

PULA IMVULA

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IMAGAZINI YAKWAGRAIN SA YOPHUHLISO LWABAVELISI



Iqela labalimi laseMakukhanye Mncebha belichwayite kakhulu kukufumana imbewu neekhemikhali zalo.

BALA IINDLEKO ukuze ufumane inzuzo

KUFUNeka UMLIMI NGAMNYE ABALe NGOKUQAPHELA UKUZE AFUMANISE UKUBA ZEZIPHI IIMVELISO ZAMALUNGISELELO EZIFUNeka KWIXESHA LOKULIMA, NGOKWENZA NJALO UNOKUTHELEKISA IINDLEKO ZAKHO EKUGQIBELENI 'NEMBUYISELO' KWISITYALO FUTHI UHLALUTYE UKUBA INGABA ESI SENZO BESINEMFEZEKO NENZUZO NA NGENDLELA ETHILE – NOKUBA ISEMALINI ESEBHANKINI OKANYE EKUTYENI OKUGCINWE KUVIMBA.

Kaninzi abalimi abasuka kwixesha lokulima elithile baze bangene kwelilandelayo bezimisele kangangoko ukwenza abakwaziyo kodwa bengazibali ngononophelo iindleko zabo ukuze bafumanise ukuba ingaba imizamo yabo ibinenzuzo na, okanye ukufumanisa ukuba ingaba kukho into ebifanele ukwenziwa ngendlela encomekayo na ukuze banciphise iindleko.

Umlimi ngamnye uneseti yeemeko ezizezakhe kanti ingulowo ufanele ukuqwalasela umfanekiso omkhulu ukuze abale iindleko ezifumaneke xa bekuqhutywa iiprojekthi zokufama ezahluka-hlukileyo. Umsebenzi ngamnye wokufama owahlukileyo mawubalwe wandule ukuhlalutya njengomsebenzi wokufama ngokubanzi.

UCWANGCISELO LOHLAHLOMALI

Iintlobo zohlahlomali ziyindlela nje ecwangciselwayo yokwenza amalungiselelo ayimfuneko eenkcukacha zoqoqosho akuncedisa ekwenzeni

izigqibo ngeshishini. Iintlobo zohlahlomali lwamashishini ezidwelisa iirisithi zempahla ethengiweyo, iindleko kunye neembuyiselo ezizizo ngemveliso enye zilucwangciselelo olusisiseko nesixhobo sohlalutyo esidingwa lishishini ngalinye.

Bathi, 'Ukwenza imilinganiselo kukwazi'. Iindleko zemveliso yombona neembuyiselo ngehektare nganye elinyiweyo mazilinganiselwe. Umsebenzi ngamnye wokufama unokubalelwa iindleko zawo ngokuhlalutya **iindleko eziguququkayo nezisisigxina**.

Iindleko ezisisigxina ziindleko ezisoloko zifana nokuba yintoni imveliso. Imizekelo iquka zonke iintlawulo zomhlaba nezinye iintlawulo zokurentela ukuqeshiselwa, izakhiwo, imivuzo yabasebenzi abasisigxina, ii-inshorensi, iirhafu zempahla, iindleko zenzala ukuba unezivumelwano ezisaqhubekayo zokuthenga ngetyala okanye iimalimboleko, ukwehla kwexabiso lemali – kuba liya kwehla ixabiso lesithuthi ngasinye onaso ngonyaka ngamnye – ukukhanda nolonolozo kunye nezinto ezithile ezinokuba ziyasetyenziswa ezifana nombane kunye namanzi.

Iimveliso zamalungiselelo okusebenza ngonyaka singatsho ukuba zicace gca. Ziimveliso zamalungiselelo 'zonyaka' kuba njengoko zingafani nokuthenga itrektara okanye umatshini wokutyala osetyenziswa kwiminyaka emininzi, zona zisetyenziswa ziphele kunyaka ngamnye zize zithengwe kwakhona kwixesha elitsha lokulima. Malunga nomlimi weenoko zona ziquka iindleko ezifana nezekalika, izichumiso, iikhemikhali zokhula nezezinzambuzane ezonakalisa izityalo, imbewu, amanzi okunkcenkeshela,

Lawula ubuasidi bomhlaba NGEKALIKA

UUKULINYWA KOMBONA NGUMSEBENZI WEMI BANDELA ELIQELA EFANA NEMOZULU, UKU-FAKWA KWEZICHUMISO, UBUASIDI NOKULIMA. UBUASIDIBUFUNYANISWANGEENKCUKACHAZE ESAMPULUZEMIHLABABUZE BUBONAKALEKWI-INTLOBO ZOFUNDONZULU NGEENKCAZO EZIMALUNGA NO MHLABA. UKULINYWA KOMBONA KUPHAZAMISEKA KU PHELA XA KUKHO AMAQONDO ETYHEFU YEZIQALELO ZE NDALO EZIFANA NEALUMINIUM (AL) KUNYE NEMANGANE SE (MN) KUNGAKHATHALISEKI UKUBA I-PH ISEZANTSI KANGAKANANI NA.

Ubutyhefu obubangelwa yialuminium ubukhulu becala bunxulunyaniswa nobuasidi bomhlaba, kanti ubutyhefu bemanganese abufane bunxulunyaniswe nobuasidi bomhlaba, nangona zombini ezi ndlela zokutyhefeka zinokwenzeka ngaxeshanye, ngamanye amaxesha. Ingozi ngobutyhefu beAl emboneni ifumaneka kuphela xa ipH (KCl) inganeno kwi-4,5 okanye i-pH (H₂O) inganeno kwi 5,5. Ubutyhefu beAl bufunyaniswa ngolwalamano lweAl nehydrogen (H) ukuya kwiiyoni ziphelele zepotassium (K), icalcium (Ca), imagnesium (Mg). Olu lwalamano lubalulwa ngokwepesenti, kwaye lwaziwa njengelona qondo liphezulu leasidi.

Ziya kwanda ilahleko zezivuno ngokunyuka kweqondo elilelona liphezulu lobuasidi elingaphezu kwama 20%, njengoko ukufu nxeka kwamanzi nezondlo kuthinteleka. Akulindelekanga sivuno seenkoko sikwiqondo elilelona liphezulu leasidi kangange 80%. Phantsi kweemeko apho ubutyhefu beAl nobeMn busenzeka khona, ubutyhefu beMn buya kudumazeka xa imihlaba ilawulwa ngeqondo elilelona phezulu leasidi elinganeno kuma 20%.

Ikalika isetyenziselwa ukulungisa i-pH namaqondo angawona aphezulu easidi. Imfuneko yekalika ijoliswa kufikelele lwamaqondo easidi aphakathi kwe 0 ne 15% ukuze kubekho uthintelo lokubuyelela kweasidi nobutyhefu beAl.

Ulawulo lobuphezulu beasidi enganeno kwi 15%, lufanele ukwqwalaselwa ngocoselelo. Ukufakwa kwekalika, ngaphezu kwemfuneko, ngenjongo yokuthoba iasidi ukuya ku 0%, umzekelo, yinkqubo eneendleko eziphezulu.

Nangona kunjalo, kubalulekile ukufumanisa ukuba ubuasidi bunendima ukufikelela kubunzulu obungakanani emhlabeni kwaye bufanele ukudunyazwa ukufikelela kubunzulu obungakanani phambi kokubalwa kweqondo lekalika nelegypsum.

UDIDI LWEKALIKA

Udidi lwekalika luquka imibandela efana nale:

- Ulinganiselo lwecalium carbonate (CCE) kwihydrochloric asidi (HCl);
- iCCE kwiresin (umgaqo weRh);
- ubukhulu bengqalutyana; kananjalo
- i-pH (KCl).

Ukudunyazwa kweasidi yomhlaba phantsi kweemeko zamasimi aku-phenjelelwa ngala maxabiso xa ezihambela odwa, kodwa ngokusebenzisana kuphela, ngokongqinelaniso lwemathematika kuquka yonke imibandela. Nangona kunjalo, iintlobo zekalika ezineCCE (HCl), iCCE (Rh), inxalenye eyiyona inkulu yeengqalutyana ezicolekileyo kunye neyona pH (KCl) iphezulu yeyona ifaneleke ekudunyazweni kobu asidi bomhlaba phantsi kweemeko zamasimi. Vavanya ikalika yakho ngokwale mibandela ngokunjalo neendleko zokuyisa kwifama yakho.

UHLOBO LWEKALIKA

Ikalika zohlobo lwedolomitic nolwecalitic ziyafumaneka kwiindawo zentengiso. Imeko yeMg yomhlaba yiyo eya kwalatha ukuba kufuneka eyiphi. Ikalika eDolomitic iyacetyiswa xa kuthelekiswa nekalika ecalitic xa imeko yeMg yomhlaba inganeno apha (<40 mg kg⁻¹) okanye iphantsi xa kuthelekiswa nemeko yeCa, ngaphandle kokuba isidingo seMg sinokuhlangatyezwa ngokusebenzisa izichumiso eziqulethe iMg.

ISIDINGO SEKALIKA NOKUFakwa KWAYO

Ukufama ngokuchanekileyo kuko okufanele ukulandelwa kwixesha elizayo kwaye yeyona ndlela ifezekileyo yokufaka ikalika. Oku kungenzeka kuphela xa iisampulu zemihlaba zithathwa kakuhle ngokunjalo nekalika ifakwe ngokuchanekileyo. Iindleko zithi kratya, kodwa imbuyiselo kutyalomali iyancomeka. Entsimini kungacetyiswa ikalika edolomitic necalitic zize zifakwe ngokuchaneka kokukalika. Inkoliso yemithombo yekalika neyegypsum idwelisiwe kwisiKhokelo seeNkoko saseGrain SA. KwisiKhokelo saseARC-GCI seeNkcukacha ngoMbona kukho iingcebiso ngekalika ngokweenguquko ezifunekayo zamaqondo aphezulu easidi, kuchazwa nesakhono somhlaba sotshintshiselwano ngeeyoni ezizication ngokunjalo nodidi lwemithombo ethile yekalika enokufumaneka.

Ixabiso lekalika, iindleko zothutho, iindleko zoqakaniselo lomhlaba kunye nesiqulatho sokufuma sekalika zifanele ukuthathelwa ingqalelo. Umthetho weNombolo yama-36 we-1947 umisela ukuba i 100% yeengqalutyana zekalika yesiqhelo ifanele ukuba yi <1 700 µm kunye nama 50% <250 µm. Malunga nekalika ecolekileyo, ama 95% eengqalutyana



mawabe ngama <250 µm nama 80% <106 µm. Umlinganiselo ongowona mncinane uvumelekileyo wecalcium carbonate ngazo zombini ezi ntlobo zekalika (CCE [KCI]) ngama 70%. Thelekisa iinkcukacha zobugcisa zemithombo yekalika eyahluka-hlukileyo uze wenze isigqibo ngemali.

Kudingeka isixhobo sokusasaza ikalika esinemilinganiselo efanelekileyo. Ukuba ikalika ifakwa ngokwamaqondo angafaniyo ngesixhobo esichanekileyo kudingeka iimephu eziyimfuneko kunye neenkukacha ngokunjao. Ngaphandle kodidi, ukusebenza kwekalika emhlabeni kuxhomekeke kakhulu ekuyidibaniseni ngocoselelo ikalika nomhlaba. Oku kuphunyezwa ngokuqala ngokuwukrazula, kulandele ukuwulima okanye ukuwukrazula okunzulu umhlaba. Ukuba kuyenze-ka, ikalika ifanele ukufakwa ize isetyenzwe kwiinyanga ezimbini obona buncinane phambi kokutyala ukuqinisekisa ukuba ikalika isebenza ngokupheleleyo xa kutyala.

Ukufaka ikalika ngemicu nako kungenziwa ukuba bekuchongwe ubuasidi bemicu xa bekuthathwe iisampulu zomhlaba. Kubalulekile ukuyifaka kwimicu efanelekileyo ikalika. Ukuba kusetyenziswa imigaqo yolawulo lwemizila esisigxina inokuba yeminye. Ikalika ifanele ukufakwa kabini ngenyanga obona buncinane phambi kokutyala kumcu wama-300 mm phezu komqolo ize idityanise emhlabeni.

UBUASIDI OBUSEZANTSI EMHLABENI

Ubuasidi obusezantsi emhlabeni yingxaki ekhulayo kanti ikalika inganceda xa inokufikelela emhlabeni osezantsi. Ukusebenzisa oomatshini abayifaka enzulwini ikalika – oko kuquka abaqhelaniselwe ukukrazula umhlaba okanye ukulima okunzulu – kuyancomeka nangona kuneendleko eziphezulu. Kungasetyenziswa ukufaka igypsum, kodwa xoxa ngalo msebenzi nabathengisi bakho bekalika. Igypsum ibuyisela iMg ukususela kumphezulu womhlaba osezantsi kanti ikalika edolomitic ke ngoko ifanele ukufakwa ne-gypsum ukuze kubuyiselwe iMg yomhlaba ophezulu. Igypsum iza kudinga ixesha lokulima elinye okanye amabini phambi kokufikelela emhlabeni osezantsi, ngoko ke, ukuhlanganiselwa kwekalika enzulwini kukholisa ukuba sisombululo esikhawulezayo.

IFUTHE LOKUFAKA IKALIKA KWIKHEMIKHALI YOKHULA ESEMHLABENI

Kubalulekile ukuqonda ukuba ikalika iya kuba nefuthe kwikhemikhali yokhula esemhlabeni. Ezinye iikhemikhali zokhula ezikhoyo ziya konakalisa izityalo. Kubalulekile ukuxoxa ngenkqubo yokufaka ikalika nabathengisi bembewu kunye nabezichumiso. Izityalo ezifana nojongilanga, iimboty ezomileyo okanye zesoya zinokuchaphazeleka kakubi ngenxa yekalika ethatha indawo yeengqakumbana zekhemikhali yokhula.

Ngeenkukacha ezithe vetshe, isiKhokelo saseARC-Grain Crops seeNkcukacha ngoMbona, isikhokelo seeNkozo saseGrain SA kunye neNcwadana yaseFERTASA yeziChumiso ungazifunda. Abathengisi bezichumiso kwindawo yakho nabo bangakunceda ngeenkukacha. ■



**PIETMAN BOTHA,
UMCEBISI OZIME-
LEYO KWEZOLIMO**



AMAZWI AVELA...

*Du Toit (Thabo)
van der Westhuizen*

KWELI BANGA UNINZI LWETHU SELUZA KUGQIBA NGENKQUBO YOKUVUNA. KUFUMANEKE ISIVUNO ESIKHULU KWAYE ABANINZI BETHU BAFUNA UKUZIPHILISA KAMNANDI OKUNGU MVUZO WOMSEBENZI ONCOMEKAYO. NDIYAZI UKUBA THINA BALIMI SIFUNA UKUBA NETHUBA LOKUPHUMLA NJENGOKO ISIVUNO SISIHLE, KODWA ASINGONYAKA WOKUPHUMLA LO.

Ndakhe ndadibana nendoda eyathi kunyaka wobunzima umntu ufanele ukubopha ibhanti, kodwa ngonyaka omhle ufanele ukuliqinisa ngakumbi ibhanti. Andithethi ngoku-ziphilisa kamnandi kancinane nje. Kulumkele ukuchitha imali kwizinto ozifunayo – kubhetele uchithe imali kwizinto ongenakuphila ngaphandle kwazo.

Kweli xesha lokulima sibone izivuno ezihle namaxabiso amahle kwaye kubaluleke kakhulu ukusebenzisa eli thuba ekuyichitheni ngobulumko imali futhi uyisebenzise ekuphuculeni ishishini lakho lokufama, kunokufane uyichithe nanjani.

Imali esesandleni inika abalimi ithuba elifezekileyo lokwenza ulondolozo oluyimfuneko loomatshini bokusebenza – obelungenziwa kakuhle kwithuba elidlulileyo ngenxa yokunqaba kwemali.

Chitha imali ekulungiseni imeko yokuchuma komhlaba wakho njengokufaka ikalika nokufakela iphosphate kunye nezinye izichumiso ezifuneka emhlabeni wakho. Khumbula ukuba nokuba besinjani isivuno ufanele ukuwusebenza umhlaba wakho. Musa ukuwuxoxa umhlaba wakho. Umhlaba ochumileyo yenye yeyona mpahla yexabiso ebalulekileyo yomlimi. Usenokuba nabona matshini baphucukileyo kunye neemvula ezizezona zintle, kodwa ukuba umhlaba awuchumanga, akusayi kuphinda ufumane isivuno sihle kwakhona.

Ukuba unemali esecaleni yiba namashishini okufama ahluke-hlukileyo kunye neeyunithi ezongezelelweyo zokufama ukuze unike inkxaso ngakumbi kumququqelo wemali esesandleni. ■

Uhlalutyo lomhlaba lukunceda ekwenzeni isicwangciso sexesha elilandelayo

UKUHLALUTYA UMHLABA SESINYE SEZIXHOBO EZIFUMANEKA KUBALIMI UKUZE BAPHUCULE IZIVUNO ZEZITYALO EMASIMINI ABO OKUFAMA. UHLALUTYO LUYA KUBONISA IMEKO YANGOKU NOLUNGELELWANISO LWEZONDLO EZIFUMANEKA KWIZITYALO ENTSIMINI OKANYE XA LWENZIWE EMVA KOKUVUNA KULUNGISELELWE EZO ZIFANELE UKULINYWA KWIXESHA ELIZAYO.

Uhlalutyo lomhlaba lubalulekile ukuze kwenziwe ucwangciso oluchanekileyo nohlahlomali ngokunjalo ukwenzela inkqubo yokufakwa kwezichumiso eziza kusetyenziselwa isityalo esilandelayo kumjikelo wokulima.

Kwinjongo yokufumana ezona zityalo eziinkozo ezininzi nezinezuzo, kufuneka kuqwalaselwe neminye imibandela efana nemozulu egqubayo kwibloko ethile yentsimi, umyinge wemvula ofunyanwa ngonyaka, ubunzulu beengcambu obuncomekayo, ulwakhiwo lomhlaba, nokuhlelwa, imigaqo yokulima, ubukho bazo naziphi izithintelo zokukhula kweengcambu okufanelekileyo ezingabambekiyo nezibambekayo, ubunzulu bokulima emhlabeni ngokubanzi kunye nokuchuma.



Iinkqubo zangaphambili zokufakwa kwesichumiso zifanele ukuvavanywa ngokwefuthe lazo kwizivuno ezifunyenweyo. Isixa sezondlo ezahluka-hlukileyo ezisetyenziswayo, ezifakwa njengezichumiso, zifanele ukwenzelwa 'imilinganiselo' okanye zithelekiswe neemvavanyo zomhlaba zangaphambili, isivuno ekujoliswe kuso, iingcebiso ngezichumiso, izichumiso ezifakwa xa kutyalwa ngokunjalo nomaleko osecaleni owongezelelwa kwizivuno ezifunyenweyo. Olu hlalutyo luya kubonisa ukuba ingaba bezanele na izondlo zomhlaba ebezikhona okanye akunjalo. Ukuba akunjalo, amaqondo ezichumiso ezondlo ezifanelekileyo anokwandiswa ukwenzela isityalo esilandelayo.

IZIZATHU ZOKUHLALUTYA KOMHLABA

Uhlalutyo lomhlaba luya kubonisa indlela athelekiswa ngayo amaqondo okuchuma alinganiswayo ukwenzela izondlo zezityalo ezahluka-hlukileyo noluhlu lwamaqondo amkelekileyo angaziwa kakuhle okanye awaziwayo ezivuno zezityalo nafanele ukungqinelaniswa nesakhono somhlaba. Izikhokelo malunga nokuphumeza oku kwimihlaba eyahluka-hlukileyo nenezakhono zezivuno ezahluka-hlukileyo sezisaziwa noko, enyanisweni, izichumiso zeekhemikhali sezisetyenziswe kwithuba elingaphaya kweminyaka engama-70 kuwo wonke uMzantsi Afrika.

Kubalulekile ukuhlalutya esona sakhono siphezulu sezityalo zohlobo oluthile lomhlaba nobunzulu bawo. Umhlaba 'iBainsvlei' onobunzulu bomhlaba ongaphezulu be-1,5 m ngaphezu kweqondo lodongwe, mhlawumbi unganesakho esiphezulu seetoni ezi-6 zombona ngehektare. Oku akunakuthelekiswa 'neWestleigh' ye-0,6 m yodongwe onesakhono sesivuno seetoni ezi-3,5 ngehektare ukuya kwiitoni ezi-4,5 ngehektare. Umhlaba ongaphucukanga malunga nobunzulu okwindawo yeemvula ezinkulu unganako nawo ukukhupha umyinge weetoni ezi-5 ngehektare ukuya kwiitoni ezi-6 ngehektare. Lo mhlaba ke ngoko ungadinga isixa esifanayo sezondlo ezikhoyo.

Kwakuba kufunyaniswe umgqaliselo wemveliso yentsimi, kungasetyenziswa iziphumo zohlalutyo lomhlaba ukuze kwenziwe isicwangciso

seqondo lezondlo zesichumiso elinokufakwa. Ngaphandle kokuba kubonakele kwiingxelo zemveliso yefama zangaphambili okanye kumava ukuba ukufaka ikalika ngenjongo yokufumana izivuno ezizezona zininzi, kuyasebenza, kukholisa ukuba bubulumko ngokwasemalini ukusebenzisa isichumiso kuphela malunga nezivuno ezingumyinge wethuba elide. Kunyaka wemvula entle apho amathuba okwakha isichumiso emade khona kubonakele ukuba izivuno ziqhele ukuba phezulu.

Uhlalutyo lomhlaba lubonisa ulungelelwano lwezondlo emhlabeni, kodwa ingesiso isakhono sesivuno esinokubakho ngokuthathe-la ingqalelo yonke imibandela ekuxoxwe ngayo ngasentla. Iziphumo zohlalutyo zomhlaba zifanele ukuvavanywa ngokwale meko eku-bhekiselelwe kuyo ukuze kufakwe esona sixa sifanelekileyo kwisityalo esilandelayo.

IMIBANDELA OKANYE IINXALENYE ZOKUHLALUTYO LWEMIHLABA

Iziphumo zohlalutyo lomhlaba zikhulisa ukubonisa, awona maqondo aphantsi, amaqondo e-pH okanye easidi nokuba ilinganiselwa emanzi okanye kwipotassium chloride, iphosphate (P), ipotassium (K), icalcium (Ca), imagnesium (Mg) nesodium (Na) – zonke nge-mg/kg, ngokunjalo nolwalamano lweCa/Mg, iCa neMg ziphelele luze lwahlulwe ngolwalamano lweK, utshintshiselwano lweeyoni zee-cation okanye amaqondo ezondlo ezikhoyo nesiqulatho sodongwe, amaqondo ezinc, isulphur (S) nepesenti yecarbon ukuba luceliwe.

Wakuba uzifumene iziphumo zakho zohlalutyo zemihlaba eyahluka-hlukileyo kunye nezakhono zezivuno ezingafaniyo, amaqondo anokuthelekiswa neziqhele ezamkelekileyo.

I-phosphate

Iziqhele ezamkelekileyo malunga nephosphate (P) zihlelwa ngokulandelayo:

- Eziphantsi: Ezinganeno kwi (<) 15 iinxalenye ngesigidi (ppm).
- Eziphakathi: 15 ppm - 25 ppm.
- Eziphakathi ukuya phezulu: 25 ppm - 35 ppm.
- Eziphezulu kunama- (>) 35 ppm.

Iqondo elaneleyo lephosphate ngama-25 ppm.

Ezi ziqhele malunga nazo zonke ezinye izondlo zikhulisa ukuboniswa kwifomu yeziphumo zohlalutyo. Amaqondo afunekayo ezichumiso anokubalwa ngokuwaseka kwiithyibhile ezibonisa ukufunxeka okanye izidingo zezondlo zezityalo kumaqondo ahluka-hlukileyo ezivuno.

I-nitrogen

Ungaba nobonelelo lwama-20 kg ukuya kuma- 25 kg enitrogen(N) ngetoni yesivuno somgqaliselo wesityalo sakho ngehektare ngaphezu kweengcebiso ezimalunga neP kunye neK kwinkqubo yokufakwa kwezichumiso.

Zidibanise nomlimi onamava okanye ingcali kwezemihlaba ukuqinisekisa naziphi iingcebiso malunga nokufakwa kwezichumiso ngokusebenzisa iziphumo zohlalutyo lwemihlaba yakho. ■



**RICHARD MCPHERSON,
UMCEBISI NGOLAWULO LOSHISHINO
LOLIMO NEEPROJEKTHI**

Bala iindleko...

abasebenzi, amafutha okubasela ngokunjalo neendleko zokuqesha oomatshini, izixhobo zokusebenza nokukhanda kunye nohlahlomali lolondolozo. Iindleko zezi nguquququko zixhomekeka kumaxabiso asezingisweni ukususela kwixesha elithile ukuya kwelilandelayo. Ezi mveliso zamalungselelo zisenokuguquka kwinkqubo yomsebenzi wemveliso ukuze kubekho iinguquko kwisivuno.

linkcukacha ezixhasa uhlahlomali

Ucwangciso lohlahlomali kwakhona lufanele ukuquka isivuno esinokubakho kunye neziphumo zengeniso olindele ukuziphumeza ngokweminye yamaxesha okulima adlulileyo.

- Yintoni umyinge wesivuno seetoni ngehektare kwindawo yakho?
- Yintoni ixabiso langoku lombona ngokweeRandi ngekilogram?
- Singakanani isivuno esicingeleka kwangaphambili sexesha elizayo okulima?
- Ingaba ungakwazi ukufumanisa imizila yamaxabiso exesha lokulima elizayo?

Ukuziqhelanisa nokuzoba uhlahlomali

Qala ekuqaleni ngokuzoba uhlahlomali olunokusebenza malunga neemveliso zamalungiselelo ezingqalileyo ngokuziseka kwihektare enye. Lungalindeleka ukukhangeleka ngale ndlela:

Imveliso zamalungiselelo ezingqalileyo	Ixabiso ngehektare	Ihektare ziphelele	Iindleko ziphelele
Ikalika			
Isichumiso			
Imbewu			
likhemikhali zokhula			
likhemikhali zezinambuzane			
Amafutha okubasela neOyile			

Eminye imibuzo umlimi afanele ukuyibiza nokuyibhala malunga nocwangciso lohlahlomali oluchanekileyo:

- **Ukufikelela emhlabeni:** Ingaba ndifanele ukuhlawula irenti yomhlaba okanye iirhafu?
- **Iintlawulo zokukhontraktha:** Ingaba ndinabo bonke oomatshini nezixhobo zokusebenza endizidingela ukwenza umsebenzi okanye ingaba kuza kufuneka ukuba ndiqeshe iikhontraktha okanye abanye abasebenzi?
- **Ulawulo lomhlaba:** Zingakanani iindleko endiza kuzihlawulela uhlalutyo lweesampulu zomhlaba? Ndiza kuyigalela njani ikalika nezichumiso.



Ndiya kuchitha malini ngala manyathelo? Ingaba ndiya kusebenzisa oomatshini okanye abasebenzi ukucoca amasimi?

- **Iindleko zokutshiza:** Ihapulasaka okanye isitshizi esoluliweyo? Yintoni inkqubo yam yokutshiza? Ndiinesicwangciso sokutshiza amasimi am kangaphi kweli xesha lokulima?
- **Iindleko zothutho:** Ndiya kuchitha malini ngokulanda nokusa iimveliso zamalungiselelo emasimini am (ngokunjalo nabasebenzi) xa ndivuna isityalo sam?
- **Iindleko zokuvuna:** Ndiza kuvuna njani? Ingaba ndiya kudinga abanye abasebenzi? Ndiza kuzigcina njani iinkozo? Ingaba ndiza kuba neendleko zokubhula, okanye ndiza kukhontraktha umatshini wokubhula uvuna? Zingakanani iindleko zamafutha okubasela?
- **Iindleko zabasebenzi:** Kuya kufuneka ndibahlawule nini abasebenzi – abasebenzi abasisigxina xa kuthelekiswa nabamaxesha athile? Ingaba ndidinga ukutya neempahla zokunxiba okanye izivatho zokhuseleko?
- **Ukukhanda nolondolozo:** Ingaba ndikholisa ukuchitha malini kwiinkonzo zokukhanda nezolondolozo ukuze ndigcine izithuthi zam noomatshini bekwimeko elungileyo yokusebenza?
- **Umbane:** Ingaba ndiza kusebenzisa umbane?
- **Amanzi:** Ingaba ndiza kuhlawulela amanzi nakweliphi ibanga?
- **Iindleko zokuphucula intengiso:** Ndiya kuhlawula malini xa ndisiza imveliso yam kwindawo yentengiso? Ingaba ndiya kudinga ubekelelo oluthile ngayo nantoni na? Ingaba ndineendleko zolondolozo? Zingakanani iindleko zothutho endinokuba nazo ukuze ndithuthule iinkozo zam eshedini okanye kwizisele zendawo yakho okanye kwindawo yokusila? Le yimibuzo nje embalwa yokuqinisekisa ukuba kuqokelelwe iinkcukacha ezichanekileyo. Isicwangciso sohlahlomali siqala ngocwangciso olwenzelwa ixesha elitsha okulima. Khumbula ukuba kubaluleke kakhulu **ukubala inkcitho nganye ngokuchanekileyo rhoqo** ngokunjalo ugcine iirisithi neengxelo zakho ngesenti nganye oyichithayo xa ulima isityalo. Kukwabalulekile ukwazi ukuba ingaba uyaliphucula na isishini lakho. Iinkcukacha ezichanekileyo ziyasixhobisa ukuze senze izigqibo eziphucukilryo ukwenzela ixesha elizayo. ■



JENNY MATHEWS,
INGCALI NOMHLOHI
WOLAWULO NOPHULISO



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5

ABAGQWESILEYO BACHAZA iimfihlelo zempumelelo yabo



NGONYAKA NGAMNYE I-GRAIN SA ISINGATHA UKHUTSHISWANO LWESIZWE LWEZIVUNO ZOMBONA, IIMBOTYI ZESOYA UJONGILANGA KWIINGINGQI EZAHLUKA-HLUKILEYO ZELIZWE. KUKHUTSHISWANO LWANGO-2020 KUBHENG-ZWE ABAGQWESILEYO ABANGAMA-46 NJENGOKO KUBHALIWE KWI-SA *GRAAN/GRAI/V* MAGAZINE KUDISEMBA NGO-2020/JANYUWARI 2021.

Phakathi kwabagqwesileyo abalishumi banikele ngeenkukacha ezinobucukubhede malunga nolawulo lwesityalo sabo. Ngokuqwalasela iinkukacha zabo ezinobucukubhede, kutsale umdla omkhulu ukufumanisa ukuba bonke bebesebenzisa imigaqo efanayo. Nangona kunjalo, ekusebenziseni kwabo le migaqo bekukhona ukwahluka-hluka ngenxa yokuba befama kwiingingqi ezahluka-hlukileyo – futhi bekukho noomahluko kwimozulu nemvula, imihlaba eyahlukileyo, ngokunjalo nokungafani kwemidla yabantu bekunendima nako.

ULAWULO NGOKUBANZI

Okukhanye kakhulu kukuba aba balimi balishumi **bebenenjongo** efanayo ngemveliso yabo izityalo: Ukuphucula imveliso ngonyaka nganye ukuze bakwazi ukufama befumana isakhono senzuzo nozinzo.

Okwesibini, **ulawulo lwexesha** lugxininisiwe. Konke kwenziwe ngexesha futhi belibanjwe ixesha. Oomatshini banikwe inkonzo yabo futhi bakhululwa ngexesha ukuze kuncitshiswe ukuchithwa kwexesha lokukhanda ngexesha lokulima. Imveliso zamalungiselelo zifumaneke ngexesha. Ukulungiswa komandlalo wezithole, ukutshatyalaliswa kokhula nezinzambuzane ezonakalisa izityalo konke oko kwenziwe ngexesha elifanelekileyo.

Malunga **nolawulo lokulima** bekukho ukujolisa kakhulu ekufumaneni iinkukacha ezifanelekileyo. Akukho nomlimi omnye kubo obeneentloni zokufumana iinkukacha ngaphaya kwefama yakhe ukuya kubaboneleli beenkonzo, kubamelwane, kubacebisi, kumaqela ofundonzulu okanye ebantwini abanolwazi. Kwiifama zabo bonke bebesebenza uphando lwabo bavavanye imihlanganisela yabo kunye nemigaqo yokulima eyahluka-hlukileyo.

Ukugcinwa kweengxelo kwenziwe ngocoselelo, kwaye bonke bebesebenzisa lo mgaqo: 'Ukuba akuyenzi imilinganiselo, akunakwazi ukulawula'. Yonke imiba yokulima iyalinganiswa. Bebeqokelela neenkukacha ezimalunga nemozulu njengoko bekusenzeka kwiifama zabo. Iingxelo ezikhoyo zimalunga nobushushu, imvula, isiqhelo somhla wemvula yokuqala, isiqhelo somhla weqabaka yokuqala, isehlo sesiphango njalo njalo. Malunga nale miba, oomatshini bobuchwepheshe bodidi oluphezulu abasetyenziswa ekufameni okuchanekileyo banendima ebalulekileyo. Ziyafumaneka zonke iinkukacha ngonyaka ngamnye kwaye kuthathelwa ingqalelo yokuba ingaba ukusebenza kungaphuculwa njani.

Malunga **nolawulo lwemali** kugcinwa ulawulo olungqongqo lweenleko zeemveliso zamalungiselelo. Imveliso zamagalelo zisetyenziswa ngokwesicwangciselelo nangokohlalomali kwaye bonke bayazazi iindleko zabo zeemveliso zamalungiselelo ngehektare nganye.

IZENZO ZOKUGQWESA

Kuqwalaselwa umhlaba ngohlobo olulodwa, ngentetho engqalileyo masithi **impilo yomhlaba** – imihlaba ihlula-hlulwa ngokweendawo zawo kuze kuthathwe iisampulu zemihlaba rhoqo ukuze kulungiselelwe ukusetyenziswa kwezichumiso. Bonke abalimi basebenzisa imigaqo yokuwuphazamisa umhlaba kancinane kangangoko kwaye

igcinwe igqunywe imihlaba. Iintsalela zezityalo kunye/okanye izityalo zokutshintsha zisetyenziswa ngaloo njongo. Ngoko ke, **ukufama ngokuhlaziya** kuxatyisiwe.

Malunga **nokufama okuchanekileyo** bebesebenzisa oomatshini bobuchwepheshe obuphezulu ngokubanzi ukuze batyale kubunzulu obuchanekileyo ngokwamanani ezityalo acwangciselweyo, ngokunjalo bafake izichumiso ngokokwahluka-hluka komhlaba nangokwezidingo zawo, bafake iikhemikhali zokhula nezezinzambuzane naxa kuvunwa. Ngexesha lokukhula kwezityalo ukusetyenziswa uhlatutyo lwamagqabi ukwalatha naziphi iintsilelo kunye nobukho bezifo obunokwenzeka.

Bonke bebesebenzisa **ujikeleziso lwezityalo** olufanele ubume obungqongwe nemihlaba yabo ukuze bafumane izivuno ezihle. Ukwahluka-hlukanisa ukuze kwande amashishini kunendima enkulu kwimpumelelo ngokubanzi yabo bagqwesileyo.

ISIPHELO

Yintoni onokuyifunda kokuchaziweyo ukwenzela ifama yakho, nokuba ufama kwihektare enye okanye kwiihektare eziliwaka? Khumbula ukuba iinkxasomali ezifumanekayo, amava abantu ngabanye kunye nezakhono zabo ziya kuba nendima kangangoko uwasebenzisile loo macebiso.

Ukuze ubeke izandla zakho emsebenzini:

1. Misela injongo/umgqaliselo wakho uze uwuphumeze. Ngaphandle kwenjongo/umgqaliselo, intsingiselo yakho ayinakulungwa.
2. Konke kwenze ngexesha ubambe ixesha ngendlela echaneke kangangoko unako.
3. Fumana iinkukacha ezininzi kangangoko kunokwenzeka malunga nazo zonke iinkalo zolawulo lokulima kwakho.
4. Yenza izicwangciso futhi ulungiselele konke kangangoko unako ngokunjalo izicwangciso zakho zibhalwe. Umsebenzi wakho mawulandele okucwangciselweyo futhi unxulumanise konke kakuhle ngalo lonke ixesha lokulima. Hlolutya iziphumo zakho ukuze uzazi iinkalo onokuziphucula.
5. Phucula impilo yomhlaba wakho. Sebenzisa umgaqo wokuwuphazamisa kancinane kangangoko umhlaba ngokusebenzisa oomatshini abanamazinyo. Gcina umhlaba ugqunyweyo kangangoko kunokwenzeka ngokusebenzisa iintsalela zezityalo kunye/okanye isityalo zokutshintsha.
6. Imihlaba yakho mayahlula-hlulwe ukuze uthathe iisampulu zemihlaba ezihlatutya rhoqo. Faka izichumiso ngokweziphumo zohlatutyo zeesampulu zemihlaba.
7. Sebenzisa ukufama ngokuchanekileyo okuthetha ukuba yenza yonke into ngokuchaneke kangangoko usebenzise imithombo yoncedo efumanekayo. Ukusebenzisa oomatshini abakwibanga eliphezulu lobuchwepheshe kungaqakaniselwa ngokokufumaneka kweenkxasomali.
8. Zigcine ngocoselelo zonke iingxelo.
9. Sebenzisa ukujikelezisa izityalo ngokunjalo wahluka-hlukanise ukufama kwakho ukuba oko kunokwenzeka.

Khumbula ukuba uncedo lunako ukufumaneka – lusebenzise. Nawe ungaba ngogqwesileyo ■



**MARIUS GREYLING,
UMCEBISI OZIMELEYO
NGOLAWULO KWEZOLIMO**

Inkqubo eguqula ubomi babantu



Masiqwalasele imisebenzi yamaqela ofundonzulu

IINTLANGANISO zamaqela ofundonzulu zingumba obaluleke kakhulu kwinkqubo yophuhliso lwabalimi kwaye zibandakanya izifundo kunye namathuba otyelelo emasimini. Iqela lethu libe namathuba eendibano ali-109 namalungu alo kulo lonke ilizwe. Nanga amanye amanyathelo.



Iqela lofundonzulu laseMbhongweni kwingingqi yaseKokstad liqibile ukuvuna umbona walo. Bavune izikhwebu emasimini msinyane kangoko kunokwenzeka ukuthintela umngcipheko wokonakaliswa yimfuyo. Bazithuthele emakhaya izikhwebu ukuze kuqoshelise inkqubo yokuzomisa.



I-Masoing SG liqela lofundonzulu elitsha lase-Grain SA eLimpopo. Likhokelwa liqela laseNelspruit nguJerry Mthombothi. Abalimi bancediswe ngokubhalisela ukuba ngamalungu baze emva koko banikwa isifundo ngolawulo lomhlaba.



Abalimi baseMetzelfontein kwindawo yaseLouwsberg baxake ke ngokuvuna ngokukhokelwa ngumququzeleli wephondo, uJurie Mentz.



Nangona umbona wabalimi beZangotshe (kwingingqi yaseKokstad) ubungomanga kangange 100%, baye banyanzeleka ukuba bavune njengoko amasimi abo engabiyelwanga. Abalimi bebesoyika umonakalo onokubangelwa yimfuyo ezulayo.

Ukudibanisa ULUTSHA nolimo

UMPHEKI nombhali uAlice Waters uthetha: 'Sifanele ukuncedisa abantwana ngokwakha ubudlelwane obutsha nokutya okubadibanisa nenkcubeko kunye nolimo.' Inkqubo yeziKolo yaseGrain SA izama ukuphumeza oku.

Amanani abantu basemhlabeni alindeleke ukuba akunyuke afikelele kwiibhiliyoni ezili-9 ngonyaka wama-2050 kuqukwa ulutsha oluphakathi kweminyaka eli-15 ukuya kwengama-24 ubudala, lutsha olo oluyi 14% ubuncinane lwamanani ephelele. NgokoMbutho wokuTya noLimo, ulutsha lwaseMaphandleni lusentloko kubukho bokutya okwaneleyo kwixesha elizayo. Ngelishwa, kulo lonke ihlabathi bambalwa abantu abatsha ababona ikamva labo kulimo okanye ekuhlaleni kwiindawo zasemaphandleni. Ukutya okuninzi ehlabathini kuveliswa ngabalimi abarhweba kancinane asebekhulile ngokobudala – kwaye abalimi abadala abafane bayisebenzise imigaqo emitsha yobuchwepheshe, migaqo leyo iyimfuneko ekufameni okunozinzo.

Enye yeemposiso ezinkulu ezifanele ukuqwalaselwa, kukuba ulutsha lusabona ulimo njengoshishino 'lwesidala'. Enyanisweni ukufikelela kubuchwepheshe, kwiinkcukacha nakunxibelelwano oluncomekayo, ngokunjalo noomatshini abaphuculiweyo, kuguqula indlela yokwenza izinto. Ngoko ke, kukho isidingo esingxamisekileyo sokubandakanya ulutsha kulimo kanti oko kunokwenzeka kuphela xa sinabaqulunqi bemigaqonkqubo abanobuchule bokudala amathuba okuba abantu abatsha bacaciselwe ngendlela eya kwenza ukuba balixabise futhi balithembe eli candelo. Kudingeka ukuba ulutsha lukwazi ukuzibona luyinxalenye yophuhliso lolimo noluya kubakhokela futhi lubanike uzinzo bona namaqela alo oluntu kwixesha elizayo.



Kwinyanga kaMeyi iqela labahlohi abafundisa ulutsha lityelele izikolo ezingama-68 beye kubafundisa ngamandla olimo okuvelisa ukutya, amafutha okubasela neentsinga ezilungele impilo yethu entle ngokubanzi.

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isiXhosa, IsiNgesi, iSeTswana, iSesotho nesi IsiZulu.

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

Ixesha elizayo elinika ithemba emva kwemfezeko ka-2020/2021

UNYAKA WOKUTHENGISA KA-2020/2021 OPHELE NGOWAMA-30 KUAPRELI UBE LUPHAWU LOKUPHELA KWEXESHA EBELILIHLE LOKULINYWA KOMBONA EMZANTSI AFRIKA. ISIVUNO SESITYALO SIBE ZIZIGIDI EZI-15,3 ZEETONI, ESIYE SABA SESESIBINI NGOBUKHULU EMVA KWESITYALO SANGO-2017/2018 SEZIGIDI EZILI-16,8 ZEETONI FUTHI SINGAPHEZULU NGAMA 35,7% KUNE-SANGO-2019/2020.

Ngokwesiqhelo, intengiso yalapha idinga malunga nezigidi ezili-11,2 zeetoni zombona, ukuze izigidi ezi-5,6 zeetoni zisetyenziswe ngabantu, zize izigidi ezi-5,6 zeetoni zondle izilwanyana kanti oshiyekileyo uyasilwa.

Intengiso zangaphandle kwixesha lokulima lango-2020/2021 zibe zizigidi ezi-2,8 zeetoni futhi zingaphezulu ngama 55% kunexesha lokulima lango-2019/2020. Inkoliso yombona omhlophe ithengiswe eZimbabwe (370 113 t), eBotswana (239 289 t), eMozambique (132 075 t) naselitaly (127 901 t). Ezona ndawo zithenge umbona otyheli yiKorea (363 625 t), iTaiwan (323 189 t), iZimbabwe (144 813 t) neVietnam (106 068 t).

Impahla ekuvalwe ngayo nayo inyuke kakhulu ngexesha lokulima lango-2020/2021 yafikelela kwizigidi ezi-1,94 zeetoni nengaphezulu ngama 94% kuneyexesha lokulima langaphambili. Nangona umyinge wokuguqu-guqula imveliso umalunga neetoni ezingama-935 000, la maqondo empahla egciniweyo ebengakwanelanga ukuqhuba kwithuba elingaphezulwana kwiinyanga ezimbini. Ngaphandle kwesivuno esikhulu, iintengiso ezandileyo zangaphandle nempahla yokuvula egciniweyo, amaxabiso ebesoloko omelele kumaqondo olungelelwaniso lweentengiso, ubukhulu becala aqhutywa yimibandela yehlabathi, enjengentengo yaseChina yezondlo zemfuyo kunye neemozulu ezingafanelekanga kwiindawo ezithile zehlabathi.

Sijonge enkulweni kwixesha elitsha lokulima eliqalise ngomhla woku-1 kuMeyi 2021,

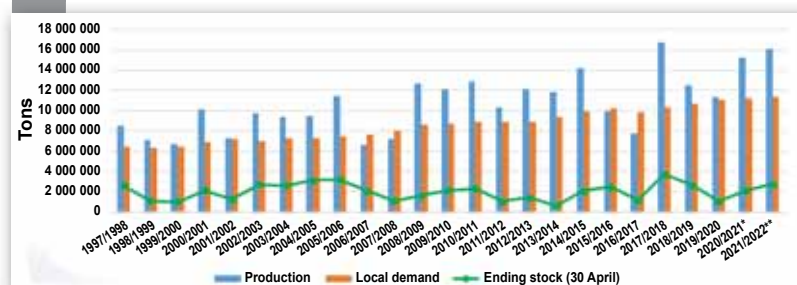
ngokoqikelelo lwemveliso lwesine lweKomiti yeeNgqikelelo zeziTyalo, kulindeleke malunga nezigidi ezi-16,1 zeetoni zombona kwixesha lokulima lango-2021/2022 apho izigidi ezisi-8,9 zeetoni zizezombona omhlophe ukuze izigidi ezisi-7,1 zeetoni zibe zezombona otyheli. Ukuba kuba njalo, esi sityalo siya kuba sesesibini ngobukhulu esixelwe eMzantsi Afrika, (iGrafu 1). Ngenxa yokulindeleka kwesivuno esihle kweli xesha lonyaka, intengo yalapha kulindeleke ukuba inyuke noko phantse nge 1%, yona iza kuqhutywa luhlu lokusetyenziswa ngabantu. Iintengiso zangaphandle kulindeleke ukuba zihlale zifana malunga nezigidi ezi-2,8 zeetoni. Impahla egciniweyo ekuvalwe ngayo iqikelelwa ukuba iya kunyuka ngama 41% ekupheleni kwexesha lokulima, futhi iya kwanela phantse kwiinyanga ezintathu zentengo.

Ixesha lokuvuna umbona seliqale kakuhle kwaye abalimi basebenza nzima ukuze imveliso yabo isiwe kwizisele. Okulindelekileyo kukuba kufanele kubekho uxinzelelo olungephi kumaxabiso, emva kwezizigidi zasezimbalini ngethuba lokuvuna. Nangona kunjalo, ukuba ixesha elidlulileyo belilihle, kufanele ukuba kusekho intshiyekela evela kwiintengiso zehlabathi, ebiza kuxhasa amaxabiso abe phezulu noko kwiinyanga ezilandelayo ezimbalwa. Oku kungabangelwa ziimeko zembalela eBrazil nakwiindawo zaseUSA. Ngaphaya koko, iChina ithenga izixa ezikhulu zombona eUSA, ukuze oko kucinezele iintengiso zehlabathi, ngokunjalo namaxabiso ehlabathi anyuka ngokweminyaka esibhozo. Inguquko yalapha yomyinge wamaxabiso phakathi kukaMeyi ngo-2020 noMeyi ngo-2021 ibingama 34% ngombona otyheli nama 28% ngombona omhlophe. ■



**IKANGENI MALULEKE,
INGCALI YOQOQOSHO
KWEZOLIMO EGRAIN SA**

1 Intengiso, intengo nombona ogcinwe ekugqibeleni eMzantsi Afrika.



Uthombo weenkukacha: yiGrain SA, iSAGIS neNAMC