



Isithombe: Benro Botha

Thatha amasampuli enhlabathi ukuze uthole izilimo ezinempilo

UKUHLAZIYWA KWENHLABATHI NGELINYE 'LAMA-BHOKISI AMATHULUZI' LOKULAWULA UKUVUNDA KWENHLABATHI NOMSOCO PHECELEZI *NUTRITION* YESITSHALO. IMALI ECHITHWA NGONYAKA EKUKHQIZWENI KWESILIMO KUFANELE KUSEKELWE UMBIKO WOKUHLAZIYWA KWENHLABATHI YEPULAZI. NGAKHO KE KUBALULEKILE UKUTHATHA AMASAMPULI ENHLABATHI AYIQINISO AYOHLAZIWA YILEBHU.

Le athikhili izokunikeza imihlahlandlela ekuthatheni, ukuphrosesa nokulebula isampula emele yenhlabathi ngqo.

INHLOSO YESAMPULA YENHLABATHI

Ukuhlaziywa kwenzelwe kubalulekile kumlimi wesilimo ukuze awazi amazinga omsoco phecelezi nutrition esitshalo akhona enhlabathini, ukuze uhlonze isimuncwana senhlabathi nomsoco owentulekayo esitshalweni. Kuphinde kube yithuluzi elibalulekile asekelo ngalo iphogramu yokufaka umcako phecelezi liming, kanye nephogramu yakhe kamanyolo, yesitshalo esizolandela.

ISIKHATHI SESAMPULA

- Ngokwejwayelekile, insimini kufanele kwenziwe amasampuli

njalo eminyakeni emithathu, njengoba izigaba zomsoco/nyuthriyanti zingaguquka emva kwemnyaka emithathu kuze kudingeke ukuba ukulungiswe ngamakhemikhali.

- Kuhle ukungawenzi amasampula onyakeni owodwa emva kokufaka umcako noma emva kokufaka umanyolo ngqo.
- Isikhathi esihle kakhulu sokuthatha amasampula enhlabathi kungesikhathi uqeda ukuvuna isilimo, kuye cishe ezinyangeni ezintathu ngaphambi kokutshala isilimo esilandelayo. Lokhu kuzonikeza umlimi isikhathi esanele sokulungiselela amakhemikhali okulungisa, uma kudingeka.

OOQA AMASAMPULA NGOKUQONDE NGQO

Uma kutholwa amasampuli enhlabathi, aphroseswa elebhu ngokuwomisa kuhhavini owomisa inhlabathi, ngokuvamile ezingeni lika - 40°C kuye ku- 60°C. Isampula ihlanganiswa ibe uhlobo olulodwa ngokuthi isefiwe futhi igaywe. Kula masampuli aphrosesiwe, isampula yokuhlola phecelezi test ingaba u-25 kuphela (ithispuni) bese iyahlaziywa. U-25 g wenhlabathi kufanele imele insimu yonke.

Uma umlimi ebe budedengu ekuqoqeni kwakhe isampula, umphumela welebhu nawo uzokukhombisa umphumela ongaqondile wesimo sangempela samanyuthriyanti ensimu. Umthetho omdala, obizwa 'ukufaka udoti, ukukhipha udoti', phecelezi '*garbage in, garbage out*', nakho kuyasebenza ekuthatheni amasampula enhlabathi.

UKUHLOLA i-futures market

KWI-ATHIKHILI YESINE NEYOKUGCINA, I-FUTURES MARKET KANYE NE-FORWARD MARKET IZOHLOLWA. UKWENGEZA, ISIBONELO ESIPHATHEKAYO SI-ZONIKEZWA UKWENZA UMFANEKISO WOMSEBENZI WE-FUTURES CONTRACT.

UKUCHAZWA I-FUTURE MARKET

I-commodity futures market yindawo yomphakathi (JSE-Safex) lapho kwenziwe khona izivumelwano zokuthenga nokudayisa ngentengo okuvunyelwene ngayo futhi nangosuku olubekiwe, okulawulwa yi-sivumelwano esisezingeni. Isivumelwano senziwa sibe sezingeni lekhwalithi, ikhwantithi, usuku lokudiliva kanye nendawo yokudiliva, umehluko kube yinani lentengo elinqunyiwe ngokwe-nqubo ye-okshini ephakathi komthengi (umlimi) nabadayisi (isilo noma isigayo) e-futures market.

Isizathu esibalulekile esenza kusungulwe -i-futures market, ukuthi abalimi (abangabavikeli bamanani entengo) bengasebenzisa i-futures contract ukulinganisa amaphozishini abo e-cash market. Lokhu kuyabasiza abalimi ukuba bakwazi ukulawula ubungozi bokuguquguka kwamanani, njengoba bangakwazi ukuguqula lobu bungozi busuke ku-cash market buye ku-futures market.

I-futures markets ibandakanya abahlanganyeli abehlukene, okubalwa kubo:

- **Ama-Hedgers:** Labo abalimi bezilimo abasebenzisa i-futures contracts ukuzivikela ekuguquguqukeni kwamanani entengo.
- **Ama-Speculators:** Labo abantu noma amaqembu ezama ukwenza imali ngokuguquguquka kwe-future prices ngaphandle kokuba nomkhqizo uqobo.
- **Ama-Contracts:** I-Futures contracts amazinga ezivumelwano zokuthenga nokuthengisa impahla esikhathini esizayo, ngamazinga eshiwo ngenhla.
- **I-Margin:** yidiphozithi edingekayo (imali) imali phambili njengokubhangqeneyo. Lokhu kuyasiza ekunciphiseni ubungozi bokuthi wahluleke ukufeza izibophezelo zesivumelwano.
- **I-Price discovery:** Amafektha axhunyaniselwe namandla e-saplayi nedimandi, izimpawu zezomnotho, imicimbi ephathelene nepolitiki yezezwe nombono wemakethe onomthelela kumanani entengo.
- **I-Settlement:** I-Futures contracts kuvunyelwana ngawo ngezindlela ezimbili ezibalulekile. Eyodwa ukushintshanisa i-asethi ngqo. Enye ukushintshanisa ngokheshe, ngokuhambelana komehluko phakathi kwentengo okuvunyelwene ngayo nenani lemakethe.

Amafektha enza umehluko phakathi kwe-forward ne-futures contract:

- **I-Standardisation:** I-Futures contracts ifana namaphakheji asekhandiwe edayiswa ngokushintshanisa okuhlelekile. Anemigomo engaguquki, efana nekhwantithi esethiwe kanye nosuku lokuphelelwa yisikhathi. I-Forward contracts, ngakolunye uhlangothi, afana nezivumelwano ezenziwe amakhasimende phakathi kwabantu ababili. Angashintshwa kuye nga-

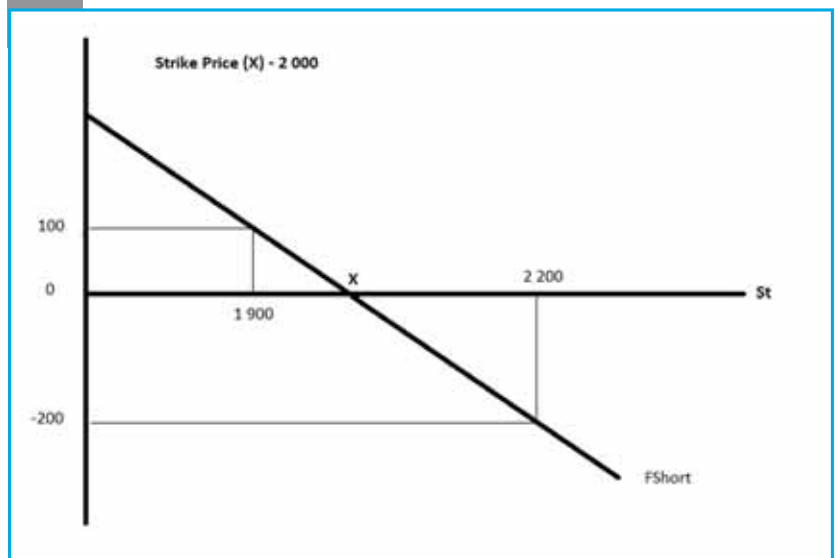
lokho abavumelana ngakho, bawenze athambekele/apeteke kakhulu futhi aqondane nomuntu.

- **I-Trading venue:** I-Forward contracts ukudayiselana ngqo okuphakathi kwabantu ababili, njengezivumelwano ezenziwa ngasese. Ayikho indawo ephakathi nendawo yokuhweba (JSE-Safex), ngakho ke kufana nokuxoxisana phakathi kwabantu ababili.
- **I-Counterparty risk:** Kuma-futures contract, abathengi nabadayisi bakhokhelana ngqo omunye nomunye. Esikhundleni salokho bakhokhelana kwi-clearing house (JSE). Uma kuthengiselwana, isibophezelo sabathengi sihambisana nesibophezelo sabadayisi, bese kuthi i-clearinghouse ibe ngumlingani wezinhlangothi zombili ezihwebelanayo. Loluhlelo luyasiza ekunciphiseni ubungozi kuloyo oyedwa ongasakwazi ukuhlangabezana nesibophezelo, ngoba i-clearinghouse iyakuqinisekisa ukuthi wonke umuntu kumele asigcine isivumelwano.
- **I-Margin and marking to market:** kwi-futures contracts, abahwebi kufanele bakhokhe imali phambili leyo mali kuthiwa yi-initial margin. Le mali isebenza njengemali eyisivikelo/ukuvula isikhala uma kwenzeka kuba khona okulahlekelwa okuthize. Futhi ke, zonke izinsuku, i-value ye-futures contract uyalungiswa ihambelane namanani entengo emakethe namuhla. Lokhu kuyasiza ekugcineni izinto zikahle futhi kuqinisekisa ukuthi abahwebi baba nemali eyanele yokukhava izinguquko ze-contract value. I-Forward contracts, ngakolunye uhlangothi, akuvamile ukuthi babe nazo izinkinga ezinjalo, yize kunjalo kodwa izinhlangothi ziyaqhubeka nokubeka imali, kuye ngokuthi bame kanjani ngokwezimo zokwebolekwa (imali).

Sekukonke, nakuba kokubili i-futures markets ne-forward contracts zenza izinto ezifanayo, ziyehlukana ngokwamazinga emigomo, i-liquidity, i-counterparty risk, ukuguquguquka phecelezi flexibility, umthetho nophawu emakethe, kwenze ukuthi ngayinye ifanele izinhlobo ezahlukene zezimakethe ezibandakanyekayo namaqhinga okuhweba.

1

Umfanekiso wokunquma emakhoneni ensimu, uthathe okusamasapuli.



Umthombo: Grain SA

ISIBONELO ESIPHATHEKAYO

Ifiga 1 umfanekiso we-payoff diagram yokushintshana ngemali noma ngezimpahla sekuzochazwa.

- Ulayini olebulwe ngokuthi yi-**FShort** umele indawo emfushane yomlimi phecelezi u-*John's short position*, kanti umugqa olebulwe ngo-**St** umele i-*future price*.
- Umlimi u-John, owavuna u-100t wommbila ngasekuqaleni ku-kaMeyi, uhlose ukuwudayisa nge-*future contract* kaJulayi 2024. Njengoba usayizi owodwa wesivumelwano kwa-JSE ulingana no-100t, uzosungula i-*short future position* eyodwa azodayisa ummbila wakhe. Uthole intengo yemakethe yamanje yommbila ngoMeyi ka-R2 000/t, usebenzisa lokhu njenge-**Strike price** (X).

Ukwenza inzuzo

Uma kwenzeka intengo yemakethe phakathi kosuku ingena esivumelwaneni sikaJulayi 2024 phecelezi *July 2024 contract* kanye nosuku lokwedlulelwa yisikhathi ngoJulayi iyehla futhi ivale ku-R1 900/t, umlimi uJohn uzokwenza inzuzo ka-R100/ithani. Le nzuzo yatholakala ngenxa yokuthi ummbila wakhe wawudayisa ngo-R2 000/t, okungu-R100/t ngaphezulu kwenani lasemakethe elikhona njengamanje lika- R1 900/t.

Ukulahlekelwa

Uma kwenzeka inani lentengo emakethe phakathi kosuku angena ngalo esivumelwaneni sikaJulayi 2024 kanye nosuku lokuphelelwa yisikhathi ngoJulayi likhuphuka futhi livale liku-R2 200/t, umlimi uJohn uzolahlekelwa u-R200/t. Walahlekelwa ngenxa yokuthi wadayisa ummbila wakhe ngo-R2 000/t, okusho ukuba ngaphansi ngo-R200/t kunenani lentengo emakethe elingulo-R2 200/t.

ISIPHETHO KULOLU CHUNGECHUNGE

Lolu chungechunge lwama-athikili lwasungulwa ngenhloso yokunikeza abafundi ulwazi olugcwele ngezindlela ezahlukene zokudayisa ummbila. Lolu lwazi lubalulekile, njengoba luhlomisa abalimi ukuze benze izinqumo eziphusile mayelana nokudayiswa kommbila wabo. Ukwenza isamari:

- Ku-athikili 1, **ukuvikelwa kwamanani entengo yokusahlamvu kungonga ezindlekweni**, okwakushicilelwe oshicilelweni olwaphuma ngoJanuwari/Februwari, izisekelo zokuvikela amanani entengo kwahlaziywa, kwachazwa ngokucacile ukubaluleka kwayo. Umqondo omfushane wezindlela ezahlukene zokudayisa okusahlamvu zavezwa.
- U-athikhili 2, **ukuqondisa okungakhethwa: ukukhetha i-put noma i-call**, okungatholakala oshicilelweni lukaMashi, umehluka phakathi kwe-*call* ne-*put option* kwaqondiswa, kanye nokuhlahlwa kwendlela yalapho ngokuthi kuzosetshenziswa nini ngakunye.
- U-athikhili 3, **uqinisekisa i-optimum grain marketing**, eyashicilelwa oshicilelweni lwango-Ephreli, umqondo we-*spot price* wachasiswa, ukuchaza ukubaluleka kwayo nokubukeka kwayo.
- Okokugcina, ku-athikhili 4 (le athikhili) umqondo wokuhlola i-*future market*, ukunikeza umqondo ojulile ngezimo ezilandelayo.

Ngokulandela le mihlahlandlela, umlimi engasungula iqhinga lokumaketha eliklanyelwe hhayi ukukhanda inzuzo kuphela kodwa futhi ukuqinisekisa ukuba nesikhathi eside epulazini. ■



U-JOHAN TEESEN, I-INTERN KASOMNATHO WEZOLIMO, NO-LERATO RAMAFOKO, I-APPLIED KASOMNATHO EYI-INTERN, BOBABILI ABAKWA-GRAIN SA

IZWI (LOKUGCINA) LIKA...

Jerry Mthombothi



EMUVA KWEMINYAKA ENGAMA-20, SEYIYIKHATHI SOKUTHI NGITHI KHUMU. NGIBONGA KANGIPHEZI KWA-GRAIN SA NGOKUNGINIKA ITHUBA LOKUFUNDA AMAKHONO AFANELE UKUSIZA EKUTHUTHUKISENI ABALIMI.

Ngisebenze nama-*study group* angama-25 ane-avareji yabalimi abangama-50 i-gruphu ngayinye. Ngo-2017 sengeza izigodi eziyisithupha zaseLimpopo ohlwini lwami. Umthelela owenziwa yiPhrogramu eThuthukisa aBalimi kula balimi, ucace bha. EMPumalanga naseLimpopo, iningi labalimi lathola isivuno esithuthukile sasukela ngaphansi kwe-1 t/ha saya cishe ku-5 t/ha, lapho abanye abalimi baze bathola isivuno esingaphezulu kuka-8 t/ha.

Ngifisela bonke abalimi inhlanhla enkulu. Qhubekani nokusebenza kanzima. Qinisekisa ukuthi niyazilandela izeluleko zesitafu esiqeqeshayo nabanye ababambe iqhaza abazibandakanya ekuthuthukiseni amakhono enu, ulwazi nokuqeqesha. Ngokwenze njalo, ibhizinisi lenu lokulima lizoletha inzuzo nenqubekela phambili.

Nazi izinto ezibalulekile okufanele nizikhumbule:

- Yenza uhlelo ngaphambi kokuba wenze noma yini epulazini.
- Thola imakethe ngaphambi kokuba utshale noma yimuphi umkhqizo.
- Khetha izinsuku ezifanele zokutshala ne-*cultivar* efanele.
- Yenza isifundo esifanele. Yenza iphrofayile yenhlabathi ukuze uhlole i-*pH* yenhlabathi nokuthi wazi ukuthi yiluphi uhlobo lukamanyolo okufanele lufakwe. Yenza uhlolo lwenhlabathi uhlole ukushona phansi kwenhlabathi, isimo phecelezi i-*texture* ne-*structure*.
- Thatha amasampula enhlabathi ukuze uhlole i-*pH* yenhlabathi nokuthi wazi ukuthi yibaphi omanyolo ongabafaka. Qala ngokungisa inhlabathi ngaphambi kokuba utshale.
- Sebenzisa izibulala-khula phecelezi *herbicides* ukulawula ukhula. Lawula izinambuzane nezifo ukuze uthole umkhqizo oyikhwalthi ephezulu.
- Ungawasusi amehlo akho emasimini ubheke nokukuthi yonke into ihamba kahle. Ibhizinisi lakho lokulima ungalilawuli ukuze.
- Gcina irekhodi lakho konke lokho okwenzayo.

Sinifisela izilokotho ezinhle kule sizini ezayo yokuvuna futhi uma nidinga usizo futhi engekho useduze, ningangishayela ucingo.

– U-Jerry Mthombothi, ubelokhu eyingxenywe yePhrogramu yokuThuthukiswa kwaBalimi eMpumalanga eminyakeni angama-20 edlule, usethathe umhlalaphansi ekupheleni ku-ka-Ephreli 2024. ■

Thatha amasampuli enhlabathi...

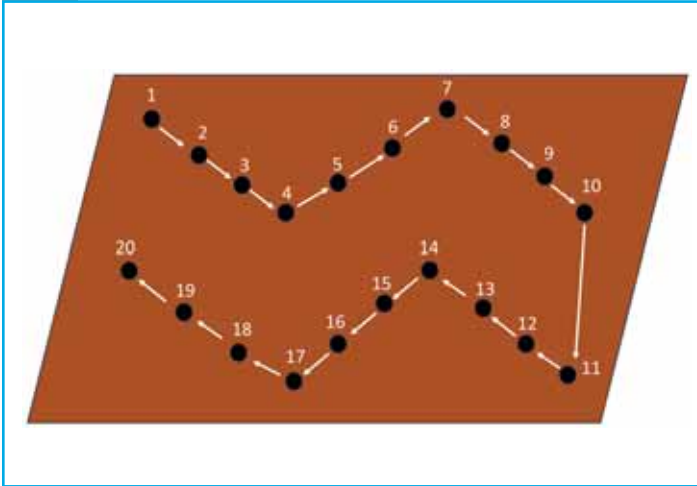
Inhloso ukuqoqa isampula emelele insimu yakho. Okungenani sebenza ngokuzikhandla ekuqoqeni isampula emele kahle yonke insimu, kunokuthi unqamulele futhi uqoqe okusamasampuli phecelezi *subsamples* ambalwa ezindaweni ezingayimele insimu.



Sebenzisa isikhwama sikupulasitiki ukuqoqa amasampula enhlabathi.

1

Umfanekiso wephethini eyi-zig zag yokuthatha ama-subsamples ensimini yonke.

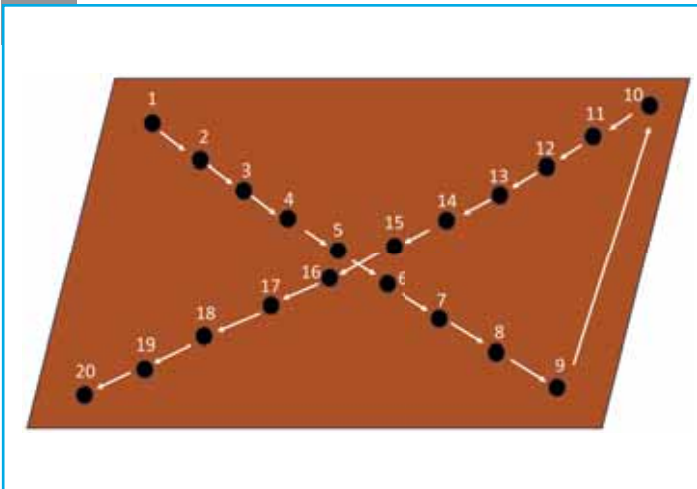


umfanekiso wephethini ka-zig-zag ensimini yonke no-**figa 2** umfanekiso wephethini ehamba ngokunqamula.

Thatha ama-*subsample* phakathi kolayini bezilimo zesikhathi esedlule uma esabonakala. Uma insimu yakhe bese-ilinyiwe futhi olayini besilimo esedlule bengasabonakali, thatha ama-*subsample* noma kuyiphi indawo. Gwema ukuthatha ama-*subsample* endaweni engaxhumene nensimu, efana nezindonga, emisele, amatheresi, olayini bothango oludala, kuzilimo ezisematsheni, umanyolo omdala noma izinqwaba zomcako, izindawo ezingamakhaphosi noma ezinezikhukhula, isihlabathi esichithekele ngaphandle noma eduze kwezihlahla.

2

Umfanekiso ehamba ngokunquma emakhoneni ensimu yakho, ukuthatha ama-subsamples.



UTHATHWA KUPHI AMASAMPULA

Ingxubevange yamasampula equkethe okungenani u-15 kuya ku-20 wama-*subsamples* (uma emaningi kungcono), athathwe ensimini yonke. Uma insimu inkulu, kusho ukuthi kuzodingeka ama-*subsample* amaningi. Sebenzisa lo mthetho olandelayo:

- Emasimini amancane kuno-10 ha kuya ku-15 ha, okungenani thatha ama-*subsample* angu-15 kuye ku-20.
- Emasimini aphakathi kuka-10 ha kuya ku-30 ha, thatha ama-*subsample* asukela ku-20 kuya ku-40.
- Emasimini aphakathi kuka-30 ha kuya ku-100 ha, thatha ama-*subsample* angu-40 kuya ku-60.
- Kuphakanyiswa ukuthi amasimu angaphezulu kuka-100 ha ubukhulu ahlukaniwe kabili noma ngaphezulu bese uthatha amasampuli ensimini ngayinye ngokwehlukana.

Amafiga angaphansi akhombisa ukuthi ungahamba kanjani insimu yonke uqoqa ingxubevange yesampula, uma isidingo sikhona. **Ufiga 1**

INDLELA YOKUTHATHA AMA-SUBSAMPLE

1. Ukuthatha amasampuli ngokushona phansi

Amasimu amaningi alinywayo alinywa okungenani cishe u-250 mm ukushona phansi phambilini. Ngakho ke *i-topsoil* ixubile ukushona phansi. Kunconywa ukuthi uthathe amasampuli okungenani aphantsi ekujuleni okungu-200 mm ukushona phansi, kodwa okungajulile ngaphezu kuka-250 mm.

2. Amathuluzi okuthatha amasampula

- I-*soil auger* yithuluzi elihle kakhulu ekuthatha isampula, ngoba ingena kahle enhlabathini, ngisho noma inhlabathi yomile, okuvamise ukuba njalo ngesikhathi sesizini eyomile emva kokuvuna. Thela inhlabathi ku-*auger* esiqukathini esihlanzekile esifana nebhakede leplastiki, noma isikhwama seplastiki esihlanzekile. Qaphela: Ungawusebenzisi upulasitiki kamanyolo noma isikhwama esiphatha ukudla kwezilwane, ngoba lokho kuqukethe amakhemikhali anganukubeza amasampula enhlabathi bese ephendukezela imiphumela yohlaziyo.
- Okunye okulandelayo okungcono kakhulu ungakhetha **ifosholo**. Gubha ushone phansi enhlabathini uye kusampuli eya phansi ngokufunekayo. Thola ucezwana oluqondile lokumbiwe, cishe kube u-25 mm ugqinsi efosholweni. Chitha uhhafu wefosholo (e.g., uhhafu wesinxele) futhi ungeze uhhafu wesokudla wocezwana esqukathini.

3. Ukuphrosesa ingxube yesampula

Isinyathelo esilandelayo esibalulekile ukuthatha isampula yokugcina engxubeni yesampula.



Umlimi osemncane uthatha isampula yenhlabathi ngesikhathi sesigaba sokuqeqesha esasethulwa yi-PGP Farmer Development Programme. Abalimi bafundiswa ngokubaluleka kokuthatha amasampula enhlabathi, ukuhlaziywa kwenhlabathi eshona phansi nempilo yenhlabathi.

- Sabalalisa ingxube yesampula esiqebethwini esihlanzekile futhi okungenani esikhwameni sikapulasitiki esihlanzekile.
- Hlanganisa kahle inhlabathi. Thatha amasampula amancane amaningi alinganiswa ngesipunu sedizethi esigcwele ezindaweni ezahlukene bese uwafaka esikhwameni sesampula yenhlabathi.
- Uphinde futhi, uhlanganise inhlabathi, thatha amanye amasampula amancane futhi uwathele esikhwameni sesampula. Kungaba cishe yinkomishi eyodwa kuya kwezimbili zenhlabathi.
- Vala kahle isikhwama sesampula, ngokusonga lapho sivuleke ngakhona bese ubopha ngesitephuli.

4. Ukulebula isampula

Ilebhu izikhombisa imininingwane egcwele eyayinikezwa umlimi embikweni wocwango. Ulwazi oluyisisekelo lufanele lube yigama lo mlimi, igama lepulazi kanye negama le nsimu. Ulwazi olwengeziwe lunganikezelwa, okufana ne-*topsoil*, *subsoil*, nokuya kwesampula, isilimo esisensimini kanye nendawo engavundile vs indawo enhle/evundile.

Ilebuli futhi kufanele linamathelise esikhwameni sesampuli, ukuze lingalahleki endleleni eya elebhu. Ngokuvamile liboshelwa ngesitephula phansi ngasemphethweni wesikhwama sesampula. Ungayifaki ilebula ngaphakathi esikhwameni sesampula, iyashesha ukuba manzi, idabuka kalula futhi ungabe isafundeka.

5. Ukuphatha nokuhambisa ngomkhumbi kwesampula yokucina

Gcina amasampuli endaweni epholile emotweni. Ekhaya, onke amasampula wagcine esikhwameni esiqinile sikapulasitiki. Lonke ulwazi lwamasampuli lubhale lube uhla ephapheni bese ulufaka esikhwameni sikapulasitiki. Lokhu kuzokwenza ukuba kwenzeke ukuba ilebhu ihlale ukuthi ngabe bawathole onke amasampuli. Wabeke endaweni epholile, eyomile.

Amasampula kufanele athunyelwe elebhu masinyane (kungcono ngosuku olulandelayo) ukuvikela ukuthi lungabikhona oshintsho lwamakhemikhali olungadalwa yi-*soil microbes*.

6. Umbiko wocwango

Ngokuvamile ilebhu ucwango nombiko iluphothula emavikini amabili, emva kwalokho uthunyelwa kumlimi nge-imeyili. Kunconywa ukuthi umbiko uthunyelwe kusosayensi wenhlabathi noma ku-*agronomist* ukuze ahumushe uhlaziyo kuthi enze iziphakamiso ngokwemiphumela yohlolo.

ISIPHETHO

Ilebhu icwanga lokho enikwe khona. Ummthetho we-‘faka udoti, khipha udoti’ usebenza ngempela. Kusemahlombe omlimi ukuqoqa amasampuli enhlabathi ngokufanele. Umsebenzi obalulekile wokuqoqa amasampula enhlabathi ukuqoqa ama-*subsample* ahlukene. Kufanele kwenziwe ngendlela efanele nangokudepha kwenhlabathi okudingekayo. Qinisekisa ukuthi ulwazi oludingekayo luhanjiswa nesampula elebhu.

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**U-MARTIENS DU PLESSIS,
USOSAYENSI WENHLABATHI/
INHLABATHI KANYE NO-
MELULEKI NGESILIMO**

Yiba nesilinganiso **SOKULINGANISA** impumelelo

INDLELA EYODWA YOKWAZI UKUTHI NGABE UYATHUTHUKA NOMA CHA NJENGOMLIMI KUFANELE UBE NESILINGANISO PHECELEZI *BENCHMARK* SOKULINGANISA IMPUMELELO YAKHO. UKUZE UTHUTHUKE KWEZOKULIMA, KUDINGEKA WENZE INQUBEKELA PHAMBILI NJALO EMINYAKENI YONKE. LOKHU KUNGENZIWA NGOKUQOQA NOKUHLAZIYA IDATHA KAKHULU.

Uma ungakaze uyirekhode idatha, manje yisikhathi sokuba uqale ukwenza lokho. Ukuze uqale, cabanga ngokurekhoda izinombolo ongazikhumbula, ezifana nedatha yesizini yokugcina. Kubalulekile ukurekhoda ikhwantithi yedatha – isivuno, amanani, izinsuku zokutshala, izindleko, imali engenayo njll.

Ungenza isinqumo sokuthi yimiphi iminxa okufanele uyibheke. Uma ususithathile isinqumo sokuthi yikuphi ofuna ukugcina iminingwane yakho, khetha indlela elula yokuqoqa ulwazi. Lokhu kungaba yi-*excel spreadsheet* noma ukubhale phansi kwi-*logbook*, noma yikuphi okufunayo.

Yiba neqiniso, qonda ngqo, landelanisa futhi ungashintshi ekuqiniseni amarekhodi. Zama ukungena emkhubeni wokurekhoda ulwazi njengokufika kwalo uma usuqedile ukuvuna ensimini, bala i-avareji yesivuno sakho kuleyo nsimu usebenzise iziliphu ze-*weigh* futhi ukurekhode. Uma usebenzisa imali ekunakekeleni, yirekhode. Uma uthenga ama-*input*, rekhoda izindleko zakho. Zama ngamandla onke kungabikho oku-kuphuthelayo, njengoba lokhu kuzoguqula ukuqonda ngqo kwedatha lakho. Zama ngamandla akho onke kungabikho okukuphuthelayo, njengoba lokhu kuzoshintsha ukuqonda ngqo kwedatha yakho.

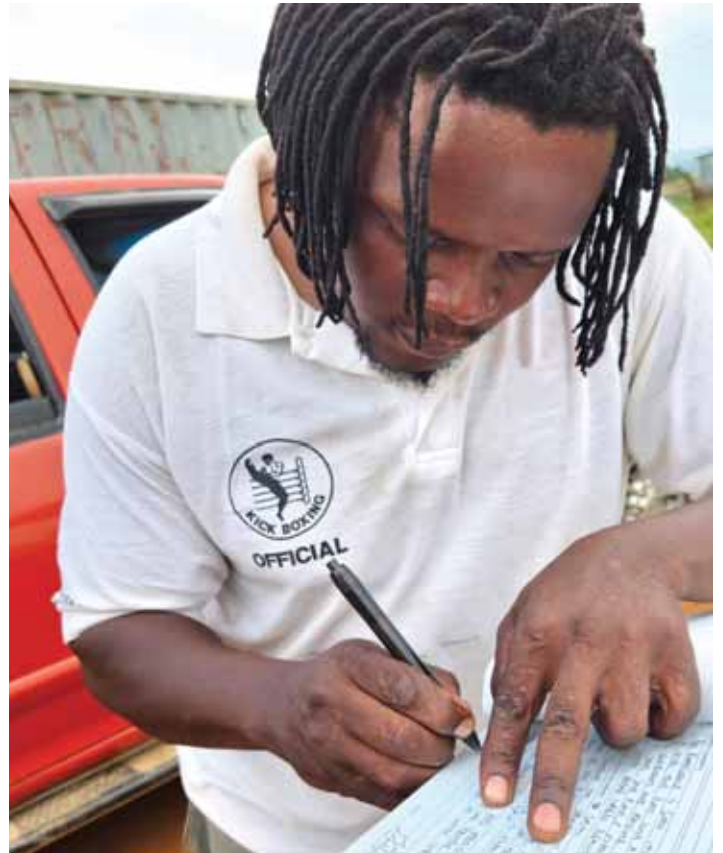
NGABE YINI OKUFANELE UYILINGANISE?

Umpfumela wokulima wonyaka othile yakhiwe ngezibonakalo zomkhiqizo kanye nomkhiqizo wezilimo zesikhathi noma okulinganisiwe. Uma usucubungule iminingwane le zibonakalo, ungaqala ukwenza isilinganiso sezinga olunganisa ngalo.

Izimo ezinhle noma ezimbi kanye nezilinganiso zomkhiqizo wamandla okulawulwa kwepulazi lakho kufanele kungazikhohlwa izinhlobo zomhlabathi ezahlukeneyo, ukushona phansi kwenhlabathi, ukushona phansi okufanele kwezimpande, iklayimethi kanye ne-avareji yemvula yesikhathi eside. Isivuno sesizini ka-2023/2024 singaba ngaphansi kakhulu kwe-avareji eminyakeni embalwa edlule, ngenxa yemvula engaphansi kwe-avareji kanye nesivuvu sokushisa esikhulu ezilimni eziqhakazayo zasehlobo noma esigabeni sokumila kwezinhlamvu phecelezi (*seed-filling*). Izivuno zokugcina zizokhombisa ukuthi ngabe iyiphi indlela yokulima ekusizile ukukhiqiza isilimo.

Iminyaka emihle nemibi kwenza izimo zesikhathi eside sokukhiqiza.

Nakuba umlimi engakwazi ukulawula iklayimethi, ukugcina amarekhodi esimo seklayimethi kuzokusiza ekuqondiseni kangcono



Ukuqathanisa ulwazi phakathi kwenhlabathi namasizini kuzokusiza ekutheni uthathe isinqumo eziphusile.

idatha. Ngakho ke qinisekisa ukuthi uyazirekhoda izibonakalo ezifana nemvula kanye nezehlakalo zesimo sezulu esibucayi – isichotho, isomiso njll.

Isibonelo, uma imiphumela yesivuno sakho iphansi futhi namarekhodi akho emvula ephansi ngonyaka ofa-nayo, ngalokho kungcono ukuqondisise ngomehluko. Okunye okuhle ngokurekhoda ukuthi ungafuna ukufunda ukuze ube nokuqondisisa kangcono ngesimo sezulu, futhi kwezinye izikhathi ukwazi ukwenza izibikezelo ngokuthi singaba njani isimo sezulu esikhathini esizayo.

UKUHLOLA INGCEBO/AMANDLA OKUSEBENZA

Ukuhlolwa kwamandla kuzothinta izindawo ezifana nokulungela kwepulazi izilimo, imfuyo, noma amalungelo amanzi okunisela, ingqalasizinda efana namadamu, amashede kanye nokuphroseswa kwezitshalo, imigwaqo kanye nezimo zamadlalo, phakathi kokunye. I-*climatic zone* yepulazi kanye ne-avareji yokusabalala kwemvula ngonyaka kuzoba nomthelela emandleni e-*agronomic* yesilimo esizokhiqizwa.

Izinhlobo zenhlabathi nokujula kwenhlabathi kuzoguquka kancane ngokuhamba kweminyaka. Lokhu kusho ukuthi ukuhlola okwenziwa ngesikhathi esisodwa kwemihlaba yakhe yonke asikho isidingo sokuthi kuphin-dwe njalo ngonyaka. Ukuhlanganisa nokuthathwa kwamasampula nesimo sokuvunda, ifosfeythi, iphothezi-yamu

kanye namazinga e-pH ngamafekhazi ayisilinganiso afanele ukwaziwa ngumlimi ngokuphelele. Uku-fakela umanyolo isilimo ngasinye kungenziwa ngendlela efanele.

Uhlelo lweputlazi emva kwalokhu kuhlola kufanele kube ukususwa konke ukutshala kuyo yonke imihlabathi engashonile, nemihlabathi engavundile emadlweni. Mhlasimbe imihlabathi emaphakathi nenamandla aphezulu ingatshalwa ngokulandela isivuno esiphezulu sesistimu yokujikelezisa phecelezi *high-yield rotation system* kanye nezilimo ezikwaziyo ukubekezelela isomiso emhlabathini onamandla amaphakathi. (Uma un-gayiqondisisi *i-gross margin analysis*, ucela ukuthi ufunde ukuthi lomqondo uchazani.)

Ukubheka amandla enhlabathi ngesinye isibonakalo ekunqumeni ngezanga lesivuno elizokhanda intengo yama-*input*. Umanyolo omningi enhlabathini enamandla amaphakathi ngeke uguquke isivuno esikhulu. Ukuhlaziya okuphathekayo kunomthelela esivunweni futhi kanjalo ekukhandaneni imali engenayo nenzuko.

Amazinga esivuno emihlabathini emihle nemaphakathi kufanele kukhwantifaywe ukuqinisekisa ukuthi uzoletha inzuzo futhi unqume ngentengo yama-*input* edingekayo ukuze kukhiqizwe isivuno esilindelekile. Um usanda kuqala ukulima, thola ukuthi abalimi asebenolazwi bakhiqiza ini enhlabathini efanayo njengesil-inganiso osiqondile.

UKULINGANISA, UKWAZI

Isibonelo, izimpawu ezibalulekile zomsebenzi phecelezi *Key performance indicators (KPIs)* yizindlela zo-kulinganisa, noma yindlela yokulinganisa umsebenzi noma umkhiqizo ongalandelela isivuno nge-hektha yobhekilanga, ukolo, ummbila ubhontshisi isoya, ubhontshisi owomile, amabele nakunye kumasizini aman-ingi. Igruphu yama-*KPIs* engalingiswa ngamanye futhi ehlanganiswe ukukhiqiza isithombe yesilimo sakho osilimo ngasinye esedlule, isizini yamanje noma yesikhathi esizayo sokukhiqiza.

Abalimi bokusahlamvu ngokuvamile bakhumbula iminyaka emihle kodwa bakhohlwe ngeminyaka yesomiso esibi. Uma ungakwazi ukubheka emuva eminyakeni edlule, hlanganisa iziliphu zokusahlamvu okudiliviwe ngqo uqhathanise nendawo etshaliwe. Iminyaka emihle nemibi kwenza izimo zesikhathi eside sokukhiqiza.

Ubungozi bezezimali bokukhiqizwa ngesilimo ngasinye esihlukile epulazini elithile noma enhlabathini kun-ganqunywa ngokwamarekhodi ngqo. Isibonelo, uhlaziyo lungakhombisa ukuthi ukukhiqiza ummbila ongenisa inzuzo ungaba yimpumelelo enhlabathini yakho ejulile nevunde kakhulu. Ezinye izilimo ezifana nobhontshisi isoya, ubhekilanga noma amabele kufanele kufakwe ohlelweni lokujikelezisa ukuze benze ibhizinisi lokulima lenziwe ngobungozi obuphansi bezimali. Okungenzeka kwezomnotho kunqunywa ngokukhiqiza kanye na-manani entengo yesikhathi esizayo esetshenziswa ukuphuthula uhlaziyo oluphelele lwe-*gross margin*.

Amanye amafektha ongawalinganisa nohlangothi lwemali engenayo kungaba yisivuno ngokwamakhilo-gramu noma amathani ihektha ngalinye, intengo yethani ngalinye kanye nesamba sengeniso yebhizinisi.

Ngasohlangothi lwezindleko zembewu esentshenzisiwe, umphumela uzohlanganisa ama-kgs/ha et-shaliwe, ama-*kernel* noma izinhlavana ezitshaliwe ihektha ngalinye, kanye nenani lezitshalo ihektha ngalinye. Umanyolo, okufaka phakathi uku-khula kwezimpande, azifafazi zamahlamvu kanye nama-*micronutrient*, njenge-*input* enkulu kufanele futhi kulinganiswe ngokwama-kgs/ha okuhleliwe futhi kwatshalwa.

Isikhungo ngasinye sezamanani entengo kufanele silinganiswe nalokho okwakuhleliwe nalokho okwakuset-shenzisiwe kunoma iphi isizini: Ama-*herbicides*, ama-*insecticides*, ama-*fungicides*, umshwalense wezilimo, amafutha (*fuel*), ukuvuna, uzisebenzi zamasizini, ukuphakheja imethiriyali, ukumaketha, ukunisela, ukuk-handwa kwemishini, nokuqashwa kwempahla yokusebenza.

Ukuhlaziywa kwezimali kungabandakanya isamba semali engenayo ngehektha ngalinye, isamba ne-margin ngokwezindleko ngqo phecelezi *cost/ha*, *i-margin ye-fixed costs/ha*, *i-margin* nge-R1,00 ngezindleko eziqondile ne-*margin* yethani yesivuno.

'Ukulinganisa ukwazi' yiyo kuphela indlela eya phambili, ukuqinisekisa ukuthi ungaqhubeka nokulima futhi ulandele iphupho lakho empilweni. ■

**U-RICHARD MCPHERSON,
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Ubuhle nokubi ekulimeni

ABALIMI babhekene nezinsalelo eziningi nokugqame kakhulu esikhathini sesizini. Kule sizini abanye abalimi babone umsebenzi wabo onzima ucekelwa phansi yimvula enkulu nesichotho, ngaleso sikhathi abanye babegolozele esibhakabhakeni ngokudangala, belindele imvula.



Abakwa-Mthethwa basepulazini i-Wise-kingdom esifundeni sase-Dundee baba ngabanye babalimi ababa nenhlanhla. Umeluleki Chris de Jager akazange athole nolulodwa uphawu lwesifo samahlamvu noma ukhula lwakamuva ngesikhathi evakashela epulazini lakhe. Isilimo sommbila sasisabalalisa isikhuphasa phecelezi pollinating futhi sibukeka sisihle.

Umeluleki uMartin Botha wavakashela ipulazi lika-Alfre Gondo, e-Koornfontein. U-Alfred samdalela omkhulu umonakalo isichotho. Wayeseqalile ukuvuna ubhontshisi wakhe isoya, kodwa ukuchachamba kwemidumba kwenza walahlekelwa kakhulu.



U-Samuel Moloi endaweni yase-Fouriesburg waba yilungu le-2 000 Ton Club ngo-2022 emva kokukhiqiza u- 3 200 t ombila ophuzi. Wavuna isivuno esiyi-avareji ka-6,7 t/ha ngaloyo nyaka. Kulo nyaka ubunjalo obunzima bemisomo bubonakala ngokusobala:



Ngenxa yokwentuleka kwemvula kusukela ngo-Januwari, izitshalo eziningi zikasoya zinemidumba ephakathi kuka-15 no-7 kuphela, ezinezinhlamvana ezincane.

Izitshalo zombila nazo zincane kakhulu, uhhafu wengxenywe yamahlamvu awo ayafa. Uma lingana, lingazisiza izinhlamvu, kodwa u-Jacques Roux, imenenja yentuthuko esifundeni saseMpumalanga yeFreystata, uthi u-50% wazozonke izilimo zombila neke zidilive izikhwebu.



Ukusebenza ngeqembula KUYALIPHUMELELISA IPHUPHO

ABAXHASI babamba elikhulu iqhaza empumelelweni yePhrogram eThuthukisa abalimi. **U-Dekalb Bayer** wasingatha i-farmers' day ngomhla ka- 8 kuMashi e-Rietgat esendaweni yase-Lichtenburg. Abalimi bafundiswa ngawo onke ama-cultivar ahlukene, ubuchwepheshe obusha inkampani beyisebenza ngabo nokuthi yini engenziwa ngama-herbicides ahlukene kuma-cultivar ahlukene. Abalimi babuza imibuzo eminingi ngezihloko abazenzile ukuze bazi kabanzi ngazo.



I-farmers' day yathanyelwa abalimi abangama-75.

Laba abasebenza elebhu bafundisa abalimi kabanzi ngokwelashwa kwembewu okwenziwa e-Jebhu yabo ukuqinisekisa ukuthi abalimi bayithole inzuzo ngembewu abayithengayo.



I-Oil and Protein Seeds Development Trust (OPDT) ne-Agri Care (amakhemikhali) watshala amasimu amabili ombukiso wamathrayeli kabhekilanga ngempumelelo. Amathrayeli atshalwa eMbizana endaweni yase-Kokstad eMpumalanga neKapa. Ithrayali yokuqala yatshalwa ngokulandela izindlela zemvelo phecelezi conventional bese kuthi eyesibili nge-no-till. Umlimi u-TH Tobo watshala omabili amathrayeli ngomhla ka-6 Febhuwari ngenani lezitshalo eziyi-45 000 nolayini abawububanzi obungu-76 cm.

Ngesikhathi sokuvakashela indawo yamathrayeli, kwatholakala ukuthi kuncane okumilile ngenxa yokwentuleka kwemvula.

