisebenzele kanzima nakho sikuyefektha yobungozi obukhulu eNingizimu Afrika.

### IMICABANGO NGOMMBILA

Isitshalo esiphelele nokukhula nezigaba zamaqabunga kungachazwa kusukela ekutshaleni kuye ekuveleni kwezivakazi noma usilika. Inani



## IZWI LIKA...

Jurie Mentz

SIFUNDO ENGISIFUNDILE NGEZOLIMO (NESINGASETSHENZISWA FUTHI NASEMPILWENI JIKELEL) UKUTHI UMA UKHULUMA NJE NGENTO UNGENZI LUTHO, UHAMBA OHLANGOTHINI OLU-NGAFANELE, KODWA UMA WENZA OKUTHILE KUSHO UKUTHI UHAMBA KAHLE.

Ukulima ngempumelelo kusho ukususa ubungozi. Kufanele ukuthi uhlale uzama njalo futhi ube ngaphambili kwayo inkinga futhi ungenzi ngoba sekukhona inkinga – njengomlimi eshayloro azungeze insimu yakhe. Uma usukuma ngenxa yenkinga, ugcina usuyijaha inkinga.

Futhi kuyiqiniso ukuthi izinkinga ezintsha ziyoohlala zikhona lezo okufanele umlimi ehlale efunda kuzo ukuze ezogwema ukwenza amaphutha afanayo kibili. Umlimi ngeke enze into efanayo njalo ngonyaka bese elindela umphumela ohlukile.

Uma unemali encane, kuhle ukuthi utshale indawo encane kunokuba uzame ukusebeniza leyo mali onayo utshale indawo enku. Lolu ugibe onganga kulo uma ungaqaphile. Zama ngamandla onke ukukhiqiza kakhulu esiqeshini senhlabathi yakho ngaphambi kokuba uzame ukulima kakhulu ube unga-nayo imali eyanele.

Kunesisho sesiZulu esithi *Indlela ibuzwa kwabaphambili*. Loko kuchaza ukuthi kufanele ubuze kulabo abangaphambi kwakho ngendlela ohamba kuyo. Izibonelo ezimbalwa zalokhu nazi:

- Omakhelwane abaziyo ngeklayimethi, uhlobo lwenhlabathi, nesimo sezulu sakuleyo ndawo.
- Abadayisi bama-input abehlukene abafisayo ukukusiza ufinyelele kophokophelele kukho.
- Izinsiza ezitholakala kalula ku-inthanethi.
- Uthamele zonke izifundo, imihlangano yabalimi phecelezi i-farmer's day and study group owaziyo.

Uma sikhulumia ngokulima, umgwaqo ongahanjwa kakhulu awu-wenzi umehluko; umehluko owenziwa wulwazi nalokho okufanele ukulindele kanye nentshisekelo yokwenza okuthile ngalokho. ■

## Kubalulekile ukuvuna...

Iezinsuku esigabeni ngasinye zihlukana *i-cultivar* ngayinye. Izigaba sokukhiqiza ezifaka phakathi ipholineshini ukukhula kwezinhlavu noma ama-kernel, *i-grain filling* njengoba amanyuthriyenti ethuthelwa esikhwebini nokuvuthwa fizyolojikhali kanye nesiphetho sokukhula kufike kusayizi omkhulu nesisindo senhlamvu ngayinye. Le sigaba singathatha cishe izinsuku ezingu-63 ngokwesamba sika-119 wezinsuku kusukela kuqala ukumila kwezinhlamvu kuye ekuvuthweni ngokwefiziyoloji.

**Ukukhula ngokwefiziyoloji** kuchazwa njengeskathi sokuthi isitshalo nohlamvu ngeke kusakhula noma kukhule ngokwesindo. Isitshalo esivuthiwe nohlamvu kuzoqala ukoma kuze kuvunwe. Isikhathi sincike kuma-cultivar atshaliwe, ukukhula noma ama-heat units atholakele, kanye nezimo zezulu ezivamile okubalwa kuzo imvula, ukungena kwe-qhwa lokuqala nomswakama nomoya ngalesi sikhathi.

*Emaphesenti (%) umswakama oqukethwe  
wohlamvu ungaqapheleka ngokuthatha  
amasampuli ezikhwebu.*



Inkomba yokuvuthwa ngokwefiziyoloji kwesitshalo ibonakala ngokuhla inhlavu kutholakale sekvakheke umkhakha omnyama kwi-kernel esisekelweni se-kernel. Lokhu kungabonakala ngokuhluwanisa phakathi uhlamvu usuke phezulu uyophuma phansi ngomese ukhaliphayo ukuze ubheke ukwakheka kolayini.

Kubalulekile ukuhamba phakathi ensimini yakho futhi uqaphele ukuthi kufinyelelele nini kuleso sigaba. Emaphesenti (%) umswakama oqukethwe wohlamvu ungaqapheleka ngokuthatha amasampuli ezikhwebu, kususwe ama-kernel futhi uyowahlola kusilo esisendaweni noma usebenzise ithesta yakho. Ireyithi yokulahlekela ngama-kernel ingalinganiswa futhi abhekwe njengoba wehla usuka ku-35% uya ku-14% ezinsukwini eziyi-14 ezilandelayo noma ngaphezulu.

Usuku lokuhlela ukukhombayina sekungalinganiswa ukuqinisekisa ukuthi ikhombayini yakho iwulungele umsebenzi wokuvuna, noma ukuthi usuyazisile inkontileka yakho ngokwezindawo nangezinsuku ongahle uqala ngazo ukuvuna.

Uma ulima endaweni enomswakama omningi, kufanele ukuthi uhlalele isilimo okufanele somele epulazini (uma ikhona indawo phansi eyanele), noma ngokungenisa inzuzu uma udiliva kusilo esibhalisiwe.

Ngaphandle kwalokho, ukukhombayina kufanele kuhlehliswe ukuzo umswakama wesivuno uze ube ngaphansi kuka-14%. Kunghathatha amanye amaviki amathathu noma okungaphezulu okusafanele kwehle kusuke ku-18% kuye ngaphansi kuka-14%. Amanye ama-silo ayazomisa izinhlamvu zommbila zibe ngaphansi kuka-14% uma amazinga okushisa ezoba ngaphezulu kuka-30°C ngesikhathi esilinganiselwe ukubeka.

Uma unazo izinqolobane ezifanele noma ezinye izindawo zokubeka izikhwebu zingavunwa zisanomswakama ongu-18% futhi ubekelwe ukugaya futhi usetshenziswe emva kwesthathi. Kodwa, uma izikhwebu zingenawo umoya owanele ohelezayo endaweni okulondolozwa kuyo okunomswakama ophezulu, ingozi yomthelela we-aflatoxin ezikhwebini izokhula kakhulu.

## IMICABANGO NGOBEKILANGA

Izigaba zezitshalo, namaqabunga amanangi amilile njengomhlahlandela, kungenzeka ezinsukwini ezingu-35 noma ngaphezulu kusukela ekutshalen. Lokhu kufaka phakathi ukumila, ukukhula kwembewu kanye nokuqala kokukhula kweqabunga. Amaqabunga azoqhubeke amile futhi



**Ukuvuna ngesikhathi kubalulekile ukuze ugweme ukulahlekelwa kanti futhi kungakusiza ekukhuliseni amandla esivuno sokusanhlamvu.**

akhule. Akufani nommbila, ukwakheka kwe-bud kwenzeka kusaqala nesitshalo sonke nesi, amaqbunga nokuhakaza kwamakhanda kuyaqhube ka futhi kwaziwa ngokuthi isigaba sokuqhakaza kwe-bud. Isigaba esingeziwe ukuqhakaza nokuhula kwezinhlamvu.

Ukuvuthwa ngokwefiziyolozi ngeleso sikhathi kuyafinyeleleka ikhanda lisuka ekubeni luhlaza okotshani libe phuzi bese liba nsundu. Isamba esingalinganiselwa ezinsukwini eziyi-155 kusukela ekutshaleni kuye ekuvuthweni ngokwefiziyoloji ngokuvamile kuyadingeka. Ukuvuthwa ngokwefiziyoloji kubonakala ngenkathi ama-bracts azungeze ikhanda likabhekilanga luguquka liba nsundu nephesenteji yomswakama okumaphesenti angu-30% kuye kwangu-40%.

Isikhathi esifanele sokuqala ukuvuna singaphambi kokuba amakhanda esome ngokuphelele ngesikhathi izinhlamvu zinomswakama olinganiselwa ku-9% kuye ku-10%. Kumswakama ongu-7% ukuchachamba nokulahlekelwa kungaba phezulu. Iphesenteji yomswakama wenhlamu kufanele uqashwe ngelokhozi ukuze isilimo sivunwe masinyane.

Izinhlamvu ezingahlanziwe nezinhlamvu ezintsha ezikhombayiniwe zingaba ne-fungus ekhulayo emahoreni angama-24 uma izinhlamvu zingaphezulu kuka-9% zomswakama kanye nezinhlamvu ezivuniwe ezidiliziwe zabekwa ngaphansi kweshedi.

### **IMICABANGO NGOBHONTSHISI ISOYA**

Izigaba zokuhula zikabhontshisi isoya zidlula esigabeni sokuqhuma kweqabunga lesihlanu elivulekile. Isigaba sokuthela siyaqala ngokuqala kokwakheka komdumba futhi kuphele ngokufa kwezitshalo, imidumba nezinhlamvu. Ekuvuthweni okufizikhali kwemidumba ukungu-95% iphenduka ibe phuzi okusansundu, ibe *tan* noma *tawny* ngokombala.

Ezinye izinsuku eziyisihlanu kuya kweziyishumi zesimo esomile se-zulu siyadingeka emuva kokuvuthwa fiziyolikhali kwamazinga a-avareji omswakama kabhontshisi kuba ngaphansi kuka-15%. Ukuvuna nokubeka kungaqlwa ngenkathi izinhlamvu zisesigabeni esifanele somswakama ongu-13%.

Ubhontshisi isoya unganqunyelwa noma ungeze wanqunywa ujuqu ngemikhuba yokuhula kwawo. Iztshalo ezingumayo ziyama ukukhula nokuhakaza uma ubude bokuhanya kwelanga buncipha. Ngakhoe

itzhalo ngazinye zikhulisa imidumba ivuthwa ngesikhathi esifushane. Ama-cultivar kabhontshisi anganqumi ujuqu ayaqhube ka nokuhula, aqhakaze izimbali futhi akhiqize imidumba kuze kufike isikhathi sokuba ame ngokwe-genetically enquuniwe yokufinezwu kwasikhathi sobude bokuhanya kwelanga. Cishe amaphesenti angu-75% ezimbali zonke asungulive angaphunza ngaphambi kokuba imidumba iqale ukusetha.

Iztshalo zingaba nochungechunge kusukela ekuveleni kwezimbali ezinsukwini ezingu-43 kuye ku-65 wochungechunge kuye ku-50% wokuqhakaza izimbali ngochungechunge lwezinsuku eziyi-127 kuya kwezi-143 kuye ekuvuneni okuvuthiwe. Ama-cultivar esizini ende atshalwe ngoSepthemba noma u-Okthoba kungathatha izinsuku eziyishumi kuya kweziyi-14 noma ngaphezulu ukuze amile uma kwenzekile kwebanda. Ulwazi iukhombisile ukuthi ubhontshisi isoya 'ingabambezela' esikhathini esomile nangesikhathi soqhakaza.

Kubalulekile ukuhubeka nokuhapha iphesenteji yomswakama kusukela ngesikhathi izinhlavu zifinyelela kusayizi wazo ominimamu bese uqala ukulahlekelwa umswakama masinyane. Ikhombayini okungenani kudingeka ibe khona okungenani kusasele iviki ngaphambi kokuvuna umswakama kufanele ufinyelel ku-13%. Uma imidumba yome ngokungaphezulu kuka-15% kuya ku-20% wesilimo kungaba nokulahlekelwa ngenxa yokuchachamba okwenzeka ngaphambi kokukhombayina kanye nangenqubo yokuvuna uqobo.

### **ISIPHETHO**

Uma uzothatha isinqumo ngama-cultivar ommbila, kabhekilanga noma kabhontshisi isoya qinisekisa ukuthi uyazazi izilinganiso zezinsuku zezitshalo nesikhathi sokuthela. Ukuvuthwa fizikhali kanye nephesenteji yomswakama wokuvuna efanele kungabhekisiswa ngeso lokhozi. ■



**U-RICHARD MCPHERSON,  
UMELULEKI KWEZEHIZINI LEZOLIMO  
NOKUPATHWA KWEPHROEKTHI**

# IZINSALELA ZOMMBILA yikhomodithi ebaluleke kakhulu

**N**GOKUTHAELA PHEZULU IZINSALELA, EMPELENI UMLIMI UKHULISA UMVUZO KANYE NENZUZO YOMJIKELEZO WOMKHIQIZO WAKHE WOMMBILA. NJENGOBA I-PROFIT MARG/VIS INGAPHANSI KWENGGINDEZI, BONKE ABALIMI BOMMBILA KUDINGEKA BANQUME UKUTHI BANGAZISEBENZISA KANJI NI IZINSALELA PHECELEZI I-STOVER EZISALA EMASIMINI.

I-stover sommbila siqukethe amaqabunga, izinhlanga, nezikhwебу зеситшало sommbila ezisela emasimini emva kokuvuna. Yikhomodithi ebaluleke kakhulu futhi abalimi bommbila kufanele ukuthi ngempela balwenze uhlelo lokusisebenzisa i-stover ngandlela thize, noma okungenani basidayise.

Abanye abanikazi bemihlabu abaqashisa ngomhlabu wabo kwabanye abalimi bangasho ukuthi bafuna ukuba ne-aksesi ensimini emva kokuvuna ukuze bahlomule kwi-stover esisensimini. Uma kunjalo umlimi oqashe leyo nsimu kufanele abe nolwazi ngokubaluleka kwe-stover futhi kufanele kube khona ukudayisa esivumelwaneni sokuqashisa ngomhlabu.

## UKUSEBENZISA I-STOVER

Izindlela ezahlukene zokusebenzisa i-stover ukuze uzuze kakhulu ukudlisa imfuyo ensimini noma usiqoqe usisuse ensimini.

Indlela eyonga kakhulu yokusebenzisa i-stover ukugquba imfuyo yakho uyokudla i-stover esisensimini. Kungadliwa kahle yizinkomo ne-zimvu kodwa kungamoseka kakhulu ngoba ngaso lesu sikhathi izinkoma ziyaqixoba i-stover khona ensimini. Umvuzo walokho ukuthi ngokwenze njalo ayikho imali oyisebenzisa udlizili noma abasebenzi okufanele basuse i-stover ensimini. Okubi ngokudedela izinkomo ukuba zidle ensimini ukuthi zizodinga ukudla emasimini isikhathi eside kakhulu. Uma kunjalo umlimi nguye okufanele enze isinqumo ngoba lesu senzo siyamvimbela angasebenzi ensimini futhi engakwazi ukulungisela inhlabathi isizini elandelayo – ukusebenza amasimini ebusika kungaba nomvuzo esilimeni esilandelayo.

I-stover sommbila singumthombo obalulekile wokudla nendlela enhle yokukhulisa imfuyo yakho ezinyangeni zonke zasebusika. Imfuyo izothola isimo nokunonophala ku-stover sommbila uma kuqhathaniswa notshani basebusika emafusini noma emadlelwensi. Abanye abalimi baze bakuhlelele lokho futhi bathengele imfuyo yabo ikakhulukazi ukudla i-stover sommbila bese bezidayisa futhi emuva kwezinyanga ezimbalwa ngenxa yesithembiso esihle sokuba nesindo emva koku-zidisa amahlanga ommbila i-stover.

Uma umnikazi womhlabu engenakho okunye afuna ukukusebenzisa insimu isikhathi eseluliwe emuva kokuvuna, i-stover sommbila angasiqoqela ndawonye enze amabhele futhi asisuse emasimini. Lokhu kubandakanya izindleko zomshini njengoba i-stover, sdinga ukugawulwa, sikhukhule futhi kwensiwe amabhele. Umlimi kuyodingeka enze isibalo – ukusala kwe-stover esiningi ensimini kusho ukuthi kulula ukuthi yenzive leyo phrosesi. Umhlonulo ukuthi ngenxa yale ndlela, ithoneji enkulu ekhona ingakhishwa ensimini. Ngakho ke ingadayiswa noma ixutshwe yenzive ileseni lokudla kwemfuyo – noma imfuyo idle njengoba kunjalo, imfuyo izidlele amabhele endaweni ekhululekile. Ukuvunwa kwe-stover sommbila kufanele kwenzive masinyane emva kokuvunwa kokusanhlamu. Kuba nokwehla kancane kancane kwekhwalithi yokudla kwemfuyo uma ishiywa emasimini isikhathi eside njengoba ushukela namaphrotheni aqukethwe ayancipha kodwa kukhula i-fibre.

Kodwa ke kukhona futhi okunye okubi ngokwenza amabhele nge-stover okufanele umlimi angakulibali futhi aqhathanise izindleko nokunye



*Setshwantsho: Setlhophsa sa Grain SA*



*Izinhlanga zommbila ngokuvamile azisetshenziswa ngokufanele kodwa zingumthombo wokudla obalulekile futhi kufanele zibonakale njengese-negezo kuprogramu yokudla.*

ukukhetha. Ukusishanyela sonke i-stover emasimini, inhlabathi isala obala ekutheni ugugulwe futhi inhlabathi engapezulu iyaphephuka. Ngenxa yalesi sizathu, abanye abalimi bakubona kungcono ukusiyekela i-stover sommbila sivithikele emasimini futhi sibolele khona ensimini, basishiye kanjalo bengasithinti, futhi ngaleylo ndlela singeza imvundo nokondleka kwenhlabathi. Le yindlela engeniza umlimi we-nothili noma ukuthila okuminimamu, njengoba umqondo walokho ukuvundisa nokushiya imatheriyali yemvelo enhlabathini. Kusobala esimeni esifuze lesi ayikho imfuyo eyongena idle kulawo masimu. Lokhu kuyinselelo kubalimi abanangi bommbila okulindeleke ukuba badele yonke imfuyo yesigodi ukuba idle emasimini abo ezinyangeni zasebusika.

Bonke abalimi kufanele bacabange ngokuthatha isikhathi ukuze bacabange ngendlela engcono abangayikhetha futhi benze isinqumo ngokubaluleka okumelwe yi-stover sommbila. Ngeke sikhaya ukushaya indiva ukusebenzisa lo mkhiqizo ngokusezingeni eliphezulu, lokhu kungasho ukudicilela phansi. ■



**U-JENNY MATHEWS,  
UNGOTI WEZOKUPHATHA  
NENTUTHUKO NOKUFUNDISA**

# Asibheke izimo zemakethe kabhekilanga kuleli

**E**MINYAKENI EMININGI UBHEKILANGA USETHOLE UDUMO NJENGESILIMO ESINGADINGI AMA-INPUT AMANINGI UMA SILINYWA NANGAPHANSI KWEZIMO ZOKULIMA EZI-MARGINAL, NGEZIVUNO EZINGAGUQKI NGAPHANSI KWESIMO SEZULU ESIBI NEZINSELELO. KWEZINYE IZIFUNDA ZOKUKHIQIZA, UBHEKILANGA, KODWA KUYALINDELWA KUZE KUBE USUKU LOKUGCINA LOKUTSHALA.

Umkhiqizo kabhekilanga waseNingizimu Afrika uhlezi ufana eminyakeni kumashumi nyaka amabili ngokwehla okubonakalayo endaweni elokhu kutshalwa kuyo eminyakeni emihlanu (**Kugrafu 1**). Kule singakhathi esicwaningwayo, iNingizimu Afrika ikhiqiza izilimo zikabhekilanga omuhle, okubandakanya okwenyuka okungaphezulu kuka-800 000 t umaki.

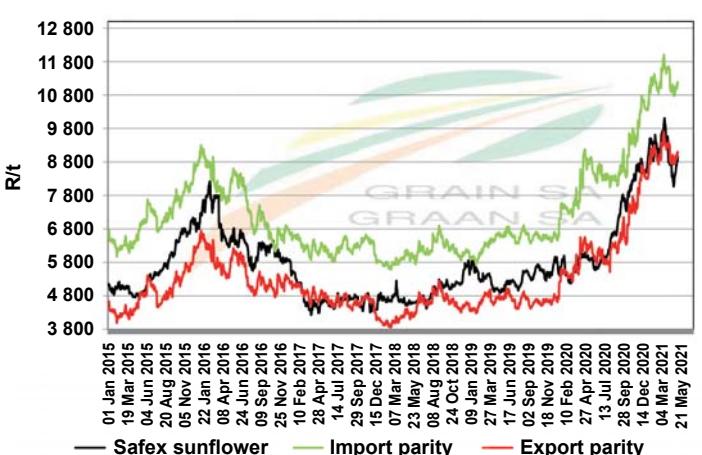
Ngokwesisekelo, uma amazinga amanani entengo yokuthega emazweni angaphandle enyuka kuba khona ukwanda, kodwa lokhu kudala ukulungiswa emakethe namanani entengo okudaysela amazwe angaphandle ayebla. Ngenxa yalokho, inuzu iyehla nabakhqizi baqala ukunciphisa izindawo zikabhekilanga. Ngokwe-Crop Estimates Committee (CEC), isibikezeloso somkhqiziso wezinhlamvu zikabhekilanga ka-2021 kulinganiselwa ukuthi ungehla cishe ngo-9% ku-696 290 t uma kuqhathaniswa nesibikezeloso esiyifayineli sika-788 500 t ka-2020. Kulinganiselwa ukuthi izinhlamvu zikabhekilanga zingaba u-477 800 ha, okulinganiselwa ku-4,5% ngaphansi kwesizini edlule, kanti isivuno esilindelekile singu-1, 46 t/ha.

I-bulk yezinhlamvu zikabhekilanga ziyagxotshwa kwenziwe ngazo u-oyili odliwayo nodliwe abantu, bese kuthi ingxenyenca encane udliwe yimfuyo. Ngenxa yesivuno esikhulu sezinhlamvu zika-oyili kabhekilanga, kusetshenzisewa kakhulu ukudliwa abantu. Ukdla kukabhekilanga, yi-by-product yephrosesi ka-oyili omuncwayo udayiselwa abakhqizi okudla kwemfuyo kuleli, njengoba ngokuvamile kuthathwa njengomkhiqizo osezingeni eliphansi kakhulu ongelinganiswe nokudla kukabhontshisi isoya ngokwezinga lenyuthrishini ne-fiber equukethwe.

Ukuphroseswa kukabhekilanga bekulokhu kwehla kwenyuka

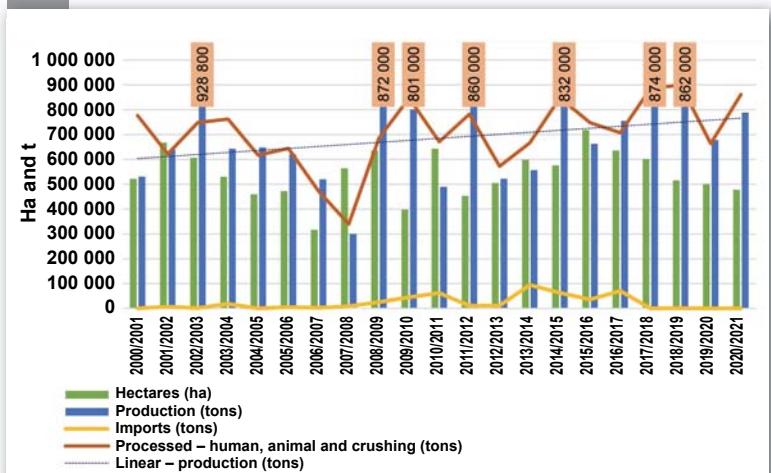
**2**

Amanani entengo yembewu kabhekilanga wase-EU adilivwe e-Randfontein.



Umthombo: I-Grain SA

**1** Amahektha kabhekilanga, umkhiqizo nokuthengwa emazweni angaphandle.



Umthombo: SAGIS

eminyakeni, kodwa kwenyukela phezulu (Ugrafu 1). Idimandi kabhekilanga othunyelwa emazweni angaphandle incane. Eminyakeni eyishlanu edlule, ubhekilanga uvela emazweni angaphandle unciphe kakhulu futhi lokhu kungabonakala ngokwenyuka komthamo ogxotshwa kuleli nokusethenziswa kukabhekilanga okhiqizwa kuleli. Esikhathini seminya-ka yomkhiqizo ophansi kabhekilanga, umsebenzi wokugxoba izitshalo inciphile futhi ukuthengwa emazweni angaphandle kwama-refineries nokuthengwa kuka-oyili ohlaza kakhulu, njengoba intengo yakhona ayimbi eqolo kunokuthenga izinhlamvu zikabhekilanga.

Intengo yezinhlamvu zikabhekilanga beyihweba ngokwamazinga entengo yokudaysela amazwe angaphandle kusukela ekuqaleni kuka-2020 (**Igrafu 2**), lokho kwehlisela ingcindezi endaweni etshaliwe. Intengo yezinhlamvu zikabhekilanga isekwa ukukhuphuka kwamazinga entengo okudayswa ngayo emazweni angapandle, ikakhulukazi ipushwa ukwenyuka kwentengo ye-oilseed emhlabeninanye nokuba ntekenteke kwe-domestic exchange rate. Ngenxa yalokho, intengo yezinhlamvu zikabhekilanga njengamanje idayisa ku-42% ngaphezulu kunesikhathi esiwunyaka esedlule kusukela ku-avareji ka-R6 000/t ngo-Ephreli 2020, kuye ku-R8 500/t ngo-Ephreli 2021.

Uma amanani entengo ekhuphuka njalo eqonga, kungalindeleka ukuba indawo kabhekilanga uzobuyela emuva emgqeni wesimo nasekukhuleni kwangesizini yemakethe ka-2021/2022. Njengoba isizini iqhubeka, kulindeleke ukuthi izinhlamvu zikabhekilanga zizoqhubeka nokuwheba ngokwamazinga entengo yamazwe angaphandle, ngokomthekela wentengo ye-oilseeds, okufinyelele emananini amasha aphezulu kakhulu kanye nokuqonga kakhulu kwentengo ka-oyili kabhekilanga kuyinciphise idimandi. Ukuguquguqqua kwe-exchange rate, yaseNigizimu Afrika genye yezinto okufanele ubeke iso lakho kukho. ■

U-IKAGENG MALULEKE,  
USOMNOOTHO WEZOLIMO  
KWA-GRAIN SA





# YENZA NGCONA *amakhono akho obuholi*

**A**BEZINDABA BEBESIGXISHA NGEMIBIKO YOKU-NGENZI KAHLE KWEZIKHUNGO EZININGI EZAHLU-KENE EZWENI LETHU EZINYANGENI EZIMBALWA EZEDLULE. UKUSWELA AMAKHONO OBUHOLI KUCASHUNWE NJENGESIZATHU SOKUNGENZI UMSEBENZI NGOKUGCULISAYO. KODWA NGABE YINI UBUHOLI FUTHI YINI ENGENZIWA UKUBENZA KANGCONO?

Ngabe uba kanjani ngumholi? Umholi engakhethwa noma aqokwe. Noma uba ngumholi ngesikhathi unquma ukusungula ibhizinisi lakho lokulima. Ukuba ngumholi kuniyeza umuntu amandla negunya loko-hala nokuphatha.

Ngenkathi ubhekene nemisebenzi wokuhlela ukuphatha, ukuhlela uku-implimenta nokulawula ibhizinisi lakhe umnikazi/umphathi futhi ungumholi. Njengomholi kufanele athathe izinqumo, axhumane, wabe umsebenzi, uxhumanise imikhakha, akhuthaze abantu bakhe aphinde agcine impatho eqinile. Ukuhola umsebenzi obaluleke kakhulu wokuphatha. Ukusebenza kwanoma iyiphi inhlangano, encane noma enkulu, kuhambelana ngqo nekhwalithi yobuholi bayo. Inkinga enkulu kakhulu ukuthi abaphathi abaqotho ababona abaholi abaqotho.

Ubuholi amandla okukwazi ukufaka ugqozi, umthelela nokukhuthaza abanye ukuze umsebenzi/ okumele kwensiwe/wensiwe ngokuzinikela nangomoya omuhle ukuze kufezekiswe okuphokelelwe. Ngakho ke umholi nguye ukufanele abe nomthelela kwabanye abantu ukwenza lokho ukufanele kwensiwe ukuze kufinyelelwelwe kokuhloswe yinhlangano ethile. Njengomholi umnikazi/umphathi kufanele kube neminye imisebenzi ethile ayiqalisayo ikakhulukazi mayelana nezinhlelo zoku-implimenta. Ebhizinisisi lakho nguwe okufanele ube nomthelela kubasebenzi bakho ukuze benze umsebenzi ngokukhululeka nangomoya omuhle benze lokho okufanele kwensiwe ukuze baphumelelise izinhloso zebhizinisi lakho.

Uma ucabanga ngokufadalala kvezikhungo njengoba kubikiwe, omunye ngokwejwayelekile angabona njngesizathu ukwehluleka ukupalisa izinhlelo ngendlela. Lokhu kusukela ebuholini obehlulekayo ukuba nomthelela kulabo okufanele baqalise ukusebenza kwezinhlelo zezikhu-ngo ngokufanele.

## UMHOLI OQOTHO

Kungani abaholi behluleka ukubafaka omoya kubantu kuze basebenze? Cabanga ngalokhu okulandelayo ukuze uthole okungaba yisizathu esenza behluleke ukuholi.

Umholi oqotho unalezi izimpawu ezilandelayo:

- **Ubuqotho:** Le yikhwalithi ebaluleke kakhulu yokuba umholi oqotho. Uku-ziphatha kwakho kunenkambiso. Uneqiniso imfundiso yakho uayayiphila. Okushilo awuguquki kukho futhi uyakwenza lokho okwethembisile.
- **Umdlandla** nethemba: Akekho ofuna ukulandela umholi ongenawo umdlandla noma intshisekelo ngento ayenzayo. Kufanele ukho-

mbise ukuthi inentshisekelo enempilo emsebenzini futhi masinyane abanye bazolandela.

- **Iguya lokusebenza kanzima.** Kufanele ukhombise uthando loku-khkhela impumelelo: amahora amade nokusebenza kanzima.
- **Amakhono obudlelwano obuhle nabantu.** Unentshisekelo ezidingweni nezinselelo zabasebenzi bakho nokuzihlupha ngempela futhi uzame ukubasiza ngokubenzela ngcono izimo zabo.
- Umuzwa **wokuzibophezela.** Uyawavuma amaphutha futhi ungazami ukusulela ngabanye.
- **Ukuzithemba.** Ukwenza izinqumo. Ungawalinganisa amaquiniso, thatha isinqumo, unagadluki kuso, futhi ubone ukuthi kuqaliwe.
- **Amakhono ukuxhumana okuhle.** Uyakwazi ukudlulisa umbiko uqinisekisa ukuthi akukho ukungaqondisisi namaphutha.
- **Ukuhlonipha** abanye abantu. Lokhu kubonakala ngendlela okhuluma ngayo nowenza ngayo kwabanye abantu. 'Izinduku namatshe kungawaphula amathambo, kodwa amagama ephula izinhliyo.' Ungambukeli phansi umsebenzi.

## UKUBA UMHOLI ONGCONO

Ukwenza ngcono ubuholi bakho, khumbula ukuthi njengomholi, kwesti-nye isikhathi kuzodingeka ukuthi wenze izinqumo ezingajwayelekile. Ngeke weneliseke wonke umuntu ngezikhathi zonke. Thatha isinqumo, unagadluki esinqumeni sakho, futhi nabanye bakuhloniphe.

Gwema ukuzikhukhumeza utshele abangaphansi kwakho ukuthi wena uyibhosu nokuthi kufanele benze lokho okushoyo.

Khombisa isibindi nempokophelo. Ungahlehli ngenxa yezinselelo nangokuphikiswa kodwa unagadluki kokushoyo futhi uzethembe koholelwakukho.

Ngakho ke futhi ungachemi. Bonke abasebenzi bakho ubaphathe ngendlela efanayo ikakhulukazi ngempatho eqinile. Ukuchema kusho isiqiniseko sokuba nenselelo nomoya wokubhidlika kweqembu. Phatha abantu ngendlela ongathanda nawe ukuba uphathwe ngayo.

Yiba qotho. Uma ungenaso isixazululo enkingeni, kwamukelo lokho. Ngako ke qinisekisa ukuthi isixazululo usithola masinyane. Ukuzama ukuba umuntu owazi konke kuzokukhipha inyumbazana kubasebenzi bakho, kanti ukucela imibono yabo kuzokwenza umuntu ongcono ebudlelwani nasekutholeni izisombululo ezingcono. ■



U-MARIUS GREYLING,  
UMELULEKI OZIMELE WEZO-  
KUPHATHA KWEZOLIMO

# I seluleko esihle sokukhetha umanyolo

**U**KUSEBENZA NESIVUNO SESILIMO SOMMBILA SIHAMBELANA NGQO NEKLAYIMETHI YENHLABATHI NOMANYOLO. IMIPHUMELA YOKUHLOLWA KWENHLABATHI IYADINGEKA UKUZE UZOWAZI AMANYUTHRIYANTI ADINGEKAYO KANYE NOKUWAFAKA NGOKUYIKHO.

## OKUDINGWA UMMBILA UKUZE UKHULE NGEMPUMELELO

Ukuze uthole isivuno esikhulu, kubalulekile ukuba isitshalo sommbila sikhule masinyane uma simile ngokuphelele. Ukuze kubo nokukhula okusheshayo, kudingeka kubo khona inani elifanele lamanyuthriyenti. Ummbila udinga inayithrojini (N), ifosforasi (P) ne-phothezyamu (K) ukuze ukhule ngokuphelele futhi isilimo sibe nesivuno. La manyuthriyenti abalulekile ekukhqiqwani kokusanhlamvu futhi akuvamile ukwenzeka ngokwamakhwantithi anele enhlabathini.

- Inayithrojini yinyuthriyenti ebalulekile futhi ineqhaza ekukhuleni, esivunweni nakukhwalithi yesilimo sommbila. Umnyolo wenayithrojini ibaluleke ngokuphromotha ukukhula okuhle kwamaqabunga.
- Ifosforasi ibaluleke ekukhuliseni izimpande nasekukhuleni kwesitshalo sommbila, njengoba ithintana ngqo nokukhula kwezihlokwana zesitshalo.
- Iphothezyamu ifezekisa amaqhaza amanangi esitshalweni sommbila okubalwa kuso nokulawula amanzi aqukethwe (ukusizayo ngezikhati zesomiso), ukuhanjisa kukashukela kusukela emaqabungeni nasekunakekeleni ukuqina kwesthalo.

## UKUKHETHA UMANYOLO

Lapho ingekho khona imiphumela yokuhlolwa kwenhlabathi futhi wena awunaye umdayisi kamanyolo ozokweluleka I-Fertiliser Association of Southern Africa (FERTASA) ngokuvamile ishicilela izinombolo ezikhishiwe zikamanyolo isilimo ngasinye. Bona **Ithebul 1** le zinombolo zamanyuthriyenti akhishiwe ezitshalo zommbila. Leli thebulalingumahlahndlela obanzi futhi aluzibheki izibonakalo ezifana nokususa amanyuthriyanti nokwenza ifosfethi iqine. Akuyona indlela engcono kakhulu ukunquma ngephrogremu kamanyolo.

Ziningi izinhlobo ezahlukene zikamanyolo ezikhona, isibonelo 13:7:10(30), 15:8:4(27), 20:7:3(30) ne-urea (46:0:0) nezinye. Umbuzo uthi yimuphi ofanele isidingo sakho.

Kubalulekile ukuqondisisa ukuthi ngabe zisho ukuthini izinombolo ezisesikhwameni sikamanyolo. Uma senza isibonelo asithathe u-13:7:10(30). Izinombolo zokuqala ezintathu njalo ziyyreshyo ephakathi kwe-N:P:K ngaleyo oda. Inombolo ekubakaki ukujya kwezithako ezisikhwameni. Kulokhu kusho ukuthi u-30% wesikhwama umanyolo. Lokho okunye okokugcwalisu okubophela izithako ndawonye. **Ithebul 2** isibonelo ukuchazwa kwemininingwane ka-13:7:10(30).

Kulesi sinqumo yimuphi umanyolo ongafakwa, kubalulekile ukubala i-reshyo ka-P:K okudingekayo kanye ne- P:K ireshyo kamanyolo. Kuthebul 1, ngokweminingwane yamathani awu-4, u-60:12:16 i-P:K reshyo ngu- 75% (12 ÷ 16) nereshyo ka-13:7:10(30) kamanyolo ireshyo u-70% (7 ÷ 10). U-15:8:4(27) i-P:K ireshyo ngu-200% (8/4). Uma kuhkona labo-manyolo lababili kuphela u-13:7:10(30) kungaba ukukhetha okungcono.

Ukwenza isinqumo ngenani likamanyolo okufanele uwufake siyazi ukuthi sidinga u-16 kg wephotheziyamu. Isamba esidingekayo u-160 kg 13:7:10(30). Ukubala lo-16 ÷ concentration ÷ K ireshyo ekumanyolo. Kulesi simo u-16 ÷ 30% ÷ 33.3% = 160 kg kamanyolo ihektha.

Ngoku-aplaya u-160 kg 13:7:10(30) umanyolo kuzoba no-20,78 kg wenayithrojini u-11,18 kg wefosforasi no-16 kg wephothezyamu e-apla yiwe. Kusobala ukuthi iyashoda i-39,22 kg N. Ukushoda kwenayithrojini kungalungiswa ngokuthi kufakwe i-topdressing okungenziwa ngokufaka u-85 kg we-urea. Ngokukwenza ngale ndlela umanyolo odingekayo ukuba ufakwe ungabalwa.



**U-PIETMAN BOTHA,  
UMELULEKI OZIMELE  
KWEZOLIMO**

**1**

Izinombolo ezikhishiwe zamanyuthriyenti esitshalo sommbila ezivunweni ezahlukene zokuhlela.

Amanyuthriyenti esitshalo	Ithani ngalinye	Ngo-4 t	Ngo- 6 t
INayithrojini (N)	U-15 kg	U-60 kg	U-90 kg
IFosforasi (P)	U-3 kg	U-12 kg	U-18 kg
Iphothezyamu (K)	U-4 kg	U-16 kg	U-24 kg

**2**

Ukuchazwa kwe-13:7:10(30) imininingwane kamanyolo.

	N	P	K	Ukujiya
I-N:P:K Ratios	13	7	10	30%
IReshyo ka-N:P:K	13 ÷ (13 + 7 + 10) = 43,3%	7 ÷ (13 + 7 + 10) = 23,3%	10 ÷ (13 + 7 + 10) = 33,3%	100 × 30% = 300 kg kamanyolo
Inani lika-NPK ku-1 000 kg kamanyolo	300 × 0,433 = 130 kg	300 × 0,233 = 70 kg	300 × 0,333 = 100 kg	700 kg we-filler

# Qinisekisa ukuthi I-SCLEROTINIA ayibhubhisi ISILIMO SAKHO

**I-SCLEROTINIA STEM ROT IDALA UMONAKA-LO OMKHULU EZILIMENI, IKAKHULUKAZI UBHONTSHISI ISOYA NOBHEKILANGA, FUTHI INGABA NOMPHUMELA OMKHULU EKULAHLEKELWENI YISIVUNO. I-SCLEROTINIA SCLEROTIORUM FUNGUS YIYO EDALA LE SIFO. ENINGIZIMU AFRIKA, IZILIMO EZIBALULEKILE EZIHLASELWA YISIFO UBHEKILANGA UBHONTSHISI ISOYA NEKHANOLA.**

## IZIZINDA

Izifo ze-Sclerotinia zihlasela kakhulu ama-species ezi-thalo ezingaphezulu kuka-500. Lokhu kufaka phakathi izilimo ze-oilseed (ubhekilanga, ubhontshisi isoya nekhanola), izilimo eziyimifino (amaveji) (iklabibishi, ukholifulawa, ibhatha-nathi, usolozi phecelezi i-hubbard squash, amaphepha, utamatishi, amaphizi) Kanye noku-nye okuthela imidumba phecelezi legumes (ubhontshisi owomile). Kubalulekile ukwazi ukuthi ukhula, olufan ne-Tall khakibos, ama-cosmos ajwayelekile no-blackjack oywayelekile nakho kuyisizinda se-Sclerotinia.

## IZIMPAWU

Izimpawu ezibonakalayo zincike esigabeni sokukhula esizinden. Uku-buna kwezithombo kungenzeka nakuba i-Sclerotinia stem ne-head rot ngokuvamile zihlasela ezigabeni zokuqhakaza kwezimbali nemidumba noma i-seed filling. Izilonda ezimnyama ezimanziwe ngamanzi yizimpawu zokuqala ezibonwa zimbozw nge-mycelium emhlopho ekotini (lokhu kukhula kwasikhunta okubonwayo) emakhanda e-sunflower (**Isithombe 1a**) nama-pods wesoya kanye nakuziqo zombili ubhekilanga nobhontshisi (**Isithombe 1b**).

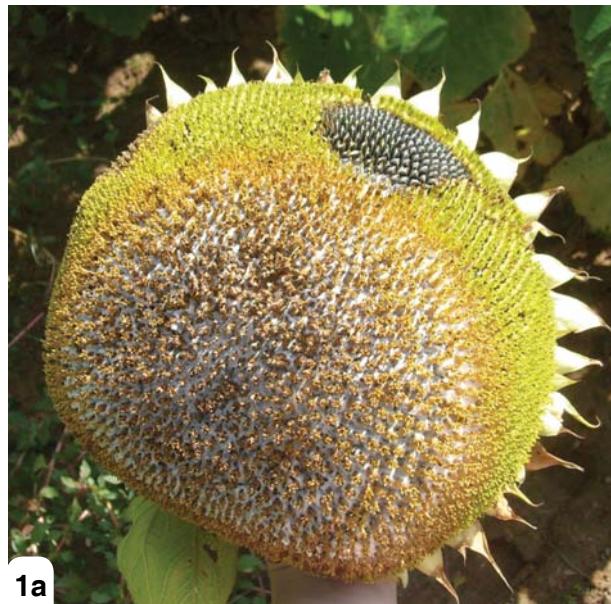
I-mycelium emhlopho ebusweni bukabhekilanga egcina ikhula iba yinethi ye-black sclerotia, i-structure sokuphila futhi isuka lapho i-pathogen yilapho yalithola khona igama layo. Njengoba izifo ziyadlondlobala, zibukeke ziyyicucu, ne-sclerotia ephakathi kwama-fibre ezi-thalo kungabonakala kakhulukazi kubhekilanga. La ma-fungus futhi angaba nomthelela kwi-subterranean crown futhi akhe i-sclerotia ngaphansi esiqwini sikabhekilanga nobhontshisi isoya.

## NGABE NGINGASILAWULA LE SIFO?

Ukulawula isifo i-Sclerotinia kunzima kakhulu. I-fungus yenza ama-structures okuphila aqinile (kwethulwa kusaqala njenge-sclerotia) okungaphila enhlabathini iminyaka engaze ibe yishumi nambili uma izimo zenhlalo zisivuna.

Ngenxa yokuthi ziningi izitshalo ezalhukene ezenza i-Sclerotinia, kunzima ukulawula izifo nokushintshanisa izilimo. Isilimo esisodwa engasihlasi i-Sclerotinia ummbila. Ngenxa yokuthi i-sclerotia ingaphila isikhathi eside enhlabathini, ukulandelana kokushintshisana kwezilimo nokuswela ikhaya kudingeka kwenziwe isikhathi eside esingaphezulu konyaka noma emibili ukuzama ukunciphisa ukuhlasela kwesifo nokube-leseka kwe-pathogen enhlabathini.

Mancane kakhulu ama-fungicide akhona eNingizimu Afrika, futhi lokhu kudingeka kusetshenziswe ngesikhathi esifanele. Ama-cultivar kabhontshisi isoya nakabhekilanga eNingizimu Afrika konke ingaku-hlasela yi-Sclerotinia, kodwa izinga lesifo liyehluka ngama-cultivar.



I-Mycelium emva kwekhanda likabhekilanga (a) nasesiqwini sikabhontshisi isoya (b).

Ekugcineni kosuku, ayikho indlela eyodwa yokulawula i-Sclerotinia. Kusukela manje, kudingeka ulawule ukuba khona kwe-pathogen ukujinisekisa ukuthi ukhlasela kuhlezi kuphansi. Ukuqedu isifo kuzothatha iminyaka eminingi, uma kungenzeka ukuba uyisiphule nezimpande imithombo ye-inoculum.

## YINI OKUFANELE UYENZE UMA UTHOLA I-SCLEROTINIA ENSIMINI YAKHO

- Khumbula ukuthi ikumaphi amasimu noma yiziphi izingxenyen zensimu okupe kwahlasela khona i-Sclerotinia futhi utshale isilimo esingelona ikhaya layo ngonyaka olandelayo.
- Hlakula lonke ukhula kuleyo ndawo engaba ne-Sclerotinia.
- Thenga imbewu eqinisekisiwe.
  - I-Sclerotia ingadluliswa yimbewu. I-SANSOR-iqinisekisa isigaba sembewu okungenzeka isabalalise i-sclerotia, engadedela inani elincane le-sclerotia embewini.
- Izinsuku zokutshala zibalulekile. Ukushesha utshalani ngesizini kungasiza ukuba izitshalo zifiyelele ekuvuthweni ngaphambi kokuba izimo zilungele i-Sclerotinia. Kodwa, lokhu kuncike kwi-cultivar efanele noma ngokukabhontshisi isoya.
- Nciphisa inani leitzhalo.
  - Ikenophi eyenziwa yizitshalo zakho ezifana nobhontshisi isoya kucatshangwa usungula i-microclimate ngaphansi kwamaqabunga angathandwa ukukhula kwezifo. Ikenophi eminyene nayo yenza kube luhkuni ukulawulwa ngamakhemikhali ukuba kufinyelele kuma-fungus.

Maningi amanye ama-athikhili aku-webpage ku-<http://sclerotinia.co.za/>. abakhiquzi nabo bangafinyelela ku-Dr Lisa Rothmann (CoetzeLA@ufs.ac.za) noma u-Dr Miekie Human ku-(012 943 8207) uma bane-minye imibuzo. ■

I-ATHIKHILI IHLANGANISWE ABAPHENYI  
BE-SCLEROTINIA ENINGIZIMU AFRIKA

# Gawula gawula ulungiselele insimu YAKHO ISIZINI ENTHSA

ZINSALELA ZEZITSHALO ZIVIKELA ISAFESI YENHLABATHI ELANGENI, EMOYENI NASEZIMVULENI EZINKULU NGOKUVAMILE ZIGUGULA INHLABATHI EBALULEKILE ENGAPHEZULU PHECELEZI *TOPSOILS*. ABALIMI ABANINGI BAYAZISEBENZISA IZINSALELA NGEZINDLELA EZITHILE EZAHLUKENE, MHLAWUMBE NJENGOKUDLA KWEMFUYO NOMA NJENGEMETHIRIYALI EVUNDISA INHLABATHI.

Umlimi kufanele enziwe isinqumo esiphusile lapho enza eqhathanisa khona imihlomulo yokudlisa imfuyo nokushiya izinsalela zivundise ukuze zizokhulisuzinza kwenhlabathi futhi zenze ngcono izinga lokumunceka kwamanzi. Kodwa ubukhulu nobubanzi bezinhlanga zezilimo ezifana nezikabhekilanga nezikakotini zingadala izinkinga ngesikhathi kwenziwa umsebenzi wokuthila nokutshala. Iziqu nezinhlanga zezilimo ezinjalo azephuki masinyane njengoba kusuke kudingeka futhi zingabhajisa imishini zilimaze namathayi. Ngakho ke kungcono ukuzigawula izinhlanga zikabhekilanga ezisele nge-muva emasimini ngenhoso yokulungiselela isizini elandelayo yokutshala.

Izinhlanga phecelezi *i-stover* zikabhekilanga ukudla okungenawo umsoco. Nakuba izinhlanga zinomsonco omncane, ngokuvamile ayasa-la amakhanda kabhekilanga emuva kwephrosesi yokukhombayina. La makhanda aqukethe iprotheni eningi kakhulu futhi awukudla okuno-msoco omkhulu ongadliwa yimfuyo. Abalimi abanangi baqoka ukudlisa imfuyo yabo okwesikhashana ize iwaqede onke amakhanda ngaphambi kokuba bazigawule izivithi zesilimo sikabhekilanga ezisele.

## UKUGAWULA IZINHLANGA ZIKABHEKILANGA

Abalimi bathanda ukugawula ngenhoso eklanyelwe ukugawula masinyane emva kokuthuthwa kwesivuno sisuswa ensimini. Izinhlanga ezomile, zephuka kangcono futhi zihlakazeke. Kodwa uma isilimo sivunwe izinhlanga zisemanzi, kungcona ukuthi uziyekele izinhlanga amaviki ambalwa ukuze zome. Lokhu kuzokwenzeka masinyane ngokwemvelo uma sekuvuniwe nezitshalo zisuke sezilimele emva kwenqubo yokukhombayina.

*Emva kokuvuna isilimo ubhekilanga, amasimu angaba yidlelo ngaphambi kokuba kugawulwe izinhlanga ukuze kuzokwenzive kube lula ukungiselela insimu isizini entsha.*  
Isithombe: U-Jenny Mathews

Abanye abalimi bayayeqa iphrosesi yokugawula futhi bangamane basebenzise *i-disc harrow* esindayo enhlabathini. Kodwa lokhu akuzigawuli izinhlanga ngendlela efanele futhi azephuki zibe ncane ngokwanele. Kungavimbela isisekelo sephrosesi yokulima ngaphambili kokutshala. Uma kushiywa izinhlanga ezinde zikabhekilanga ensimini, zingayibhajisa imishini efana ne-vibroflex noma amaripha kudaleke ukuma okungadingekile. Izindunduma zezinhlanga ezinqwabelene ensimini nazoziba yinkina ngesikhathi umlimi ezama ukwenza umbhede wembewu.

*Uma kushiywa izinhlanga ezinde zikabhekilanga ensimini, zingayibhajisa imishini efana.*



Olunye udaba oludinga ukubhekisiswa yizinga lokuhlasela kohkula ensimini kabhekilanga emva kokuvuna. Ngokuvamile uma zinile izimvula zakamuva (njengoba kwenzekile kule sizini ka-2021), ukhula lukhula ngamandla futhi luzinze kahle emasimini.

Uma sekuqedive ukuvuna, lolu khula ludinga ukuhlakulwa ngaphandle kwalokho luzoba normthelela omubi emazingeni omswakama enhlabathini. Lokhu kungaphinda futhi kwenze ukuthi kube nzima ukwenza amalungise-lelo asebusika enhlabathi futhi kwande ibhange lembewu kulawo masimu.

Ukwelashwa kohkula ngokuvamile kwenziwa yiphrogremu yokufutha ebusika noma okungenani kwenziwe iphrosesi yokudiskha kufanele ilandele emuva kokuba sezigawuliwe izinhlanga. Ukulawulwa kohkula kabalulekile ezigabeni zonke zomjikelezo wempilo yensimu. ■

**U-JENNY MATHEWS,  
UNGOTI WEZOKUPHATHA  
NENTUTHUKO NOKUFUNDISA**



# Thola okuningi ENHLABATHINI YAKHO

**U**KWENZA AMASAMPULI YISISEKELO SEZINCOMO E-SIKHULU SOMANYOLO NOMCAKO PHECELEZI L/ME. INHLOSO EBALULEKILE YEPHROGRAMU YOMCAKO NEKAMANYOLO UKULUNGISA IMIKHAWULO YEKHEDIKHALI YENHLABATHI NGENDLELA ESEBENA KAKHULU NEYONGAYO UKUZE UKHIQIZE KAKHULU.

Ngamandla enhlabathi, ukwenza amasampuli enhlabathi kanye nama-lebu ahlaziya imiphumela yamanyuthriyenti kuyaziwa ukuthi kungenze-ka kunqume ukusebenzisa kakhulu iprogramu yomcako nomanyolo. Uma amasampula enhlabathi angenziwanga ngendlela umphumela ngeke ukhombise isimo esisenhlabathini ngakho ke isivuno esiphezelu ngeke sifinyeleleke.

Ngenxa yokubhenda kokufakwa kukamanyolo nangendlela olima ngayo ngokuvamile awuhlanganisi umanyolo ngendlela efanele ne-nhlabathi yonke, amanyuthriyenti ngokuvamile awasabalalisiwe enhlabathini yonke. Ngakho ke kubalulekile ukuthi unakekele amasampuli enhlabathi ngokufanele.

Izindlela zokuthatha amasampuli enhlabathi zingaphezulu kwe-yodwa futhi kubalulekile ukuxoxa ngalokhu nomdayisi kamanyolo ngaphambi kokuthatha amasampuli.

**Indlela 1** kunconya ukuthi lapho kusabalaliswe amanyuthriyenti ne-simuncwana senhlabathi ngokungefani, ukwenza isibonelo enhlabathini engalinyiwe noma lapho amabhendi asele aseswe ngethileji hhayi ngo-kutshawa. Ngokwejwayelekile le ndlela ngeke isetshenziswe.

Okungaphansi kuka-50 ha noma yikuphi u-20 kuya ku-40 topsoil (0 - 150 mm) i-sub-samples kuyadingeka. Sebenzisa u-75 mm diameter soil auger. I-sub-samples yokwenyusa u-(150 – 300 mm, no-300 mm 600 mm) okuthathwa noma yikanjani endaweni efanayo kwanele. Uma kudingeka ukhla ziya inayithrojini, amasampuli ahlukile kodwa asingili yesampuli ithathwe ku-0-600 mm ukudepha, kufanele kuthathwe.

**Indlela 2** isetshenziswa kakhulu ngezikhati futhi kunconya izimo lapho amanyuthriyenti asele kanye ne simuncwana senhlabathi

## IZINDLELA ZOKUTHATHA AMASAMPULI ENHLABATHI

I-Handbook kaManyolo phecelezi (*The Fertiliser Handbook*) inikeza umhlahlandlela omuhle wezindlela zokuthatha amasampuli enhlabathi. Ezinye izibonakalo ezibalulekile ziqhakambisiwe lapha:

**1** Ukuhlaziya kwenhlabathi ngokwethembeka kuncike ekutheni amasampuli enhlabathi athathwe kanjani ensimini.

**2** Uma insimu iqukethe okungaphezulu kohlobo lwenhlabathi eyodwa, isampuli yenhlabathi kufanele ithathwe ohlotsheni lomhlabathi ngalunye ngenxa yokuthi amandla esivuno ingahlukana phakathi kwezinhlubo zenhlabathi.

**3** Amasampuli e-*Topsoil* ne-*sub soil* kufanele athathwe. Isampuli ye-*Topsoil* ithathwa kusukela ku-0 kuye ku-150 mm kanye namasapuli e-*sub soil* kusukela ku-150 kuye ku-600 mm.

**4** Isampuli eyodwa emele onke ama-50 ha kufanele anele, kodwa amasapuli amanangi angcono.

**5** Isampuli ngayinye kufanele iqukathe okungenani ama-*sub sample* angama-20 othathwe noma yikuphi kuyunithi yenhlabathi noma uhlobo lwenhlabathi.

**6** Ama-Sub-sampuli kufanele ihlanganiswe kahle ngaphambi kokuba kuthathwe isampuli.

**7** Asikhiso isidingo sokuthatha ama-*sub-samples* angaphezulu kwaysihlanu kuyunithi yomhlaba ngayinye uma i-*sub-soils* isampuliwe.

**8** Uma kunendlela ye-precision farming yamasampuli athathiwe ku-predetermined grid, enhlabathi ngokwehlukana isampuli eyodwa ku-5 ha kuzokwenela, kodwa ngokwejwayelekile isampuli eyodwa i-ihektha ngalinye noma amabili kuyadingeka.

**9** Ukwenza amasampuli ngobuhlakan yinqubo lapho izindawo ezithize zihlonziwe okungathathwa kuzo amasampuli ukhlolola izinkinga ezithile. Imifanekiso yamasethelaythi, imonitha yedatha yesivuno kanye nokuhola fizikhali kuyasetshenziswa ukukhetha izindawo zokuthatha amasampuli.



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## Izifundo zokuHLOMISA abalimi bethu

**UKUQEQUESA** uhlangothi olubalulekile emsebenzini esiwenzayo. Kube yinselelo uku-qalisa iprogramu yethu yokuqequesha njengoba kuhleliwe, kodwa sikwenzile lokho ngokunciphisa izibalo futhi sasebenzisa imigudu efanele ezindaweni. Ukubhalansisa ithiyori kanye nezifundo eziphathetekayo zolwazi, izifundo zibanelwa ngaphakathi nangaphandle. Isifundo eseyi-avareji sithatha izinsuku ezingaphezulu kwezinhanlu futhi saphethwa ngesivivinyo. Abafundi abaphumelele bathola isitifiketi.

Lezi zifundo eziyisishiyagalombili zenziwa ngo-Ephreli – zonke zazixhaswe yi-*Maize Trust*:

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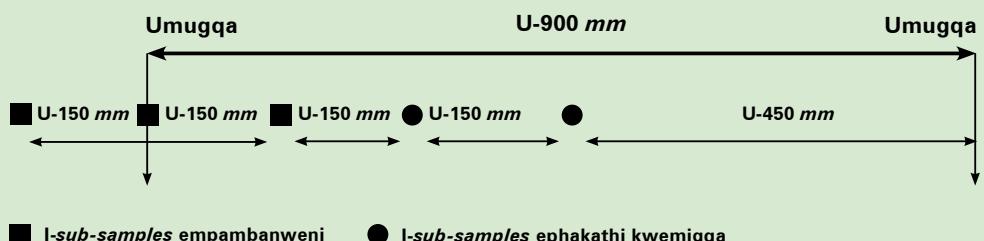
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## Thola okuningi...

1

indlela yokwenza amasapuli enhlabathi ngokwesimo sama nyuthriyenti asele kanye nesimuncwana senhlabathi akusabalaliswa ngohlobo olulodwa.



Umthombo: I-Maize information Guide, ARC

engasabalaliswa ngokufanayo. Ngokwejwayelekile lokhu kuzokuba ngemuva kokuvuna nangaphambi komsebenzi woquala wokuthila osewenziwe.

Le ndlela iseberna kakhulu ezindaweni ezikhqiza okusanhlavu, njengoba omanyolo abanangi abhendelwa ekutshalen futhi ngokuvamile kulandeliswa ngomanyolo i-N top-dressing. Izindlela zomcako osipesheli kufanelwe ubekwe kahle kusenesikhathi esanele ngomsebenzi wokujala wokuthila. I-oda likamanyolo kungabekwa kamuva kodwa ukhumbule ukuthi i-oda elitholakele kuqala lizodilivwa kuqala. (Indlela 2 ishiclelwu ku-Maize Information Guide).

Amasampula ameles ka-300 mm ibhendi ebanzi emiggeni yommbila kuhlaziwe ngokwehlukile kusukela kumasampuli emigqa, njengoba kuchaziwe kusho ububanzi bomugqa ka-900 mm **kufiga 1**.

Asewonke amasampuli ayi-5 athathwe eziphambanweni ezintathu zemogqa namabili phakathi kwemigqa.

**I-Cross row sub-samples** (■): Amasampuli amathathu athathwa lapho kuphambene khona emigqa ukuze kuthi ibhendi likamanyolo lenziwe amasampuli. Amasampuli amathathu ameles ibhendi- ±300 mm.

**Phakathi kwemigqa i-sub-samples** (●): Amasampuli amabili athathwe kule ndawo. Isampuli eyodwa ithathwe ngqo phakathi kwemigqa emibili ku- (450 mm ububanzi bemigqa buka-900 mm). Isampuli yesibili yenhlabathi ithathwe ngqo phakathi lapho kuphambana khona imigqa i-sub-samples

(■) kanye ne-sub-sample ephakathi kwemigqa ephambanayo (●) - u-300 mm ukusuka emgqeni wesitshalo esukela ebubanzini bomugqa ongu-900 mm.

Qinisekisa ukuthi isampuli ithathwa ngethulusi elifanayo. Ukudepha kwenqube-keliselo kuyafana njengendlela yasekuqalen, okungukuthi 0 - 150 mm, 150 mm - 300 mm no-300 mm - 600 mm. Inqubo yokwenza amasampuli iphindwa izikhathi eziyisihlanu ngeyunithi yenhlabathi ka-50 ha. Isihlanu 0 - 150 mm wamasampuli ahlanganiswa ngokwanele bese ecashunwa kuleyo ngxube amasampuli ayohlaziwa. Kulandelwa inqubo efanayo ka-150 mm - 300 mm namasampuli ka-300 mm - 600 mm.

Amasampuli enhlabathi kufanele aphathwe ngendlela efanele futhi omiswe ngomoya noma enziwe iqwa uma kufuneka ukuthi ukuhlaziywe I-N futhi amasampuli ngeke adilivwe elebhu emahoreni angu-24. Akufanele ukuba amasampuli ebekwe ngqo elangeni nangephutha. Isisindo senhlabathi phakathi kuka-500 g no-1 kg siyadinge ka-300 ngayinye ukuze kuhlaziywe.

Uma ufuna iminingwane thintana no-Pietman Botha ku-082 759 2991 noma umdayisi kamanyolo oseduze nawe.

U-PIETMAN BOTHA,  
UMELULEKI OZIMELE  
KWEZOLIMO

