

ISIZULU

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INCWADI YEGRain SA YABALIMI ABASAKHULAYO



Ithimba labalimi baseMakukhanye Mnceba bajabula kakhulu ukuthola imbewu namakhemakhali abo.

BALA IZINDLEKO ukuze wenze inzuzo

BONKE ABALIMI KUFANELE BABALE NGOKUCOPHELELA UKUTHI AYIMALINI AMA-INPUTS ESIZINI, UKUZE UKWAZI UKUQHATHANISA IZINDLEKO ZAKHO 'NOKUTHOLILE' NGESILIMO FUTHI UHLAZIYE UKUTHI NGABE OKWENZILE BEKUFANELE NOKUTHI KUNAYO INZUZO NGANDLELA THIZE – NOMA NGABE IYIMALI ESEBHANGE NOMA UKUDLA OKUSENQOLOBANENI.

Ngokweywayekile abalimi basuka kwisizini beye kwenye benza lokho abakwazi ukukwenza kangcono ngaphandle kokuthi bakale ngokucophelela izindleko zabo ukuzi bathole ukuthi ngabe ukusebenza kwabo kanzima kuzithelile izithelo, noma ukuze bathole ukuthi ngabe kukhona obekufanele kwenziwe ngokufanelekile ukuze bonge izindleko.

Umlimi ngamunye unezigigaba zakhe ezehlukile futhi ngamunye kufanele abheke isithombe esikhulu ukuze ubale izindleko obe nazo ngesikhathi uqhuba amaphrojekthi okulima ahlukene. Umsebenzi wokulima ngamunye kufanele ubalwe bese uyahlolwa njengomsebenzi wonke wokulima.

UHLELO LOKUBHAJETHA

Amabhajethi ngokulula yizindlela ezifomali zokuhlela imininingwane efanele yezomnotho ezikusizayo ekwenzeni izinqumo zebhizinisi. Ama-

bhajethi ebhizinisi anohla lwamarisidi ezimpahla ezithengiwe, izindleko nokutholakele phecelezi *net returns* ngomkhiqizo owodwa kuyisisekelo sokuhlela nemathulusi lokuhlaziya elidingwa yiwo onke amabhizinisi.

Bathi, 'ukulinganisa ukwazi'. Izindleko zokukhiqiza ummbila nokutholile ihektha ngalinye elitshaliwe kufanele kubalwe. Wonke umsebenzi wokulima zingabalwa izindleko zingahlaziywa ngokwezindleko **eziguququkayo nezindleko ezinqunyiwe.**

Izindleko ezinqunyiwe yizindleko ezingaguquki ezihlala zinjalo kungakhathalekile ukuthi yini oyikhiqizayo. Izibonela kubalwa kuzo inhlabathi yonke nokunye okuqashiwe okukhokhelwayo, amabhilidi, amaholo abasebenzi abasebenza ngokugcwele, imishwalense intela yempahla, izindleko zenzalo uma uthenga ngesikweletu noma ama loni, ukudleka – ngoba zonke izimoto onazo izinga lazo liyehla njayo ngonyaka – ukukhanda nokunakekela nezinye izisetshenziswa ezifana ngesi namanzi.

Ama-inputs asebenza ngonyaka aqonde ngqo. Ngama-*inputs* onyaka ngoba akufani nokuthenga ugandaganda noma iplanta okuhlala iminyaka eminingi, lezi zisetshenziswa zonke ziphele njalo ngonyaka futhi kufanele ziphinde zithengwe ngesizini entsha. Kumkhiqizi wokusanhlamvu lokhu kuhlanganisa ezifana nomcako phecelezi *lime*, umanyolo, ama-*herbicides* nama-*pesticides*, imbewu, amanzi okuchelela, abasebenzi, uphethiloli ngisho nezindleko zokuqasha imishini, ama-*impliments* nebhajethi yokukhanda nokunakekela. Izindleko zalokhu ziyaguququka

Lawula ubumuncu benhlabathi NGOMCAKO

U UKUKHQIZWA KOMMBILA UKUSEBENZA KWA-MAFEKTHA AMANINGI AFANA NEKLAYIMETHI UMANYOLO, UBUMUNCU NOKULIMA. UBUMUNCU BUBONAKALA KUMNININGWANE WESAMPULA ENHLABATHINI OKUPHINDE KUBONAKALE EZIFUNDWENI ZE-SOIL PROFILE. UMKHQIZO WOMMBILA UNCISHISWA UBUMUNCU BENHLABATHI KUPHELA LAPHO AMAZINGA AWUBUTHI BAMA-ELEMENTI AFANA NE-ALUMINIUM (AL) NE-MANGANESE (MN) AKHONA KODWA ENGAYONA I-LOW PH.

Ubuthi be-Aluminium ikakhulukazi buhambisana nobumuncu benhlabathi, kanti ubuthi be-manganese kuthukela kuhambisana nobumuncu senhlabathi, nakuba zombili izinhlobo zobuthi kwesiye isikhathi kungezeka kanyekanye. Ubungozi bobuthi be-Al emmbileni bubakhona kuphela uma i-pH (KCI) ingaphansi kuka-4,5 noma i-pH (H₂O) ingaphansi kuka-5,5. Ubuthi be-Al bubonakala ngereshyo ye-Al nehayidrojini (H) kusamba sephothezyamu (K), ikhalsiyamu (Ca), magniziyamu (Mg) ions. Le reshyo ivezwa ngokwamaphesenti, yaziwa njengokugcwala kwe-esidi phecelezi *acid saturation*.

Kuyenyuka ukulahlekelwa yisivuno njengoba ukugcwala kobumuncu kwenyuka kuba ngaphezulu kuka-20%, njengoba ukumuncaka kwamanzi nenyutriyenti kuncishelwa amandla. Asikho isivuno sokusahlamvu esingalindeleka lapho ukugcwala kobumuncu kungu-80%. Lapho izimo zozimbili zobuthi be-Al ne-Mn zenzeka, ubuthi be-Mn buzodamba uma inhlabathi ilawuliwe yaba ngaphansi kuka-20% ukugcwala kwe-esidi.

Umcako uyasetshenziswa ukulungisa amazinga e-pH nokugcwala kwe-esidi. Isidingo somcako sihlose ukufinyelela emazingeni okugcwala kwe-esidi okuphakathi kuka-0 no-15% ukuze kunikeze i-buffer ephikisana ne-re-acidification nobuthi be-Al.

Ukuphathwa kokugcwala kwe-esidi engaphansi kuka-15%, kufanele kucatshangiswe kahle. Ukufakwa komcako, okungaphezulu kwalokho okudingekayo, ukunciphisa ukugcwala kwe-esidi kuye ku-0% isibonelo kungaba nezindleko ezinkulu.

Kodwa kubalulekile ukunquma ukuthi ngabe ubumuncu be-esidi obukhona budephe kangakanani nokuthi kufanele kudanjiswe ngokudepha okungakanani ngaphambi kokuba kubalwe ireyithi yomcako ne-gypsum.

IKHWALITHI YOMCAKO

Ikhwalithi yomcako ibandakanya izibonakalo ezifana ne:

- I-Calcium carbonate equivalent (CCE) kwi-hydrochloric acid (HCl);
- I-CCE kwi-resin i-(Rh method);
- Usayizi wezinhlaiyana; na
- I-pH (KCI).

Ukudambisa ubumuncu benhlabathi ngapansi kwesimo samasimu asigqugquzelwa umthelela walezi zimo ezingazodwa, kodwa kuba nezinye izinhlangothi eziningi, ze-mathematical equations okubandakanya zonke izibonakalo. Kodwa, imethiriyali yomcako ene-CCE (HCl), CCE (Rh), ephakeme, ingxenye enkulukazi yezinhlaiyiya ezicoyisakele ne-pH (KCI) ephezulu kufanele ibe ngenamandla kakhulu ukudambisa i-esidi enhlabathini ngaphansi kwezimo zensimu. Hlola umcako wakho ngokwa la mafektha kanye nezindleko ezidilivwe epulazini lakho.

UHLOBO LOMCAKO

I-dolomitic ne-calclitic lime kuyatholakala emakethe. Isimo se-Mg yenhlabathi yiso esizonquma ukuthi iyiphi edingekayo. I-dolomitic lime yiyo encomekayo uma kuqhathaniswa ne-calclitic lime uma isimo se-Mg yenhlabathi siphansi (<40 mg kg⁻¹) noma singaphansi uma siqhathaniswa nesimo se-Ca, ngaphandle uma isidingo se-Mg kungahlangabezwana naso ngokutshenziswa kwe-Mg equkethe umanyolo.

UKUDINGEKA KOMCAKO NOKUWUFAKA

Ukulima okuqondile yindlela okufanele kuhanje ngayo esikhathini esizayo futhi yindlela enhle yokufaka umcako. Lokhu kungenziwa kuphela uma kwenziwa amasampula aqonde ngqo nomcako ungafakwa kahle. Lokhu kubiza kakhulu, kodwa imvuzo wokwenza lokho kutshala ufanele. Ensimini yakho kokubili i-dolomitic ne-calclitic lime kunganonywa futhi kufakwe umcako kahle kakhulu. Imithombo yomcako ne-gypsum kuklelisiwe ku-Grain SA Grain Guide. Kwi-ARC-DCI Maize Information Guide izincomo zomcako ngokwezinguquko zokugcwala kwe-esidi, umthamo we-cation exchange wenhlabathi nekhwalithi yemithombo yomcako ingatholakala.

Izindleko zomcako, izindleko zokuthutha, izindleko zokuhlanganisa inhlabathi nomswakama oqukethwe womcako nakho kufanele kubhekwe. Umthetho no.36 ka-1947 uchaza ukuthi u-100% wezi-



nhlayiya eziyisitandadi somcako kufanele sibe ku- $<1\ 700\ \mu\text{m}$ and $50\% <250\ \mu\text{m}$. Ngokwe-*microfine lime*, u-95% wezinhlayiya kufanele kube u- $<250\ \mu\text{m}$ no-80% $<106\ \mu\text{m}$. I-minimamu evumelekile ye-*calcium carbonate equivalent (CCE [KCI])* emicakweni yomibili u-70%. Qhathanisa imininingwane yezobuchwepheshe yemithombo yomcako ehlukeni iphinde uthathe isinqumo ezimalini.

Kudingeka i-*lime spreader* ekhalibhrethwe ngokufanele yokufaka umcako. Uma umcako ufakwa ngokwerythi eshintshashintshayo i-implimentwa ngokuyikho kudingeka amamephu nedatha efanele. Ngaphandle kwekwalithi, okwenziwa umcako enhlabathini kuncike kakhulu ekuwuhlanganiseni ngokufanele nehlabathi. Lokhu kufinyeleleka ngokuthi uqale nge-*disking*, ulandelise ngokutshala noma uriphe ngokujulile phecelezi i-*deep ripping*. Uma kungenzeka umcako kufanele ufakwe futhi undlalwe cishe ezinyangeni ezimbili ngaphambi kokutshala ukuze uqinisekise ukuthi umcako uhlanganiseke ngokuphelele ngaphambi kokutshala.

I-*Strip liming* ingenziwa uma kubonakale i-*strip acidification* kubonakale ngesikhathi sokwenziwa kwesampula yenhlabathi. Kubalulekile ukuthi umcako ufakwe kuma-*strip* afanele. Uma isiminyamina silawulekile ngemizila enqunyiwe ifakiwe kungaba ngenye indlela engasetshenziswa. Umcako okungenani ungafakwa ezinyangeni ezimbili ngaphambi kokutshala kwi-*strip* sika-300 mm ngaphezulu kolayini bese kuxutshwa nenhlabathi.

UBUMUNCU BE-SUBSOIL

Ubumuncu be-*subsoil* yinkinga ekhulayo nomcako nawo uyasiza ukufinyelela lapho ufinyelela khona kwi-*subsoil*. Ukusebenzisa ama-*impliment* afaka umcako ekujuleni – lokho ngama-ripha ashintshiwe ngokusipesheli noma igeja elingena ngokujulile phansi – kuyasebenza kodwa kuyabiza. Ukufakwa kwe-*gypsum* kwisafesi kungasetshenziswa, kodwa xoxa ngalokhu nabadayisi bomcako wakho. I-*gypsum* ivala isikhala se-*Mg* kusuka phezulu kuye ku-*subsoil* ne-*dolomitic lime* kufanele kufakwe i-*gypsum* ukuqinisa i-*topsoil Mg*. I-*gypsum* izodinga isizini eyodwa noma amabili ngaphambi kokuba ifinyelele kwi-*subsoil* futhi ngakho ke ukuhlanganisa ngokujulile komcako yisona isixazululo esisheshayo.

UMTHELELA WOMCAKO KWI-HERBICIDE ENHLABATHINI

Kubalulekile ukuqondisisa ukuthi umcako uzoba nomthelela kwi-*herbicide* enhlabathini. Amanye ama-*herbicide* azoba khona futhi angazilimaza izitshalo. Kubalulekile ukuxoxa ngenqubo yomcako nabadayisi bembewu nomanyolo. Izilimo ezifana nobhekilanga, ubhontshisi owomile noma isoya ungaba nomthelela omubi ngokufaka umcako endaweni ye-*herbicide molecules*.

Uma ufuna imininingwane, ungabheka i-*ARC-Grain Crops Maize Information Guide, the Grain SA Grain guide* ne-*FERTASA Fertiliser Handbook*. Abadayisi bakamanyolo endaweni ohlala kuyo nabo bangakusiza ngolwazi. ■



U-PIETMAN BOTHA,
UMELULEKI OZIMELE
KWEZOLIMO



IZWI LIKA...

Du Toit (uThabo)
van der Westhuizen

KULE SIGABA ININGI LETHU LISEMA-PHETHELWENI OKUVUNA. KUTHOLAKALE ISIVUNO ESIKHULU FUTHI ININGI LETHU LIFUNA UKUZITHOKOZISA NJENGMVUZO WOKWENZEKA KAHLE UMSEBENZI. NGIYAZI UKUTHI NJENGABALIMI SIYAFUNA UKUTHATHA IKHEFU UMA SINONYAKA OMUHLE, KODWA LO AKUWONA UNYAKA ESINGAKWENZA NGAWO LOKHO.

Ngake ngahlangana nendoda yathi ngonyaka onzima kufanele ibhande ulibophe liqine, kodwa ngonyaka omuhle kufanele uliqinise nakakhulu. Angikhulumi ngokuthi uzijabulisa nje kancane. Qaphela ukusebenzisa imali ezintweni ozidingayo – okungenani sebenzisa imali ezintweni ongeke ukwazi ukuphila ngaphandle kwazo.

Kule sizini sibone isivuno esihle namanani amahle futhi kubaluleke kakhulu ukuba leli thuba silisebenzise ukusebenzisa ngobuhlakani futhi uyibuyisele emuva uyitshale ebhizinisini lokulima, kunokuthi uyimose.

Imali engaphezulu inikeza abalimi ithuba elidingekayo lukunakekela impahla yabo – lokho obekungenzeki ngokufanele esikhathini esedlule ngenxa yokweswela izimali.

Imali yisebenzisa ukulungisa isimo sokuvundisa inhlabathi yakho okufana nokufaka umcako nokufaka ifosfeythi kanye namanye ama-elementi adingeka enhlabathini yakho. Khumbula ukuthi noma isivuno sibanjani kufanele ubuyisele enhlabathini yakho. Qaphela ngokugubha inhlabathi yakho. Inhlabathi evundile ingenye yama-asethi abaluleke kakhulu kumlimi. Ungaba nezinto ezinhle zokusebenza nemvula eningi kodwa uma ungenawo imvunda ngeke usithole isivuno esihle futhi.

Uma unayo imali engaphezulu yihlukanise imisebenzi yakho yokulima ngokwengeza amayunithi okulima weseka ukuzinza kwe-*cash flow*. ■

Ukuhlola umhlabathi kuyakusiza ukutheni uhlelele isizini elandelayo

UKUHLOLA INHLABATHI NGELINYE LAMATHU-LUZI LABALIMI LOKWENZA NGCONO ISIVUNO SOMKHIQIZO WESILIMO EMHLABENI WABO ABAWULIMAYO. UHLOLO LUZOKHOMBISA ISIMO SANAMUHLE NESILINGANISO SAMANYUTHRIYENTI AKHONA ESILIMO ENHLABATHINI NOMA UMA KWENZIWE EMVA KOKUVUNA LOKHO OKUZOTSHALWA NGESIZINI ELANDELAYO.

Ukuhlolwa kwenhlabathi kubalulekile ekwenzeni uhlelo oluqondile nokubhathela iprogramu kamanyolo ezosetshenziswa esilimni esilandelayo emjikelezweni wokukhiqiza.

Uma ufuna ukukhiqiza isilimo sokusahlamvu esikhulu, amanye amafektha afana neklayimethi ekhona emhlabeni ebhlokhini yomhlaba othile, i-avareji yemvula etholakalayo ngonyaka, ukudepha okufanele kwezimpande, iisimo senhlabathi phecelezi *structure* senhlabathi nokuhleleka, indlela ukulinywa ngayo, ukuba khona kwano-ma iyiphi ikhemikhali noma isivimbelo esibonakalayo sokukhula kwezimpande ngokufanele, ukukhubuka kwenhlabathi jikelele kanye nokuvunda kufanele kubhekwe.



Omanyolo abake basetshenziswa esikhathini esiphambili kufanele bahlolwe kubhekwe umthelela wabo esivunweni sangempela esitholakele. Inani lamanyuthriyenti asetshenziswa ngesikhathi esedlule, afakwa njengomanyolo, kufanele 'akhalibhrethwe' noma aqhathaniswe nohlolo lwenhlabathi lwesikhathi esedlule, isivuno esithagethiwe, omanyolo abanconyiwe, omanyolo abafakwa ngesikhathi kutshalwa nokunye okufakwe ngesikhathi kutshalwa kuye esivunweni esitholakale ngempela ngesikhathi kuvunwa. Lokhu kuhlaziya kuzokhombisa uma ekhona amanyuthriyenti anele noma cha. Uma kungenjalo amazinga kamanyolo kufanele akhuliselwe isilimo esilandelayo.

IZIZATHU ZOKUHLOLA INHLABATHI

Inhlabathi izokhombisa ukuthi zingaqhathaniswa kanjani amazinga emvunda amanyuthriyenti ezitshalo ezahlukenene uma kuqhathaniswa noxhaxha lwethiyoli noma amazinga aziwayo amukelekile esivuno sezitshalo azihambisana namandla enhlabathi. Imihlahlandlela yokuphumelelisa lokhu ngengamandla ezivununo ezahlukenene kudume kakhulu, ngokuphathekayo, okungaphezulu kweminyaka engama-70 kamanyolo oyikhemikheli esetshenziswa iNgizimu Afrika yonkana.

Kubalulekile ukuhlola amandla esivuno esikhulu sesilimo sohlobo nokudepha. Inhlabathi i-'Bainsvlei' nenhlabathi engaphezulu enokudepha kuka-1,5 m wezinga lobumba inamandla aphezulu mhlawumbe u-6 t/ha ommbila. Lokhu ngeke kuqhathaniswe ne-'Westleigh' ka-0,6 m obumba nge-3,5 t/ha kuya ku-4,5 t/ha amandla

esivuno. Umhlaba ungavundile ngokudepha endaweni enemvula eni ngi nayo futhi ingakhiqiza i-avareji ka-5 t/ha kuya ku-6 t/ha. Le nhlabathi ngakho ke izodinga inani elifanayo lamanyuthriyenti akhona.

Uma ithagethi yomkhiqizo yenhlabathi inqunywe imiphumela yokuhlolwa kwenhlabathi kungasetshenziswa ukuhlela izinga lamanyuthriyenti kamanyolo azofakwa. Ngaphandle uma kunobufakazi obutholakala kumarekhodi noma ulwazi lokufaka umanyolo ukuze uthole isivuno esikhulu njalo kuyasebenza, ngokuvamile kuba ubuhlakani ngakwezezimali ukuba ufake umanyolo isikhathi eside kutholakala isivuno esiku-avareji. Unyaka wemvula eningi enokwakheka kukamanyolo wesikhathi eside kubonakalisile ukuthi ngokuvamile kuba khona isivuno esikhulu.

Ukuhlolwa kwenhlabathi kukhombisa ibhalansi yamanyuthriyenti enhlabathini, kodwa amandla esivuno esingatholakala sithatha onke amafektha okuxoxwe ngawo ngenhla njengento ebalulekile. Imiphumela yokuhlolwa wenhlabathi kufanele ihlaziywe ngaphansi kwale simo sokuthi inani eliphezulu likamanyolo lingafakwa esilimni esilandelayo.

AMAFEKTHA OKUHLOLWA KWENHLABATHI NOMA INGXUBE

Imiphumela yokuhlolwa kwenhlabathi ngokuvamile ikhombisa, ngokobungako, amazinga e-pH noma isimuncwana mhlamwumbe esikalwe emanzi noma kuphothezlyamu kloraydi *medium*, i-fosfeythi (P), iphothezlyamu (K), ikhalsiyamu (Ca), imagniziyamu (Mg) ne-sodiyamu (Na) – konke kungama-mg/kg, noma amazinga akhona nobumba oluqukethe, amazinga e-zinc, i-salfa (S) futhi amaphesenti ekhabhoni uma kucelwa.

Uma usuthole imiphumela yakho yokuhlolwa kanye namandla yezivuno ezahlukenene amazinga angaqhathaniswa nenkambiso eyamukelekile.

Ifosfeythi

Imikhuba ejwayelekile yefosfeythi (P) ihlukaniswa njengalokhu okulandelayo:

- Okuphansi: Ngaphansi kuka-($<$) 15 ama-parts per million (ppm).
- Okuphakathi: kuka-15 ppm - 25 ppm.
- Okumaphakathi kuya phezulu: 25 ppm – 35 ppm.
- Okukhulu kakhulu u-($>$) 35 ppm.

Izinga elanele lefosfeythi lokukhiqizwa kwesilimo u-25 ppm.

Le zinkambiso zamanye amanyuthriyenti ngokuvamile kuboniswa emiphumeleni yohlolo. Amazinga adingekayo kamanyolo angabalwa kumathebula akhombisa ukunceka noma amanyuthriyenti adinga izilimo ezinamazinga ahlukenene esivuno.

Inaythrojini

Uxhaso luka-20 kg – 25 kg wenaythrojini (N) ngethani lesilimo ethagethiwe ihlektha ngalinye linganganikezwa ngokwengeza kokunconyiwe kwe-P ne-K kuprogramu kamanyolo.

Xhumana nomlimi onolwazi noma i-*agronomist* ukuze uqinisekise noma yiziphi izincomo zikamanyolo owenziwe ngokusebenzisa imiphumela yokuhlolwa kwenhlabathi. ■



U-RICHARD MCPHERSON, UMELELEKI KWEZEBHIZINISI LEZOLIMO NOKUPHATHWA KWEPROJEKTHI

Bala izindleko...



kuya ngamanani ezimakethe kusukela kwenye isizini kuya kwenye. Lama *inputs* engashintshwa ngesikhathi senqubo yokukhi-qiza ukuletha izingquko kuma-*output*.

Imininingwane esekela ibhajethi

Uhlelo lokubhajetha futhi kufanele lufake phakathi amandla esivuno kanye nemiphumela yemali engenile olindele ukuyithola ngowama-avareji esizini edlule.

- Ngabe yini i-avareji yesivuno nge-t/ha endaweni ohlala uyo?
- Ngabe ithini intengo yombila yamanje ngokwe-R/kg?
- Ngabe singakanani isivuno osilindele ngesizini ezayo?
- Ungasithola isimo samanani alindelekile esizini ezayo?

Ukuzijwayeza ukudweba ibhajethi

Qala ekuqaleni futhi udweba ibhajethi enamandla Ama-*inputs* ngqo ngokwehektha elilodwa. Mhlawumbe kungabukeka njengento enje:

Ama- <i>inputs</i> ngqo	Inani le- <i>ha</i> ngalinye	Isamba se- <i>ha</i>	Isamba Sezindleko
Umcako			
Umanyolo			
Imbewu			
Ama- <i>Herbicides</i>			
Ama- <i>Pesticides</i>			
Uphethiloli no-Oyili			

Eminye imibuzo okudingeka umlimi ayibuze namarekhodi ukuze uhlelo lokubhajetha luqonde ngqo:

- **I-aksesi yenhlabathi:** Ngabe kufanele ngibhadale irente yenhlabathi noma intela?
- **Imali yezinkontileka:** Ngabe nginayo imishini yonke nama-*implement* engiwadingayo ukuze ngenze umsebenzi noma kuzodingeka ngiqashe osonkontileka noma abanye abasebenzi?
- **Ukuphathwa kwenhlabathi:** Ngabe kungangibiza malini ukwenza amasampuli enhlabathi? Ngingawufaka kanjani umcako nomanyolo. Ngabe kuzongibiza malini lokhu? Ngingawusebenzisa umshini noma abasebenzi ukuhlaza amasimu?
- **Izindleko zokufafaza:** I-*Knapsack* noma i-*boom spray*? Ngabe yini

iphogramu yokufafaza? Ngabe ngihlela ukuwafafaza kangaki amasimu ami kule sizini?

- **Izindleko zokuthutha:** Ngabe kuzongibiza malini ukuqoqa nokudiliva ama-*input* (nokusebenza) emasimini ukuthutha isilimo sami emasimini?
- **Izindleko zokuvuna:** Ngabe ngizovuna kanjani? Ngingabadinga abasebenzi abengeziwe? Ngabe ngizokugcina kanjani okusanhluvu? Ngingaba nezindleko zokubhula, noma ngizoqasha ikhombayini yokuvuna? Ngabe zingakanani izindleko ezizodalwa uphethiloli?
- **Izindleko zokusebenza:** Ngabe ngizobakhokhela nini abasebenzi – izindleko zabasebenzi abasebenza ngokugcwele uqhathanise nabasebenzi betoho? Ngabe sikhona isidingo sokuthenga ukudla nezingubo noma izingubo zokuzivikela?
- **Ukukhanda nokunakekela:** Ngabe yikuphi lapho ngivamise ukuchitha khona imali ngokukhanda nokunakekela ukuze ngigcine izimoto nemishini yami isesimeni esihle sokusebenza?
- **I-elektriki:** Ngabe ngizowusebenzisa ugesi?
- **Amanzi:** Ngabe kukhona lapho kungadingeka khona ukuba ngikhokhele amanzi?
- **Izindleko zokumaketha:** Ngabe kuzongibiza malini ukuhambisa umkhiqizo wami emakethe? Ngabe kukhona kungadinga ukuphakhejwa? Ngingaba nazo izindleko zokubeka? Ngabe zingakanani izindleko engingaba nazo zokuthuthela okusahlamvu kwami ukuya kumashedi ami noma ukukuhambisa kumasilo endawo noma emshinini?

Lena yimibuzo embalwa nje kuphela eqinisekiso ukuthi imininingwane iqondile iyoqoqwe. Uhlelo lokubhajetha luqala ngokuhlelela isizini entsha. Khumbula ukuthi kubaluleke kakhulu **ukubala ngokuqonde ngqo izindleko ngazinye endleleni** futhi ugcine mamarisidi namarekhodi esente ngalinye olisebenzisile ekukhiqizeni isilimo. Kubalulekile ukwazi ukuthi uyalikhulisa ibhizinisi lakho. Imininingwane eqonde ngqo isinikeza amandla ukuze kwenziwe izinqumo ezingcono zesikhathi esizayo. ■



U-JENNY MATHEWS,
UNGOTI WEZOKUPHATHA
NENTUTHUKO NOKUFUNDISA



Let's Talk ...



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ngemfinhlo yabo yempumelelo



NJALO NGONYAKA I-GRAIN SA IBA NOMNCINTISWANO WESIVUNO SOMMBILA, SIKABHONTSHISI ISOYA, NOBHEKILANGA EZIFUNDENI EZAHLUKENE EZWENI. EMNCINTISWANENI KA-2020 BANGAMA-46 ABAWINA ABAMENYEZELWA EMBIKWENI WEPHEPHABHUKU I-SA *GRAAN/GRAIN* KA DISEMBA 2020/JANUWARI 2021.

Kwabawinile abayishumi banikeze imininingwane emayelana nokuphatha isilimo sabo. Uma sibheka imininingwane yabo, kube kühle ukubona ukuthi cishe bonke basebenzisa umgomo oyisisekelo ofanayo. Kodwa, ukusebenza ngokuphathekayo kwemiomo kwaba khona umehluko ngenxa yokuthi abalimi balima ezifundeni ezahlukeni – ezinamaklayimethi angafani nemvula, kanye namareferensi omuntu anelikhulu iqhaza.

UKUPHATHA JIKELELE

Okugqamile ukuthi la balimi abayishumi **babenenhloso** efanayo mayelana nokukhiqizwa kwesilimo: ukukhiqiza kangcono njalo ngonyaka: Yenza ngcono umkhiqizo wakho njalo ngonyaka ukuze ukwazi ukulima okuzokufakela inzuzo nokuzoqhubeka isikhathi eside.

Okwesibili, kwagcizelelwa **ukugcinwa kwesikhathi**. Yonke into yenziwa ngesikhathi nangesikhathi ngqo. Ama-implimenti aseviswa futhi abhekwa onke ngesikhathi ukunciphisa ukulahleka kwesikhathi ngokukhanda ngesizini yokukhiqiza. Ama-*input* atholakala ngesikhathi. Ukulungiswa kwemibhede yembewu, ukulawulwa kokhula kwenziwa ngesikhathi.

Ngokuphathwa komkhiqizo kugxilwe kakhulu ekufuneni ulwazi olufanele. Akekho noyedwa kula balimi awayenamahloni ngokufuna ulwazi ngaphandle kwepulazi kwabanikezela ngezinsiza, omakhelwane, abeluleki, kuma-*study groups* nakwabanye abantu abanolwazi. Epulazini banke bazenzela uphenyo lwabo futhi bahlola nama-cultivars akhona nezinye izindlela zokukhiqiza ezahlukeni.

Ukugcinwa kwamarehodi: kwenziwa ngokucophelela, futhi bonke basebenzisa lo mqondo: 'Uma ungakali, ngeke ukwazi ukuphatha'. Zonke izibonakalo zokukhiqiza ziyakalwa. Imininingwaye emayelana neklayimethi njengokwenzeka kwayo emapulazini abo nayo iqoqiwe. Amarekhodi amazinga okushisa, imvula, i-avareji yosuku lokuqala lwemvula, i-avareji yosuku lokuqala lwesithwathwa, imvamisa yokwehla kwesichotho, nokunye okukhona. Kulokhu amazinga aphezulu obuchwepheshe asetshenziswa ukwenza ukulima kwabamba elikhulu iqhaza. Yonke imininingwane yonyaka ngamunye ikhona futhi ibekwe ngokonyaka nangokwemigomo esho okungenziwa kangcono.

Mayelana **nokuphathwa kwezimali** kusetshenziswa usandla esiqinile ekuphatheni izindleko zama-*input*. Ama-*input* asetshenzeswa ngokohlelo nangokwebhathi futhi banke bayazazi izindleko zama-*input* abo ukuthi zingakanani ihektha ngalinye.

IMIKHUBA YOKUWINA

Kwagxilwa kakhulu enhlabathini, ikakhulukazi **empilweni yenhlabathi** – kwenziwa imephu futhi kwenziwa namasampula enhlabathi njalo kwenziwa isiqondiso sokusetshenziswa kukamanyolo. Bonke abalimi basebenzisa umgomo wokungawuphazamisi kakhulu umhlabathi futhi begcine inhlabathi imboziwe. Izinsalela zesilimo na/noma izilimo

eziyisembozo zisetshenziselwa le nhloso. Ngakho ke **ukulima ngokusungula**, kuthathwa njengento ebaluleke kakhulu.

Ukusebenzisa **ukulima okuqondile** kuthuthukisa ukusetshenziswa kobuchwepheshe obuphezulu bama-impliment ngokusezingeni eliphezulu ukuze kutshalwe ezingeni lokudepha okufanele ngokohlelo lwenani lezitshalo ezitshalwayo, ukufaka umanyolo ngokwehlukana kwenhlabathi nezidingo, ukufaka izibulala-khula phecelezi *weedcides* nezibulala-zinambuzane phecelezi *pesticides* nangesikhathi sekuvuna. Ngesikhathi sesizini yokukhula kuhlaziywa amahlamvu ukuze kubonakale okwentulekayo nezifo ezingahle zibe khona.

Bonke basebenzise **ukujikeleziswa kwezilimo** ezihambelana nesimo sendawo yabo nenhlabathi ukuze bahlomule ngesivuno ngokwenze njalo. Ukuxuba amabhizinisi ahlukeni kube nelikhulu iqhaza empumelelweni yonke kwabawinile.

ISIPHETHO

Yini ongayithatha kulokhu uyoyisebenzisa epulazini lakho noma ulima ihektha elilodwa noma amahektha ayinkulungwane? Ukhumbule ukuthi imali izosebenza, ulwazi lwakho namakhono akho azobamba kuze kufinyelele ekutheni ukwazi ukuwasebenzisa lama-thiphu.

Ukuze wenze okuphathekayo:

1. Zibekele injongo/igoli futhu ulilawule ukuze lifezeke. Ngaphandle kwenhloso/igoli kufana nokuthi uyandinda.
 2. Yonke into yenze ngesikhathi nangendlela efanele.
 3. Thola ulwazi olwahlukene lwazo zonke zokulawula umkhiqizo wakho.
 4. Hlela futhi uhlele yonke into ngamakhono akho onke nezinhlelo zakho ozibhale phansi. Implimenta ngokufanele futhi ulawule ngokufanele isizini yonke. Hlela imiphumela yakho ukuze unqume ngalokho ongakwenza kangcono.
 5. Yenza ngcono impilo yenhlabathi yakho. Sebenzisa umgomo wokungaphazamisi inhlabathi ngokusebenzisa ama-implimenti amancane. Gcina inhlabathi imboziwe kakhulu usebenzise izinsalela zesilimo na/noma ngezilimo eziyisembozo.
 6. Yenza imephu enhlabathini yakho futhi uthathe amasampula enhlabathi njalo ukuze ahlaziywe. Faka umanyolo ngokwemiphumela yamasampula enhlabathi.
 7. Sebezisa ukulima okuqondile ngqo okusho ukuthi yenza yoke into ngokufanele ngakho konke okukhona. Ukusebenzisa ubchwepheshe obuphezulu bama-implimenti asetshethuke kakhulu angafakwa nawo uma izimali zikhona.
 8. Gcina onke amarekhodi ngendlela eqondile.
 9. Sebenzisa ukujikelezisa izilimo futhi ulime okwahlukene futhi uma ungakwazi.
- Ungakhohlwa usizo lukhona – lusebenzise. Nawe ungawina futhi. ■



**U-MARIUS GREYLING,
UMELULEKI OZIMELE WEZO -
KUPHATHA KWEZOLIMO**

Iphrogramu eguqula izimpilo



Asibheke imisebenzi yama-study group

IMIBUTHANO yama-study group yenza ingxenye ebalulekile yephrogramu yokuthuthukisa abalimi nokufaka phakathi izifundo nokuvakashela emasimini. Ithimba lethu laba nemihlangano yokuxhumana eyi-109. Nazi ezinye zezinto ezenziwa.



I-study group yaseMbhongweni esifundeni saseKokstard baqedile ukuvuna ummbila wabo. Kwadingeka bazithuthe masinyane izikhwebu zabo emasimini ukuze bagwe me ubungozi bokonakaliswa yimfuyo. Izikhwebu bazithuthela emakhaya abo ukuze ziyokomela khona ngokuphelele.



I-Masoing yi-Grain SA study group entsha yase-Limpopo. Iholwa yithimba lase-Nelspruit elingaphansi kukaJerry Mthombeni. Abalimi basizwa ngokurejistela ubulungu bese kuthi emva kwalokho bafundiswa ngokuphatha inhlabathi.



Abalimi baseMetzelfontein endaweni yaseLouwsberg bamatasa bayavuna ngaphansi kweso lomxhumanisi esifundeni, uJurie Mentz.



Nakuba ummbila wabalimi baseZangotshe (esifundeni saseKokstard) wawungomile ngokuphelele u-100%, baphoqeleka ukuba bavune ngenxa yokuthi amasimu abo awabiyelwe. Abalimi babesaba umonakalo ongadalwa yimfuyo ezulazulayo.

Ukufaka INTSHA kwezolimo

USHEFU nombhali u-Alice Waters uthi: 'Kufanele sifake izingane ebundlwaneni obusha nokudla okubaxhumanisa namasiko nezolimo.' Lokhu ke i-Grain SA's Schools Programme ezama ukukuphumelelisa.

Isibalo sabantu emhlabeni kulendelele ukuba sikhule sifinyelele ku-9 bhiliyoni ngo-2050 nentsha, ephakathi kweminyaka eyi-15 kuye ku-24, lokho okunenani kweza isamba sika-14%. NgokweNhlango yezoLimo noKudla i-Food and Agriculture Organisation, intsha yasemakhaya iyona ewukhiye ekuvikeleni ukudla ngomuso. Ngeshwa, emhlabeni wonke jikelele bambalwa kakhulu abantu abasebasha ababona ikusasa labo mhlampe kwezolimo noma ekuhlaleni ezindaweni ezisemakhaya. Ukudla okuningi emhlabeni kukhiqizwa abalimi abalima ngokuncane phecelezi *smallholder* asebebadala – futhi abalimi abadala akulula ukuba ba-adopthe ubuchwebeshe obusha, obudingekayo ukuqhubekisela phambili ukulima.

Okunye ukudideka okukhulu okudinga ukulungiswa, ukuthi intsha isacabanga ukuthi ezolimo yimboni 'eyisidala.' Empeleni i-aksesi kwezobuchwepheshe, ulwazi, nokuxhumana kangcono, kanye nezimpahla zokusebenza ezingcono, ziyayiguqula indlela okwenziwa ngayo izinto. Ngakho ke sikhona isidingo esiphuthumayo sokufaka intsha kwezolimo nokungenzeka kuphela uma kukhona abasunguli benqubomgomo abanamaphupho abadala amathuba abantu abasha abanikeza ulwazi ngendlela yokuthi babone ukubaluleka nethemba kulo mkhakha. Abantu abasha kudingeka bakwazi ukuzibona beyingxenyane yoguquko lwezolimo uluzobaqondisa futhi baziqhubekele nemiphakathi yabo beye phambili.



NgoMeyi ithimba labafundisi bentsha livakashele izikole ezingama-68 liyobafundisa ngamandla ezolimo ekukhiqizeni ukudla, uphethiloli ne-fibre okusiphiliso jikelele.

Kulindleleke isizini eyethembisayo ngaphambi kwebe yinhle kakhulu ka-2020/2021

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**IPULA IMVULA IYATHOLAKALA FUTHI
NANGALEZI ZILIMI EZLANDELAYO:**
IsiZulu, IsiNgesi, IsiTswana, IsiSuthu, nesiXhosa.

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

UNYAKA WEMAKETHE KA-2020/2021 OPHELE NGO-MHLA KA-30 EPHRELI UBE YISIPHETHO SESIZINI ENHLE EMKHIQIZWENI WOMMBILA ENINGIZIMU AFRIKA. UKUVUNA KWENZE ISIVUNO SESILIMO ESIYI-15,3 WEZIGIDI ZAMATHANI, NOKUNGESEBILI KWEZINKULU EMVA KWESILIMO SIKA-2017/2018 SIKA-16,8 WEZIGIDI ZAMATHANI NESIBE NGAPHEZULU NGO-35,7% KUNALESO SIKA-2019/2020.

Ngokwe-avareji, imakethe yakuleli idimanda okulinganiselwa ku-11,2 izigidi zamathani ommbila, cishe u-5,6 wezigidi zamathani andliwa abantu, u-5,6 wezigidi zamathani ukudla kwemfuyo bese kuthi osele owe-gristing.

Odayiselwe amazwe angaphandle ngesizini ka-2020/2021 usuwonke ube u-2,8 izigidi zamathani nokungaphezulu ngo-55% kunokwangesizini ka-2019/2020. Ummbila omningi omhlophe wadayiselwa izwe laseZimbabwe u- (370 113 t), eBotswana u-(239 289 t), eMozambique u-(132 075 t) ne-Italy (127 901 t). Indawo okuthunyelwa kuyo ummbila omningi ophuzi yi-Korea u-(363 625 t), i-Taiwan (323 189 t), eZimbabwe (144 813 t) neVietnam (106 068 t).

Isitoko sokuvala sesizini ka-2020/2021 naso sikhuphuke kakhulu saya ku-1,94 izigidi zamathani kuphezulu ngo-94% kunangesizini edlule. Ngokuphrosesa oku-avareji okulinganiselwa ku-935 000 amathani, la mazinga esitoko anganela isikhathi esingaphezulu kwezinyanga ezimbili. Ngaphandle kwezilimo ezibe nesivuno esiphezulu kunalokho obekulindlekile, ukwenyuka kwezinga lokudayisela amazwe angaphandle nesitoko sokuvala, amanani entengo selokhu ebekezele emazingeni amanani amazwe angaphandle, lokhu kugququzelwa kakhulu ngamafektha amazwe angaphandle, afana neChina edimanda ukudla kwemfuyo nesimo sezulu esingasihle ezingxeneni ezithile emhlabeni.

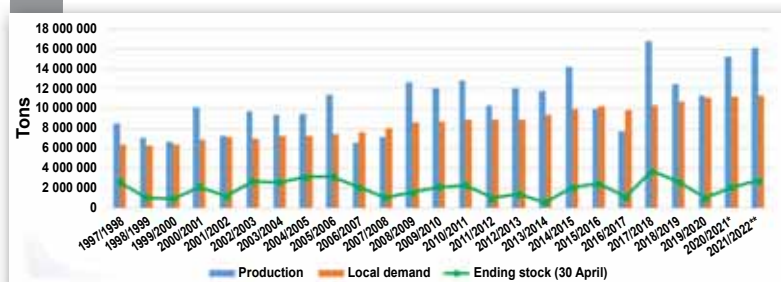
Uma kubhekwa amathuba esizini entsha aqala ngomhla ka- 1 Meyi 2021, ngokusho kweKomiti le-Crop Estimates isilinganiso sesine somkhqizo, kungaba ku-16,1 izigidi zamathani ommbila olindelekile ngesizini ka-2021/2022 u-8,9 izigidi zamathani ommbila omhlophe no-7,1 izigidi zamathani ommbila ophuzi. Uma utholakele lokhu kuzoba isilimo sesibili ngobukhulu kumarekhodi eNingizimu Afrika (iGrafu 1). Ngokulindleleka kwesivuno esihle kule sizini, idimandi yasekhaya ingahle ikhule ngokulingene cishe ngo-1% iqhutshwa umkhakha wokudla kwabantu. Okuthunyelwa emazweni angaphandle kulindleleke ukuba kume lapho kukhona ku-2,8 izigidi zamathani. Isitoko sokuvala sikhule ngo-41% ekupheleni kwesizini, okuzokwanela idimandi cishe yezinyanga ezintathu.

Isizini yokuvuna ummbila iyaphithizela futhi abakhiqizi basebenza kanzima behambisa umkhizo kuma-silo. Okulindlekile ukuthi kufanele kube nengcindezi encane kumanani, kulandela umlando wethrendi ngesikhathi sokuvuna. Kodwa, uma isikhathi sokuvuna kuyinto engalandelwa kingenzeka kube khona ukuchichima ezimakethe zamazwe, okungasekela amanani aphezulu ezinyangeni ezimbalwa ezizayo. Lokhu kungadalwa yizimo zesomiso ezihlasele eBrazil nakwezinye izingxenye ze-USA. Ukwengeza kulokho, iChina idimanda ummbila omningi e-USA, lokho kuyinselelo kumasaplayi omhlaba, kuzokwenza amanani okuhweba emazweni angaphandle angene onyakeni wesishiyagalombili ephezulu. Ukunyakaza kwe-avareji yamanani phakathi kuka-Meyi 2020 noMeyi 2021 kwabe kungu-34% kommbila ophuzi no-28% kommbila omhlophe. ■



**U-IKAGENG MALULEKE,
USOMNTHO WEZOLIMO
KWA-GRAIN SA**

1 Isaplayi, idimandi nesitoko sokuvala sommbila eNingizimu Afrika.



Uthombo: I-Grain SA, SAGIS ne-NAMC