

PULA IMVULA

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IMAGAZINI YAKWAGRIN SA YOPHULISO LWABAVELISI



Ifoto: Petra Seymore.



Iileyibheli zeekhemikhali zinemiqathango emitsha

ABALIMI NABASEBENZI BEEFAMA MABAQAPHELE UKUBA IILEYIBHELI ZABO ZOKHUSELO LWEEMVELISO ZEZITYALO ZIYAGUQUKA KWAYE ZIYA KUQHUBA NGOKWENZA NJALO KWIXESHA ELIDE. ISIZATHU SOKU YINKQUBO ELUNGELELANISWA EHLABATHINI YOKUHLELA NOKUFAKA IILEYIBHELI ZEEKHEMIKHALI (GHS), NECHAPHAZELA IIARHENTE ZEEKHEMIKHALI KUMASHISHINI AHLUKAHLUKENYO.

Isidingo seGHS sinyuke ngenxa yorhwebo lwehlabathi Iweekhemikhali, olukholisa ukunqumla imida ukuya kwiinkalo ezaahlukileyo zolwimi kunye namanganaba angafaniyo esakhono sokufunda nokubhala – ngokwenza njalo kudaleke imingeni xa kunxityelwana ngokhuselo nangokulandela ngenkathalo imiyalelo yokusetyenziswa kweemveliso.

EMzantsi Afrika, iGHS seiyimfuneko ngokwasemthethweni ukusela ngoSeptemba wama2022 kwaye icaciswe apha; *The Regulations for Hazardous Chemical Agents* (Inombolo. R280 yama29

kuMatshi wama2021). Ukususela ngoko, iileyibheli namacwecwe eenkcukacha zokhuseleko lweemveliso zokhuselo lwezityalo zifanele ukulandela umgaqo olungelelanisiweyo kunxibelelwano olumalunga neengozi eziphathetele kwiimveliso ezizikhemikhali. Khumbula ukuba kukho ithuba lohlengahlengiso lweekhemikhali ebesezithengwe emazweni angaphandle okanye ebezenziwe phambi kwalo mhla.

Kweli nqaku ugqaliselo iuya kuba kwiimveliso ezisetyenziswa kushishino lokhuselo lwezityalo. Kubaluleke kakhulu ukuba abalimi nabasebenzi beefama bayiqonde ingcaciso entsha, kuba iingozi ezinxulmene nekhemikhali ethile, uhlobo lwayo nobuzaza bayo buboniswa ngokusebenzisa izinto eziliqela, ezifana neenkcazo malunga neengozi, imifanekisongcaciso namagama azizalathiso kwileyibheli nakwicwecwe leenkukacha ngokhuseleko lwemveliso.

IMIQATHANGO NGOKUHLELWA KWEENGOZI

NgokweGHS, uhlobo lwengozi luhlelwa ngokodidi lwengozi, kanti ngoku zingama29. Ezili17 zazo ziindidi zeengozi eziphathetekayo, ezifana nokutshiswa kokusabumanzi ngeoksijini, ezilishumi ziindidi

lileyibheli zeekhemikhali...

zeengozzi ezimalunga nempilo, ezifana nokutsha/ukuthukuthezelwa kolusu, kanti ezimbini ziindidi zeengozzi ezimalunga nobume obusingqongileyo, ezifana neengozi kubume obungqonge ubomi basemanzini okanye obungqonge umaleko weozowuni. Ezi ndidi zinxulumene neqela okanye uhlolo lweengozi, ezichongwa ngomfanekiso ngcaciso onokusetyenziselwa iingozi ezininzi ezhakuleyo.

Phakathi kwezi ndidi, ubuzaza bengozi buhlelwa ngokoluhlu lweengozi olubalulwa njengenani – umzekelo, uluhlu 1 beluya kuba lolona luxhalabisayo. Ezinye zezi zintlu ziphindza zahlulwe ngokwezahlulo, ezibalulwa njengonobumba, oko kukuthi, A, B, C njalo njalo.

Enye yezona nguquko zinkulu kwileyibheli yinyaniso yokuba akusayi kuphinda kubekho micu yemibala ebonisa isakhono sobutyhefu bemveliso. Oku kungabangela inkxalabo kwabanye, kodwa umntu

makaqapheli ukuba ngokuphathelele kuhlelo lweGHS ubungozi bemveliso butyhilwa ngokusebenzisa isakhono sobutyhefu obuhlasela ngesiquphe nobethuba elide, nangona imicu yemibala ibisalatha ubutyhefu obuhlasela ngesiquphe kuphela – oko kuthetha ukuba iintlobo ezintsha zokuhlela ziukanisela ngakumbi.

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Imiqathango yeeleyibheli zeGHS.



Product trade name	Note regarding use
A-WONDER REMEDY	
Registration number <small>VERWYS NA BESONDERRIEDE SONS OP HOUER-SAK GEDRUK</small>	Product group FUNGICIDE
Batch no., date of manufacture, expiry date <small>GEWAARMAKSTAMPS EN VERVULDATUM</small>	Declaration regarding formulation and use <small>'n Emulgasibele konseptraat, sistemiese swamoder vir die beheer van poeieragtige meeldou op gewasse soos aangedui</small>
Pictogram <small>REFER TO DETAILS PRINTED ON CONTAINER/BAG</small>	Resistance group code FRAC FUNGICIDE GROUP CODE
Signal word (must be below pictogram) <small>DANGEROUS FOR ENVIRONMENT</small>	Active ingredient and quantity ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL Siproxamine (spiroketalamine) 500 g/E Spiroksamien (spiroketalamin)
Registration holder Emergency number Client service number Net volume/mass UN number (transport information)	Hazard statement <small>Fatal if swallowed</small> Precautionary statements <small>Wash hands thoroughly after handling Do not eat, drink or smoke when using this product IF SWALLOWED: Get emergency medical help immediately Specific treatment (refer to safety data sheet) Rinse mouth Store locked up Dispose of contents / container in accordance with local regulations</small>
	DANGER
	Registration Holder / Registrasiehouer A-Chemicals (Pty) Ltd (Reg No. 47/0747/07) PO Box 005, Chatswood, 1224 Tel: (011) 555-12345 Emergency Number: 082-446-8946 Client Service Number: (011) 555-0000
	5L UN Number: A-CHEMICALS

GHS HAZARD GROUPS AND PICTOGRAMS						GHS STATEMENT EXAMPLES		
	Explosive		Chemicals under pressure		Exclamation mark	Acute Toxicity Category 1 (oral exposure) Hazard statement • H300 – fatal if swallowed Precautionary statements • Prevention P264: Wash hands thoroughly after handling P270: Do not eat, drink or smoke when using this product • Response P301+P316: IF SWALLOWED: Get emergency medical help immediately P321: Specific treatment (refer to safety data sheet) P330: Rinse mouth • Storage P405: Store locked up • Disposal P501: Dispose of contents / container in accordance with local regulations		
	Flammable		Corrosive		Health (chronic toxicity)			
	Oxidising		Acute toxicity		Environment			
SIGNAL WORDS: WARNING DANGER						<i>Note that the codes (Hxxx/Pxxx) must appear on the safety data sheet, but may be omitted from the label.</i>		
The chemical identity of all ingredients contributing to the final GHS classification of the remedy needs to be disclosed on the product label								
info@croplife.co.za • www.croplife.co.za								

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**MADE POSSIBLE BY
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Enye yezona nguquko zinkulu kwileyibheli yinyaniso yokuba akusayi kuphinda kubekho micu yemibala ebonisa isakhono sobutyhefu bemveliso.

I-GHS iphinda isebeenzise iinkcazo malunga neengozi, imifanekisongcaciso namagama azizalathiso ukuze kunxityelelwane nabantu ngengozi yekhemikhali, ngokunjalo neenkazo ezilumkisayo ukuze kuncitshiswe imingcipheko enokubakho. linkcazo malunga neengozi ngamabinzana amagama achaza ingozi/ iingozi ngokwendlela yokuhelela iingozi. Ziqa-la ngonobumba 'H', olandelwa ngamana ni amathathu.

Malunga neengozi eziphathetkayo, inkcazo iya kuqala ngoH2 (kulandele amanani amabini ongezelelwayo), iingozi zempilo ziqa-la ngoH3 zize iingozi zobume obungqonge indawo ziqa-le ngoH4, umzekelo, H300: *lyabulala xa iginyiwe*. Ezi nkcazo zeengozzi zibonakala kwileyibheli nakwicwecwe leenkukacha zokhuseleko – nangona kunjalo, ikhowudi (kuthetha oku, Hxxx) ifanele ukavela kuphela kwicwecwe leenkukacha zokhuseleko hayi kwileyibheli.

linkcazo zezikumkiso ziseteyenziselwa ukuchaza indlela ezi zinto, ngokunjalo nokuba zeziphi izikumkiso ezifanele ukulandelwa ukupinisekisa ukuthintela nawuphi umngcipheko onxulumene nokupathwa kwemveliso. linkcazo ngezikumkiso zikhokelwa ngonobumba 'P' nangamanani amathathu nawo ahlelwe ngokohlobo, olufana neenkazo malunga neengozi.

Umzekelo, iinkcazo gabalala ziya kuqala ngoP1 olandelwa ngamanani amabini, iinkcazo ngothintelo zibe noP2, iinkcazo ngeziphumo ngoP3, iinkcazo ngolondolozo ngoP4 zize iinkcazo ngokulahla zibe nguP5, umzekelo, P264: *Hlamba izandla ngocoselelo emva kokuyiphatha*.

Ezi nkcazo zivela kwileyibheli yemveliso nakwicwecwe leenkukacha zokhuseleko, kwaye zinxulumene nenkazo ethile yengozi nakumfanekisongcaciso. Njegawiinkcazo ngeengozi, ikhowudi (oko kukuthi, Pxxx) zifuneka kuphela kwicwecwe leenkukacha zokhuseleko hayi kwileyibheli ngokwayo. Zombini iinkcazo ngeengozi kune neenkazo ngezikumkiso zifanele ukuba



nezihloko ezibonisa uhlolo lweenkazo, kwaye zifanele ukuvela ngasekunene kumfanekisongcaciso ezinxulumene nawo.

Njengoko sekutshivo, imifanekisongcaciso isetyenziselwa ukuchonga iintlobo zeengozi zeekhemikhali ezaahlukileyo ezilithoba, ezi-boniswa kwikona esezantsi ekhohlo **kwiSazobe 1**.

Kufanele kuvele igama elisisalathisi kwileyibheli, kwaye mabini kuphela:

- **Ingozi**, ligama elalatha ingozi enobuzaza obuxhalabisa ngakumbi, okanye
- **Isilumkiso**, igama elixela ingozi engenabuzaza buxhalabisa kangako. Ligama elinye kuphela elifanele ukuvela kwileyibheli.

ISISHWANKATHETO

Le yimibandela embalwa kuphela yeGHS, ubukhulu becala ibhekise-lele kwileyibheli yemveliso, kuba xa iphelele iGHS ingaphaya komda weli nqaku, kodwa kubalulekile ukuba abalimi nabasebenzi beefama baziqhelanise nale mibandela ibalulekileyo.

Injongo yeGHS kukunxibelelana nabantu ngengozi engabonakaliyo yekhemikhali. Ngenxa yale ngozi, kukho imingcipheko ebandalanyekayo xa umntu esebezena ngemveliso ethile, kodwa ezi ngozi ziyahinteleka xa imiyalelo yeleyibheli ilandelwa. Into yokuba imveliso iyingozi, ayithethi ukuba ayinakusetyenziswa ngokhuseleko.

Isithuthi, ukuba siyazekelisa, naso singayingozi xa uqwaliasela inani leengozi ezenzeka endleleni, kodwa izithuthi azibhangiswa ngenxa yaloo nto. Endaweni yoko, umngcipheko uncitshiswa ngokunxiba ibhanti lokhuseleko, ukugcina umnyino wesantya nokulandela neminye imithetho yokhuseleko endleleni.

Kwakona okuhankanywe ngasentla kufanele ukulandelwa xa umntu esebezena ngeekhemikhali eziyingozi, kungenxa yoko kubalulekile ukulandela ileyibheli yemveliso. Khumbula, nakuphi ukusetyenziswa kwemveliso eksusela isityalo nangayiphi indlela ngaphandle kwaleyo ichazwe kwimiyalelo yeleyibheli, lulwaphulomthetho – ngoko ke, yenza into efanelekileyo uqinisekise ukuba wena, kune nawuphi omnye umntu osebenza nave, nikwazi kakuhle ukusebeniza ezi mveliso ngokhuselo nangenkathalo. ■

ELRIZA THERON,
UMPHATHI WENKXASO
NONXIBELELWANO,
KWACROPLIFE SA



AMAZWI
AVELA...
kuPhumzile
Ngcobo



N

JENGOKO ABALIMI BEJONGE ENKALWENI YEXESHA ELIZAYO LOKULIMA, ABANAKU-NGAJONGI EMVA KWIXESHA ELIDLULILEYO NAKWIZIFUNDO ABAZIFUMENE KULO.

Okona kubalulekileyo kubalimi kukufumana izivuno eziphucukileyo kunezesiqhelo. Nangona kunjalo, inkxaso efumaneka ngoku ekusetyenzisweni kwemigaqo elungileyo yokulima iya ngokuba ngumba obalulekileyo.

Imbali yakutshanje ibonise indlela ushishino Iwezolimo lucha-phazeleka ngayo ngenxa yemibandela eseyikhona, equka imozulu, iindleko zeemveliso zamalungiselelo kunye neentengiso zeemveliso zabo. Isakhono sabalimi sokuziqhelanisa neemeko zemozulu ezigqubayo zichaphazela isakhono sesivuno sabo nozinzo Iweenkubo zokukhupha iimveliso zolimo.

Uhlolo Iwemibandela eyahlukahlukileyo echaphazela isakhono sabalimi sesivuno (imozulu, iindleko zeemveliso zamalungiselelo kunye neentengiso zeemveliso zabo) lufuna ukuba abalimi ba-kuggale ngakumbi abakwenza malunga nemigaqo yabo yokulima. Naxa beyihlangabeza imiqqaliselo yabo yesivuno, imiba yobume obungqonge ukukhutshwa kwemveliso nemanu ukubuyeleta ifanele ukuthathelwa ingqalelo kangangoko.

Uvavano lomhlaba sesinye seixhobo eziphambili kakhulu nezisisiseko esibalulekileyo solawulo Iwemisebenzi yokulima izityalo – nesivumela ukulungiswa kweemeko ezingalungelelananga kunye neenkubo zokufakwa kwezichumiso ezcetylisywayo ukuze kufumanekе ezona zivuno zihle zinokuba khona. Ukukhethwa kweentloblo ngeentloblo zembewu nako makwenziwe ngokugqala iimeko zemozulu ezigquba kuloo ngigqi.

Njengoko sisitsho isithetho, ungaze ubeke onke amaqanda akho ebasikithini enye! Ukwahlukahlukanisa amashishini kusentloko ekuqhutyweni kwamashishini aphumzanayo naxhasanayo oku-nokwenzelwa ukusebenza ngeyona ndlela inceda abalimi nempilo yabo. Ukulinywa kwezityalo eziziinkozo kufanele, apha kunokwenziwa khona, kuxhaswe ngokufuya ngokunjalo ukufuya kuxhaswe ngokulima. Oku kwenzelwa ubudlelwane bokuncedisana phakathi kwamashishini kunye nokomelela ngokunjalo nozinzo olubonakala ekuggibeleni komlimi nemisebenzi yokufama.

Ulawulo Iwezityalo kulo lonke ixesha lokuzikhulisa ngokuphathelele kulawulo lokhula, izonakalisizityalo kunye nezifo ngomnye wemiba eyalatha imibandela yesivuno esibonisa impumelelo.

– **UPhumzile Ngcobo ngumncedisi wolawulo Iweningqqi kwi-ofisi yaseDundee.** ■

Malunga nohlelo IwesiNgesi IwePula yale nyanga, skena le khowudi yeQR.



Amacebiso ali 14 aphambili ngogcino lukamatshini wokutyalal

UKUSETYENZISWA KUKAMATSHINI WOKUTYALA NGOKUNGAGQIBELELANGA KUKHOKELELA KWIMEKO YOKUNGALUNGELELANI KOBUNZULU BEMBEWU, IMBEWU KUMPHEZULU WOMHLABA, IMINGXUMA YEMBEWU EVULEKILEYO, UMHLABA OGANGATHEKILEYO PHEZU KWE-MBEWU, UKUNGAKWAZI UKULAWULA INTSALELA NOKUGANGATHEKA KOMHLABA EMACALENI. EZINYE IINGXAKI ZIQUKA UKUQAKATHA, UKUPHINDAPHINDA KABINI NAKATHATHU – KANTI EKUPHELENI KOKU, ISI-VUNO SIYA KWEHLA KWAYE INGENISO IYA KUCUTHEKA.

Kungenzaka umntu akwazi ukusebenza ngomatshini wokutyalal ongailondolozwa kakuhle emsebenzini nasemhlabeni ophethulwa ngomgaqo wesiqhelo, kodwa akunakwenzeka emhlabeni owomeleleyo olinywa ngomgaqo wokungawuphethuli. Oomatshini bokutyalal bomgaqo wokungaphethuli nabomgaqo wesiqhelo bafanele ukuwazi ukutyalal futhi bagqithe kwintsalela yezityalo eninzi, bagqobhoze emhlabeni obambeneyo, bavule umngxuma onemilo ‘kaV’ ogqibeleyo, ufake imbewu ehamba nganye nganye kwimigama elinganayo futhi nakubunzulu obufanayo, uvale umngxuma ekuwo imbewu ukuze imbewu idibane kakuhle nomhlaba, kungabikho kungangatheka emacaleni futhi kungabikho mhlaba ugangathekileyo ngaphezu kwembewu, apha afaka khona ishumi ukuya kuma20 embewu ngomzuzwana.

Ukuthintela iingxaki zokutyalal, qala uqinisekise ukuba umatshini usebenza kakuhle, uze emva koko uqwalasele rhoqo umgangatho wokusebenza kukamatshini wokutyalal entsimini uze utshintshe imiselo yeeseti ngexesha lokutyalal.

Amanqaku ali14 alandelayo afanele ukuvavanya:

1 limitha

Iinxalenye eziyimilinganiselo yeemitha zembewu ezingasebenziyo zikhokelela kumaxa okuqakatha, okuphindaphinda kabini, nakathathu size isivuno sibonakalise ilahleko. Ukuqinisekisa ukusebenza komgangatho ophezulu, zithathe ngokuzahlukanisa iinxalenye zemilinganiselo zeemitha, susa ukungcola uze ucoce isigqubuthelo ngamanzi anesepha. Beka ezinye izigqubuthelo zeplastikhi endaweni yezo zichachambileyo. Beka eminye iminwe endaweni yaleyo yaphukileyo kwimitha yokubekwa kweminwe. Phinda usete ukumbana eminweni uze uyiqinise ngokuchanekileyo. Qwalasela ipleyiti engasemva neebrashi zembewu ukuze ufake ezinye endaweni yezonakeleyo. Ngokunjalo qwalasela ibhanti kwiimitha zokubekwa kweminwe. Ifanele ukugobeka, ingabi nazindawo zichachamibileyo kwaye kufuneka icoceke. Ungayenza ithambe imitha ngegraphite.

Sisenzo esivakalayo ukuthathla iinxalenye yomlinganiselo weemitha wakho wokubekwa kweminwe uvuse kumthengisi ukuze ufakwe iinxalenye zemilinganiselo. Ukuba unendawo engenanto okanye imitha yomoya, qinisekisa ukuba indawo engenanto okanye uxinzelelo lomoya luchanekile, qwalasela iindawo ezivuzayo nezonakeleyo kwibrashi ebetheka kuzo imbewu uze uzelungise okanye ufake ezinye endaweni yazo.

2 Inxalenye yemilinganiselo kamatshini wokutyalal

Kubanzima ukugcina ubunzulu obuchanekileyo ukuba iinxalenye zemilinganiselo kamatshini wokutyalal iyekeyeke okanye iyagungqa-gungqa. Akufanelanga kuba lula kuwe ukuphakamisa inxalenye yomlinganiselo okanye ukuyishukumisa ngokuyisa emacaleni. Jonga nangaphaya kweenxalenye zemilinganiselo ukususela ngasescaleni. Ingaba zisekuphakameni okulinganayo zonke? Ukuba kukho inxalenye yomlinganiselo engasentla kunezinye, oko kudinga ingqalelo. Ingxaki eqhelekileyo kukuba kubakho iibholiti eziyeyekeye okanye kudingeke ezinye iibhushingi. Ufanele ukufaka iziqakathisi zembewu (hoppers) ukuba kukho ezichachambileyo okanye ezaphukileyo.

3 Ipleyiti zokuvula imbewu

Ipleyiti zokuvula imbewu zifanele ukuba nobubanzi obubobona buncinane (jonga isikhokelo sendlela yokuyisebeniza), okanye ayisayi kukwazi ukufaka imbewu kubunzulu obufanelekileyo. Kwiintlobo ezininzi zoomatshini inkubo yeepleyiti ezimbini zembewu ezayame-neyo isetyenziselwa ukuvula umsele emhlabeni, apha ufaka khona imbewu. Ubudlelwane phakathi kwezi pleyiti zimbini bubaluleke kakhulu ukuqinisekisa ukuba ufumana umsele ocoekileyo, onemilo ‘kaV’ elungeleleneyo apha ifanele ukufakwa khona imbewu.

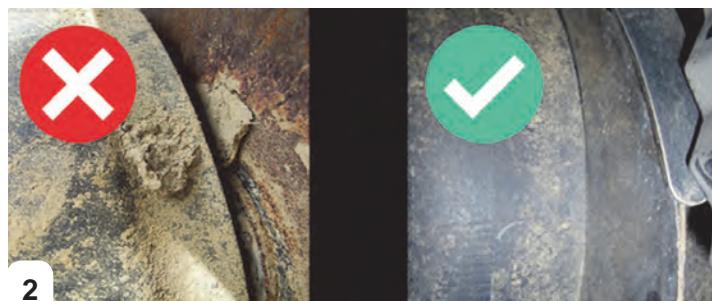
Ukuba izithuba zepleyiti yembewu azichanekanga kuze ukungcola kukwazi ukuhlala phakathi kweepleyiti zembewu, oko kubangela iingxaki ezifana nezi:



1

Qiniseka ukuba iipleyiti ezikrazulayo azindalanga kakhulu.

Umthombo weenkukacha: <https://www striptillfarmer.com/articles/4186-how-to-check-your-disc-openers>



2

Isikhewu esiphakathi kwevili loqikelelo lobunzulu kanti ipleyiti ekrazulayo yembewu ingabangela iingozi.

Umthombo weenkukacha: <https://www striptillfarmer.com/articles/4186-how-to-check-your-disc-openers>

- Xa kuyileke 'uW' endaweni 'kaV', oko kuthetha ukuba imbewu iya kuba sekuphakameni okungalungelelananga kwaye ngenxa yokuba ingabekwanga esizikithini somsele olungelelanisayo, oko kuphinda kwenze ukuba kube nzima ukuwuvala nokuqinisekisa ukudibana kakuhle kwembewu emhlabeni, nto leyo ebangela iingxaki ngexesha lokuntshula.
- Xa kukho isikhewu phakathi kweepleyiti zembewu, ukwavumela ukungcola okungaphezulu ukuba kuwele emseleni ize imbewu idibane nomhlaba.
- Oku kungcola kuhamba phakathi kweepleyiti zembewu kunako kaninzi nako ukuba ngunobangela wokuxinga kweepleyiti zembewu xa sekubakho uchatha wokufuma.

Beka iikhadi ezimbini zamashishini phakathi kwezivuli futhi zenziwe ukuba zisondelelana kangangoko kunokwenzeka ukuze kuqwalaselwe oku (**Ifoto 1.**) Ukuba iipleyiti zokuvula zonakele kakhulu, uya kufumana umngxuma wembewu onemilo 'kaW' endaweni yomngxuma 'onguV' onqwenelekayo. Faka ikhadi enye phezulu apho iipleyiti ezimbini zidibana khona kune nenyese esezantsi, ngokulingene kuphela kwindawo yokudibana kwazo ukuze kubambeke iikhadi. Linganisa umgama phakathi kweekhadi ezimbini. Okufanelekileyo kukuphumeza ukusondelelana kwe6 cm phakathi kweekhadi. Ukuba isikhewu esiphakathi kweekhadi sincinane kakhulu, khupha izilungelelanisi. Ukuba sikhulu kakhulu, fakela izilungelelanisi ukuqinisekisa ukuba ufumana ukusondelelana kwe6 cm.

4 Imibhobho yembewu

Iziphelo zemibhobho yembewu zingonakala kangangokuba zishwabanele ngaphakathi, zize zinqakule imbewu. Kuba soloko kukho isolotya esiphakathini ukuya phezulu esinokuqhawuka. Oonogada bemibhobho yembewu bafanele ukuba nobubanzi obubobona buncinane kwayebabotshwe kakuhle, okanye imibhobho yembewu kungenzeka yonakale. Coca izilumkisi zembewu ukuba umatshini wakho wokutyalu unazo.

5 Izomelezi zembewu

Zona zinceda ngokucinezelela imbewu ezantsi emseleni, ukuqinisekisa ukufakwa kwembewu kubunzulu obuchaneke ngakumbi. Ukutsaleka kwazo kungalungelelanisa ngeboliti. Ukuba izomelezi zonakele kakhulu, kufanele kufakwe ezinye endaweni yazo.

6 Amavili obunzulu

Esi sisihloko ekuxoxwa kakhulu ngaso malunga nohlobo olubalaseleyo Iwevili elisisilawuli sobunzulu – kufutshane nepleyiti yembewu okanye kude kakhulu kuyo. Elona vili elisisilawuli sobunzulu elixhaphakileyo lelo lisondela kancinane kwipleyiti yembewu. Xa kukho isikhewu phakathi kwamavili azizilawuli zobunzulu, oko kuvumela ukungcola okomileyo ukuba kungene phakathi kweepleyiti nevili elisisilawuli sobunzulu, ukuze kwenze isiphumo 'sesisila somqhagi' sokungcola okomileyo kwirim okanye kumlebe wamavili azizilawuli zobunzulu. Ukungcola kusuka kunuukele phezulu ukususela emavilini azizilawuli zobunzulu kuze kuwe phezu kwemihlaba emseleni onembewu, ngokunjalo oko kubangele iingxaki zokuntshula. Jonga **Ifoto 2.**

Xa oomatshini bokutyalu besonakala, nokuba ngumatshini omtsha, izithuba phakathi kwamavili azizilawuli zobunzulu nepleyiti zembewu zingatshintshwa.

- Kumatschini omtsha, izibumbi zeengalo zamavili azizilawuli zobunzulu zingaphuma ecaleni.
- Amathayara erabha angonakala.
- Lingalo zamavili azizilawuli zobunzulu zingagoba.
- Ibheringi ingonakala.

Ukuqinisekisa ukuba izithuba zevili elisisilawuli sobunzulu, qwalasela ukuba iingalo azigobanga, amathayara awonakalanga kangako kwaye iibheringi zisekwimeko entle. Phakamisa umatshini wokutyalu, beka iibloko phantsi kwamavili uze uthobe umatshini ubuyele kwibloko zamavili azizilawuli zobunzulu. Emva koko sebenzisa uhlobo

lwesilungelelanilisi ukuze ulungelelanise amavili azizilawuli zobunzulu ukuya aphi ivili elisisilawuli lihangana khona kancinane nepleyiti yembewu ekuphakameni okulingana nobomhlaba kodwa abe esakwazi ukujikeleza.

7 Intsimbi ephambi kukamatshini

Qwalasela ububanzi beentsimbi eziphambi kukamatshini zokukhulula umhlabu uze ufake ezintsha ukuba kukho imfuneko. Lungelelanisa ummiselo wobunzulu weentsimbi eziphambi kukamatshini ezikhulula umhlabu ezonakeleyo kodwa ezisasebenzisekayo.

8 Izicoci zemiqolo

Qwalasela ukonakala. Lungelelanisa ukuze ulungiselele ukonakala okanye ukufaka ezinye endaweni yezo zonakele kakhulu.

9 Amavili okuvala

Amavili okuvala afanele ukuba nesipringi esikwimeko entle kwaye makaqwalaselwe ukuba awonakalanga na. libheringi azifanelanga kuba yekeyeke okanye ziqine kakhulu. Imizantsi yamavili okuvala yerabha okanye yentsimbi ifanele ukuqevelana kangangama³⁷ ukuza kuma50 mm. Ingalo yamavili okuvala ayilindelekanga ukuba ibe nendima engako. Xa kunjalo, iibhushingi okanye ingalo iphelele kungafuneka ukuba ikhutshwe ngenye.

10 Ukulungelelanisa kweentsimbi eziphambi kukamatshini, iipleyiti zokuvula kune namavili okuvala

Thatha intambo uyitsale ithi tye ukususela kwintsimbi ephambi kukamatshini engaphambili ukuya emavilini okuvala. Amavili azizomelezi, izivili zembewu kune neentsimbi eziphambi kukamatshini mazime ngomga zonke. Amavili okuvala mawangahambi ngaphezu komsele wembewu.

11 libhokisi zeekhemikhali zezinambuzane

libhokisi zeekhemikhali zezinambuzane azifanelanga kuba nemingxuma okanye iintanda. Imibhobho mayivuthelwe ibe nomoya ngokunjalo nomngxuma osezantsi kwemitha.

12 Inxalenyе yesichumiso

lipyeyiti zokuvula izichumiso zingaba nobubanzi obubobona buncinane (jonga isikhokelo sokuzisebenzisa). libheringi azifanelanga kuba yekeyeke futhi mazingaqini kakhulu. Xhoma ibhakethi ezantsi kombhobho wenxalenyе uze wenze uvavanyo lokuqhuba. Thelekisa ubunzima besichumiso nobunzima obulindelekileyo uze ufake imilinganiselo ngokutsha kumatschini wokutyalu ukuqinisekisa ukuba kufakwa isichumiso esinqwenelekayo.

13 Amatsheyini namazinyo

Qwalasela onke amatsheyini namazinyo. Ukuba onakele okanye iindawo zemixokomezelo ziqinile, zifanele ukukhutshwa ngezintsha. Amatsheyini afanele ukutsaleka ngendlela efanelekileyo futhi athanjiswe kakuhle.

14 Uxinzelelo Iwamathayara

Mpomba amathayara abe noxinzelelo lomoya olufanelekileyo – khumbula ukuba eli vili liqhuba phantse yonke into kumatschini.

Ngolwazi oluthe vetshe, qhagmshelana nomthengisi wakho wendawo ukuze akunedise ngokuseta umatshini wakho wokutyalu ngokwemimiselo. ■

**PIETMAN BOTHA,
UMCEBISI OZIMELEYO
KWEZOLIMO**



LUBALULEKILE ULAWULO LWENITRO

GEN KWIIMBOTYI ZESOYA

EMANTSİ AFRIKA INDAWO EKULINYWA KUYO IIMBOTYI ZESOYA YANDE KAKHULU, FUTHI BEKUKHO NEENDAWO EBEZIQALA UKULINYWA KULO LONKE ILIZWE. IIMEKO ZOKWANDA ZAHLUKE KAKHULU UKUSUSELA KWICALA LELI LIZWE ELISEMPUMALANGA UKUYA KWELISENTSHONALANGA. ABALIMI BAFANELE UKUGQALA IMEKO NGANYE ENOKUPHEMBELELA IINTLOBO ZONYANGO LWEEBAKTIRIYA EZIZINZISA INITROGEN.

Umlimi ngamnye ufanele ukwenza isigqibo ngemveliso aza kuyisebenzisa kwisityalo sakhe seembotyi zesoya nendlela aza kulawula ngayo unyango. Kweli nqaku kuchazwa izikhokelo ezisisiseko sendlela yokwenza esi sigqibo.

UZINZISO LWENITROGEN NGOKWENDALO

Iibaktirya zozinziso lwenitrogen phantsi kobhaliso lweekhemikhali zezonakalisityalo kwiSebe lezoLimo eMantsi Afrika kwaye ukuze zithengiswe zifanele ukubhaliswa phantsi kwalo mthetho.

Zonke iintlobo zeembotyi zesoya zixhomekeke kwi*Bradyrhizobium japonicum* malunga nozinizo lwenitrogen ngokwendalo. IBhunga lo-Phando kwezoLimo (ARC) lachonga iB. *japonicum* WB74 kwiminyaka eminzi edlulileyo, kodwa kukho iintlobo ezahlukahlukeneyo ehlabathini ezinako neziya kuzinzisa imithamo emikhulu yenitrogen. Zonke iintlobo ezibhaliswe eMantsi Afrika ziyancomeka, kwaye ziya kuba nezikhokelo ezahlukileyo zokufakwa kwazo ukuze zisebenze ngokwenene. Thetha nomthengisi wakho ukuze ufumanise eyona ndlela ibalaseleyo.

Imveliso ezineentlobo ezininzi zingavakala zilungile endlebeni, njengoko unokufumana imigaqo emibini okanye emithathu ngaxeshanye yokusebenza, kodwa kwiimveliso eziyindalo ubukho besithako esisebenzayo babaluleke kakhulu kumgangatho wokusebenza kwemveliso. Kwakuba kukho umxube ohloholeke kangangoko, ufanele ukunciphisa amanani ohlobo olulodwa lwe *B. japonicum* ukuze kongzezelwe olunye uhlobo kumxube.

Ngoko kukho iintlobo ezimbini nangaphezulu ze*B. japonicum* kwimveliso, apha olunye lwazo luya kuwongamela ngakumbi umsebenzi ekujoliswe kuwo – malunga noku, uzinziso lwenitrogen kwiimbotyi zesoya. Ngoko ke, enyanisweni, licuthekile ithamo elenza umsebenzi lohlobo olongamelayo lweebhaktiriya.

Udidi lwemveliso ngumba obaluleke kakhulu malunga ne*B. japonicum* kwaye luya kuba nefuthe kwiakhono sayo esincomekayo entsimini. Ngenxa yesantya sokuhula kwezi zidalwanana, imveliso yasekugqibeleni mayingabi nazinto ezibangela ungciliseko kwaye mayiqulathe isixa esiphezulu sezidalwanana ezifunekayo.

Xa sijonga emva, kwiminyaka elishumi inkoliso yeemveliso kwiindawo zentengiso zenziwe zanobomi bokugcinwa eshelfini kwithuba lenyanga ukuya kwiinyanga ezintandathu, apha iiyure ezingama24 zizezonyango nokutyala imveliso. Nangona kunjalo, ngenxa yeentlobo ezintsha zobuchwepheshe, iimveliso zingenziwa zibe nobomi beshelfu beenyanga ezili18 kubekho neentsuku ezingama60 phakathi

konyango nokutyala. Oku kubonisa ukuba iimveliso ngoku zinozino oluthe kratya nomgangatho ophezulu ngokunjalo, futhi nobuchwepheshe banamhla bukhusela iibhaktirya kwimbewu.

UKUMILISWA KWAMAQHUQHUVA

Ukumiliswa kwamaqhuqhuva nako kubaluleke kakhulu, njengoko kunoquvelisa isixa senitrogen efunyanwa sisityalo ngokusiphindaphinda kalishumi kulwakheko lwengambu eyintloko kunesengambu elandela eyintloko.

Qaphela ungajongi kwinani lamaqhuqhuva kuphela, kodwa kwindlela emi ngayo izowuni yeengambu. Oku kubaluleke kakhulu, njengoko isixa esilinganayo senitrogen singazinziswa liqhuqhuva elinye lobukhulu obufanayo kubunzima obomileyo bengambu eyintloko kangangoko kunokwenziwa ngamaqhuqhuva alishumi kwingambu eyonganyelwa yeyintloko.

IIMEKO ZOKUTYALA

Iimeko zokutyalu zibaluleke ngokubalaseleyo, njengoko iibhaktirya ngokunjalo nembewu zidinga ukufuma ukuze zintshule futhi zikhule. Oku kukholisa ukuba lula xa kuthethwa kunaxa kusenziwa ngexesa lokulima eMantsi Afrika. Abalimi basoloko bedudula esi sithintelo sokuba batyale na okanye bangenzi njalo ngenxa yomhlaba owo-mileyo nangenxa yomphezulu womhlaba ongange5 cm onobushu-shu obuphezulu bama40°C ukuya kuma50°C. Xa kulinywa iimbotyi zesoya, zibaluleke kakhulu iimeko ezibalaseleyo ukuze kuncomeke ukumiliswa kwamaqhuqhuva nokuntshula kwezityalo.

Xa unyanga iimveliso zakho ngokwendalo ukulungiselela imbewu yakho ngokwenza unyango lwembewu okanye ngokufakwa kwazo emseleni, ufanele ukulinganisela ubushushu ugqale nokukhanya kwelanga. Londoloza iB. *japonicum* kubushushu obubobona buphezulu bama25°C obungqonge indawo leyo futhi kungabikho kukhanya kwelanga kungqalileyo.

Umsebenzi udinga ukulawulwa ngendlela engqongqo ngokuthe kratya. Umzekelo, ukuba ubunyangi imbewu, thatha kuphela imbewu oza kuyisebenza xa utyla kusasa. Kucetyiswa ukuba kubhetele ukuqokelela imbewu esandul' ukunyangwa rhoqo eshedini yakho, apha ifanele ukulondolozwa khona ngokuqaphela nangenkathalo. Lubaluleke kakhulu ulawulo lonyango nembewu enyangiweyo efama ukuze kufumanekiziphumo ezifanelekileyo.

Unyango lwembewu oluphathekayo luyafuneka kwisiqalo esincomekayo. Qiniseka ukuba imbewu nganye inyangwa ngesixa esilinganayo se*B. japonicum*. Umatshini wokunyanga nawo ufanele ukucoceka futhi ungabi nazophi iikhemikhali ezinokuba nefuthe kunyango lweebhaktiriya.

Ukufakwa kwemilinganiselo yonke imihla koomatshini bokunyanga imbewu kubaluleke kakhulu, ngakumbi xa kutshintshwa ukusuka kuhlobo oluthile ukuya kolunye ngenxa yokushiyashiyana kobukhulu bembewu. Ukuba oku akwensiwa, kungenzeka ubone iziphumo ezahlukileyo kwimveliso. Qiniseka ukuba ulandela imithetho enxulmene nomgaqo wokunika unyango.

I-MOLYBDENUM NECOBALT

Indima yemolybdenum (Mo) necobalt (Co) ibalulekile ekusebenzeni kwenitrogenase enzyme, esebeanza njengesivuseleli senguuko kuziniso lwenitrogen kwiimbocyi zesoya nakwizityalo eziyimidumba. Ngaphandle kweMo neCo inkubo yozinziso lwenitrogen iya kulambatha.

Abalimi bembewu abanesiqinisekiso bayo kufaka iMo kwizihlandlo ezithathu ukuya kwezine kumjikelo wokulima imbewu ukuze kwande imolybdenum kwimbewu. Imolybdenum necobalt zinokufakwa njengonyango lwembewu okanye ukugalelwu kwazo emaggabini ngexesha lokukhula, njengoko oko kuya kunceda umsebenzi wenitrogenase.

Njengoko isixa esilinganayo senitrogen singaziniswa liqhuquhuva elinye lobukhulu obufanayo kubunzima obomileyo bengcambu eyintloko kangangoko kunokwenziva ngamaqhuquhuva alishumi kwingcambu eyonganyelwa yeyintloko.

Kukhu izilumkiso ezithile, njengoko imveliso yeMo neyeCo iziityuwa eziza komisa iibhaktiriya kwimbewu xa zinyangwa ngokuzidibanisa nerhizobium. Ngoko ke, qinisekisa ukuba ufaka iMo neCo kunyango lwembewu, ukutyala kwensiwa kwiiyure ezine ukuya kwezintandathu emva konyango lwembewu. Qiniseka ukuba unesitofu serhizobium sodidi oluphezulu esenziwe ngobuchwepheshe bokhuselo lokulahleka kwamanzi ukuze kwande ukuphila kweebhaktiriya njengoko oku kuya kufuneka xa umisela amaqhuquhuva.

IZICHUMISO

Izichumiso zibalulekile malunga nesivuno seembotyi zesoya, kodwa ulawulo lohlolo nomiselo lubaluleke kakhulu.

- Nitrogen eggithisileyo iydingxai enku, njengoko malunga ne10 kg ngehektare ingaphezu kweyaneleyo yokutyal. Nasiphi isixa esingaphezu kwesi siya kuluphazamisa umiselo lwamaqhuquhuva size sibambezele inkubo.
- Okwesibini umiselo ludinga ubuncinane bama50 mm ngezantsi ukuze luhinde lube ngama50 mm kumacala omabini embewu ukutqinisekisa ukuba ukufuma nokutsha kwetyuwa akusayi kwenzeka. Sebenzisa iphosphorus (P), potassium (K), sulphur (S), calcium (Ca), magnesium (Mg) kune neetyuwa eziphezulu nesitofu nesakhono nesakhono samaqhuquhuva kulwakhilo lweengcambu olulandela oluphambili. Abalimi abaninzi banyanga imbewu baze bafake imveliso emseleni ukuze kulungiselelwe naziphi iimposiso kunyango, engumgaqo onezipumo ezincombekeyo.

Sebenzisa iphosphorus (P), potassium (K), sulphur (S), calcium (Ca), magnesium (Mg) kune neetyuwa eziphezulu nesitofu nesakhono nesakhono samaqhuquhuva kulwakhilo lweengcambu olulandela oluphambili. Abalimi abaninzi banyanga imbewu baze bafake imveliso emseleni ukuze kulungiselelwe naziphi iimposiso kunyango, engumgaqo onezipumo ezincombekeyo.

UKUMISELWA KWAMAQHUQUHUVA

Njengabalimi neengcali zejomhlaba entsimini, iR1 iya kuba sisigaba osidingela ukuvavanya inkubo yomiselo lwamaqhuquhuva nokuhlola xa oku kwenzeke ngempumelelo. Ukuba akunjalo, udinga ukufaka izixa eziphezulu zesichumiso senitrogen se100 kg ukuya kuma200 kg. Thetha nengcali yendawo yakho yomhlaba malunga neenkucukacha zoku kufakwa kwesichumiso.

INGABA KUNCOMEKA NGAKUMBI UKUFAKWA KONYANGO EMSELENI OKANYE UKUNYANGWA LWEMBEWU

Ngokuhlalutyia iimvavanyo ezinini ngokweengqokelela zamanani nangokorhwebo kwiimvavanyo ezimeleneyo, yomibini imigaqo yolkufakwa kwestofu serhizobium iyancomeka futhi ixhomekeka ngokwenene kulawulo lomlimi lomsebenzi wokufama.

Ukuba uziva uyowabelo yomibini imigaqo, khetha eyona nto ilungele imeko yakho ngokubalaseleyo. Ukfakwa konyango emseleni kuhokelela kumiselo lwamaqhuquhuva okungephi kodwa okungekho



Nitrogen eggithisileyo iya kukuphazamisa ukubumbeka kwamaqhuquhuva.

phambil kwaye lungabukeka luncomeka kwiimeko ezithile. Kodwa zakuba zivuniwe, xa kuthethwa gabalala akuboni naluphi uncedo lwe-sivuno olubalulekileyo ngenxa yomiselo nesakhono samaqhuquhuva kulwakhilo lweengcambu olulandela oluphambili. Abalimi abaninzi banyanga imbewu baze bafake imveliso emseleni ukuze kulungiselelwe naziphi iimposiso kunyango, engumgaqo onezipumo ezincombekeyo.

Xa ukutyala kuphindaphindwa kwimihlabo eyisanti kwinginqi esentshona, kudingeka uxinzelo nolawulo lwembungu ebbityileyo ukuze kuqhube kakuhle ukulinywa kweembotyi zesoya. Oku kuphindu kuchaphazele umiselo lwamaqhuquhuva lwerhizobium, uzinziso lwenitrogen nesakhono sokuba nesithuba kulwakhiko lweengcambu. Nceda qhagamshelana nearhente yakho yekhemikhali malunga nezinye izinto ezinokukhethwa ezifumanekayo.

Izitofu zeembotyi zesoya zibaluleke kakhulu emsebenzini wakho wokufama kuba zinika izixa eziphezulu zenitrogen edingwa sisityalo sakho seembotyi zesoya. Ifuthe lazo lahluka ukususela kuma200 kg ukuya kwi1 500 kg zesivuno ngehektare. Ngokuxhomekeke emhlabeni, inginqi nesivuno sesityalo sakho esilinyiweyo singafikelela kuma40% esivuno sakho sesityalo. Ngoko ke, kubalulekile ukunika unyango oluchanekileyo ngokusebenzisa unyango lwembewu okanye ngokulufaka emseleni. ■

JONATHAN ETHERINGTON, UMBHEXESHI WEMBFI (PTY) LTD

Tshabalalisa ukhula ukuze ube nesivuno-

SIKAJONGILANGA ESIHLE KANGANGOKO

UKUTSHATYALALISWA KOKHULA OLUNGQONGE UJONGILANGA MAKWENZIWE NGOCOSELELO FUTHI NGOKUGCINA IXESHA ELICHANEKI LEYO KUBA OJOONGILANGA ABASAKHULAYO BANOBUNTUNUNTUNU KAKHULU XA BEKHUPHISANA NOKHULA. UKUZE UYIGCINE ICOCEKILE INTSIMI YOOJONGILANGA, UFANELE UKUSEBENZISA INKQUBO YOKUTSHABALALISA UKHULA EQUKANISELWE-YO. OKU KUTHETHA ISICWANGCISO SOLAWULO LOKHULA NGEEKHEMIKHALI OLUHLANGANISELWE KANGANGOKO, APHO KUQUKWE KHONA IFUTHE LAMACANDELO ALIQELA OBUNGCALI BEZOMHLABA, OOMATSHINI NEEKHEMIKHALI UKUZE KUTSHATYALALISWE UKHULA.

Abalimi mabakuggale ukutshataliswa kokhula, ngakumbi ukususela kwixesha lokuntshula ukuya kwisigaba seV8 stage (malunga neeveki ezintandathu emva kokulima). Kwizigaba ezilandelayo zesityalo, ifuthe lokhula alikabiyongxaki inkulu kuba amaggabi nezigqubuthelo zavo azikabi nemilo eggibebele ngokwaneleyo enokucinezela ukukhula kokhula ngendlela eyindalo.

Nangona kunjalo, ngendlela engafaniyo neyombona neemboty zesoya, awamaninzanga amalinge anokwenziwa malunga neekhemikhali zokhula ezinokutshabalalisa ukhula Iwamaggabi amakhulu olungqonge oojongilanga emva kokuhluma. Uktshataliswa kokhula, ngakumbi olwamaggabi amakhulu olungqonge oojongilanga benon-Clearfield, kuya kuhlala kunzima kwaye kudinga uwangciselou fanelekileyo phambi kokulinywa kwestyalo.

Xa abalimi besenza izicwangciso zokutshabalalisa ukhula olungqonge oojongilanga, mabaqale ngokukhetha amasimi aplo oojongilanga banokuhlwayelwa khona. Mabaqale ngempumezo yeenqubo zojikeleziso lwezityalo, aplo izityalo ezinjengombona zilinywa khona ngonyaka ophambi kokuhlwayelwa koojongilanga.

Qiniseka ukuba loo mbona ulawulwa ngendlela ekhokelela ekubenitukhula Iwamaggabi abanzi atshataliswe kakuhle kwaye ujikeleziso lwezityalo nojongilanga luyaggalwa xa kukhethwa iikhemikhali zokutshabalalisa ukhula. Ukuba alwenziwa ujikeleziso, qala ngokukhetha amasimi aplo ukhula Iwamaggabi abanzi lungeyongxaki inkulu khona uze uzilime aplo kunye noojongilanga.

UKUTSHATYALALISWA KOKHULA LWAMAGQABI AMA-KHULU NOLUYINGCA

Phambi kokulima qala uzifumanele isicwangciso esilunge kakhulu solawulo lokhula Iwamaggabi amakhulu noluyingca aplo bekusetyenziswa khona iikhemikhali zokhula zaphambi nasemva kokuhluma ekutshatalisweni kokhula. Kwimeko yoxinzelelo oluphezulu kakhulu lokhula, kudingeka ukusetyenziswa koomatshini. Kuluncedo kakhulu nokuqengqa imbewu kajongilanga phambi kokuntshula ukuze kutshataliswe ukhula kwimiqolo.

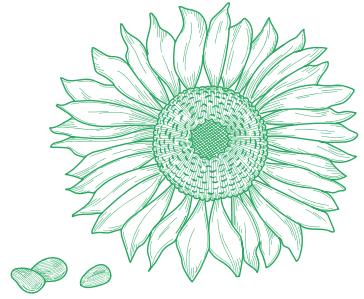
Ukuba kulinywe oojongilanga benon-Clearfield okanye oojongilanga beClearfield, kungasetyenziswa isikofolo esingangeni nzulu emhlabenitukhetha kwemiqolo ekutshatalisweni kokhula phambi kokuba kufakwe ikhemikhali yokhula lweClearfield.

Enyanisweni ukutshataliswa kokhula oluyingca olungqonge oojongilanga kufanele ukwenziwa phambi kokuntshula. Oku kunge-nziwa phambi kokuhlwayela okanye ngokutshiza oojongilanga phambi kokuntshula. Funda iileyibheli zeekhemikhali zokhula ezahlukileyo ukuze ufumane awona macebiso alungileyo ngokunjalo ukwazi ukubala amacondo ahluyleyo okuzifaka.

Imihlanganisela yeClearfield® neyeClearfield® Plus inika umlimi indlela yokuzikhethela ukutshataliswa ukhula Iwamaggabi amakhulu kujongilanga emva kokuhluma. Iileyibheli zeemveliso mazifundwe zize ziphononongwe ukwenzela ukufumana ingqiqo ngexesha nangendlela yokufaka ikhemikhali yokhula ukuze lulawuleke. Qinisekisa nje ukuba kukho ixesa elaneleyo phambi kokutyalwa kwestyalo esilandelayo.

Ezinye iikhemikhali zokhula zaphambi kokulima naphambi kokuhluma ubukhulu becalo zitshabalalisa ukhula oluyingca, kodwa ezinye zezi khemikhali zinako nokutshabalalisa iintlobo ezithile zokhula Iwamaggabi amakhulu – nangona maxa wambi nako oko kusahluka





1 ikhemikhali zokhula ezibhaliselwe ukulutshabalalisa koojongilanga nexesha elifanelekileyo lokuzifaka.

Isithako esisebenzayo	Iqela leHRAC	Ukuzifaka phambi okanye emva kokuhluma kokhula	Ithuba lokulinda (kuxhomekeka kwisityalo)	Ikhemikhali ebhaliselwe ukhula ¹		
				Ingca	Amaggabi	Amakhulu Inqoboka
Clethodim	A/1	Emva kokuhluma	lintsuku ezisi7 – ezi30	X	-	-
Cycloxydim	A/1	Emva kokuhluma	linyanga ezi3	X	-	-
Haloxyfop-R-methyl ester	A/1	Emva kokuhluma	linyanga ezi3	X	-	-
Propaquizafop	A/1	Emva kokuhluma	lintsuku ezili10 – ezi40	X	-	-
Quizalofop-P-tefury	A/1	Emva kokuhluma	lveki e1 – ezi6	X	-	-
Imazamox/imazapyr ²	B/2	Emva kokuhluma	4 - 20 iinyanga	X	X	-
Flurochloridone	F1/12	Phambi kokuhluma	6 - 18 iinyanga	X	X	-
Pendimethalin	K1/3	Phambi kokuhluma	12 iinyanga	X	X	-
Triflularin	K1/3	Phambi kokutyala	12 - 18 iinyanga	X	X	-
Alachlor	K3/15	Phambi kokuhluma	Alikho	X	X	X
Metolachlor + Benoxacor (safener)		Phambi kokuhluma				
S-Metolachlor + Benoxacor (safener)	K3/15	Phambi kokuhluma	Alikho	X	X	X
EPTC + Dichlormid (safener)	K3/15	Phambi kokuhluma	Alikho	X	X	-
Metolachlor + Dichlormid (safener)	K3/15	Phambi kokuhluma	Alikho	X	X	-
Metolachlor	K3/15	Phambi kokuhluma	Alikho	X	X	X
Metolachlor + (safener)	K3/15	Phambi kokuhluma	Alikho	X	X	X
Flufenacet	K3/15	Phambi kokutyala	4 - 6 iinyanga	X	X	-
dDimethenamid-P	K3/15	Phambi kokuhluma	Alikho	X	X	X
S-Metolachlor	K3/15	Phambi kokuhluma	Alikho	X	X	X
EPTC	K3/15	Phambi kokutyala	Alikho	X	X	X
EPTC + safener	K3/15	Phambi kokutyala	Alikho	X	X	X

¹Iintlobo zokhula ezitshatyaliswa ngokusebenzisa okuthile ziya kwahluka ngokweemveliso. Iileyibheli zeemveliso mazifundwe ziphononongwe.

²Kusetyenziselwa kuphela malunga nojongilanga weClearfield® okanye weClearfield® Plus – ngolvazi oluthe vetshe funda iileyibheli.

ngokweentlobo zokhula oluthile. Ezi ntlobo zeekhemikhali zokhula zifuna ukusetyenzelwa emhlaben (njengekhemikhali zokhula zaphambi kokutyala) okanye kungafuneka ukuba kuqale kune imvula engange10 mm ukuya kw15 mm kwixesha elingangeentsuk ezisixhenxe zokufakwa kwazo ukuze ikhemikhali yokhula ihanjwe ngamanzi ayifaka emhlaben. Khumbula ukuhlanganisela ezi mfuneko xa ukhetia iintlobo zeekhemikhali zokhula.

Okuchasene nokungasentla kukuba iikhemikhali zokhula zasemva kokuhluma zifakwa emva kokuba ukhula seluntshulile. Izithako ezisebenzayo ezibhaliselwe ukutshabalalisa ukhula lwamaggabi amakhulu emva kokuhluma okwangoku zisaphelele kwi-Imazamox/Imazapyr. Nangona kunjalo, ezi ntlobo zeekhemikhali zokhula zinokufakwa kuphela kwiintlobo zikajongilanga zeClearfield® nezeClearfield® Plus. Musa ukuzizama kwezinye iintlobo zemihlanganisela njengoko ziya kusuka zibulale oojongilanga, kwaye bakhona abalimi abasele benawo la mava.

Ukuthintela ukumelana kwamaqela okhula neekhemikhali zokhula ukuze zingakhuli kwifama yakho, kufanele kusetyenziswe iinkqubo ezahlukileyo zemigaqo yokusebenza (okanye amaqela

eHRAC) makahlukaniswe kwiinkqubo zokulima. Impumezo yenqubo yojikeleziso lwezityalo apho ujongilanga ajikeleziswa mhlawumbi nombona nako kuyanceda ekunqandeni ukumelana kokhula neekhemikhali zokhula.

Izithako ezisebenzayo ezibhaliselwe ukutshabalalisa ukhula olungqonde oojongilanga ngoku, ngokunjalo nohlobo lokhula (olwamaggabi amakhulu, oluyingca okanye oluyinqoboka) ezinokulutshabalalisa, ziboniswa kwi**Theyibhile 1**. Nangona kunjalo, kubalulekile ukuqaphela amathuba okulinda anokunxulunyaniswe nemveliso ethile kuba oko kungazichaphazela iinkqubo ezithile zojikeleziso lwezityalo. ■

**PIETMAN BOTHA, UMCEBISI
OZIMELEYO KWEZOLIMO KUNYE
NOMARYKE CRAVEN, UMPHANDI
WENQANABA ELIPHEZULU,
EARC-SMALL GRAIN**



Kutheni UMGCI^NI^{ZI}-NCWADI enoncedo

ULAWULO LWEFAMA OLWENZIWA EOFISINI LUNGATHATHA IIYURE. UKUQESHA UMGCI-NIZINCWADI KUNIKA WENA IXESHA LOKU-JOLISA INGQONDO KWISHISHINI LAKHO. XA UNGENANKXALABO YOKULUNGISA IINCWADI ZAKHO, UNGACHITHA IXESHA LAKHO NEMIGUDU ETHE CHATHA KWIMISEBENZI ENGUNDOQO YESHISHINI LAKHO.

Njengomlimi, umntu oshishinayo okanye umninishishini weshishi elincinane, inkxalabo yakho eyiyona inkulu xa usenza isigqibo sokuquesha umgcinizincwadi okanye ingcali yobalomali mhlawumbi ingaziindleko. Uzama ukulondoloza imali kwaye kungenzeka ucinga ukuba akunakwazi ukuhlawula ingcali yobalomali. Zibuze oku: Ingaba ndingazibeka emngciphekweni wokwenza impazamo? Ixesha lam lixabiseke kangakanani? Ingaba ixesha lam njengomnishishini ndilichitha ngokubalaseleyo xa ndizama ukusombulula ingxaki yefumu yeVAT, kwaye ndingaqiniseka njani ukuba ichanekile?

Izinto eziluncedo ngokuquesha umgcinizincwadi zingawuxhasa umsebenzi wakho wokufama, njengoko abagcinizincwadi benamava athe chatha okusebenza ngeenkubo zeshishini ezifana nokulandela umkhondo wokusetyenziswa kwemali nokugcinwa kweencwadi. Oku kuthintela iimpazamo ezinokukhokelela kwizohlwayo xa kungeniswa amaxwebhu kwixesha elizayo.

Umgcinizincwadi angakunka ingqiqo ngemeko yangaphandle ngendlela yokulawula uhlahlomali lwakho futhi aqhube ishishini lako ngendlela encomeka ngakumbi. Angakufundisa neendlela zokuphungula iindleko, akutyhillele nangenkitho yakho nezinye izinto.

Nantsi eminye imibandela efanele ukugqalwa xa kakhethwa umgcinizincwadi:

- Umgcinizincwadi wakho ufanele ukukwazi ukubonisa irekhodi yomzila weempumelelo, ngakumbi phakathi kwabaxumi kushishino lwakho. Buzisa futhi ufunde banzi ngokuziphatha komgcinizincwadi nangomsebenzi wakhe.



- Umgcinizincwadi othembekileyo ufanele ukuba nesiqinisekiso, nangona iimfuneko zasemthethweni zabagcinizincwadi zingekho ngqongqo njengezeengcali zobalomali. Cela umntu onokuba ngumgcinizincwadi wakho akunike amagama abantu abanokuba ngamangqina akhe eenkonzo zodidi oluphezulu azinikayo.
- Kuluncedo kakhulu ukuba neentlanganiso zamaxesha athile nomgcinizincwadi wakho, ukuze ungabi ngumntu ozingela abagcinizincwadi kwindawo ohlala kuyo.
- Fumanisa indlela awabeka ngayo amaxabiso. Ufanele ukumxelela iinkonzo oza kunqwenela ukuba akwenzele zona. Thelekisa amaxabiso abagcinizincwadi.

Umgcinizincwadi olungileyo ufanele ukulazi ngokuchanekileyo na-nqokugqibeleyo ishishini lako – oko kuquka nendlela osebenza ngayo, abantu abakukwelitayo kune neenkitho zakho eziphambili. Uya kukuxelela ngolangazelelo lwakhe ukuqinisekisa ukuba ishishini lako ligcina umthetho ngokupheleleyo kwaye iinkukacha zifumaneka ngexesa elifanelekileyo. Ukuba iinkqubo zakho zogcinozincwadi ziya fumaneka kwaye zikusebenzela kakuhle, ishishini lako liya kubonisa ubungcali obuthe kratya, nawe uya kubona ukuba uyichithe kakuhle imali yakho. ■



JENNY MATHEWS,
INGCALI NOMHLOLI
WOLAWULO NOPHUHLISO

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Iziqhelo zaphesheya zinefuthe kumaxabiso ezityalo

NGONYAKA NGAMNYE XA IMELIKA (USA) IQALISA UKULIMA NGEXESA LAYO LOKUTYALA, INTENGISO YEHLABATHI IKEKELELA NGA-KWINTENGISO YEMOZULU. OKU KUTHETHA UKUBA OKWENZEKA KWISITYALO SASEUSA KUNEFUTHE ELIKHULU KWINTSHUKUMO ENXULUMENE NENTENGISO.

Kwixesha langoku lokulima, iimeko zesityalo seembotyi zesoya zibonakele zisehla ukususela ekuqaleni konyaka zaze zakwelona nqanaba lisezantsi phakathi kukaJuni noJulayi, apho iimeko bezifikelele kuma50% ukuya ekubalaseleni. Ngoku, isityalo sikhwimeko yama54% entle ukuya ekubalaseleni, xa kuthelekiswa nama59% exesha lokulima elidlulileyo. Oku kukhokelele ekunyukeni kwamaxabiso kwintengiso yehlabathi.

Esi siphumo sibizwa ngokuba yindibano malunga nezothuso zezonakalisizityalo. Emva kokuphucuka kweemeko zemozulu, le ndibano iye yavalwa aze aphinda anyuka kwakhona amaxabiso ngenxa yoxinzelelo. Ngomhla wama30 kuJuni, iSebe lezoLimo laseMelika (USDA) likhuphe ingxelo eyalatha ukuba indawo elinyiweyo yeembotyi zesoya ibingaphezulu nge5% kunaleyo ibilindeleke ekuqaleni kanti indawo elinye umbona yehle nge5%. Ngoko ke, ukuphucuka kwemozulu nokwanda kweehkture kubek umbona kuxinzelelo, kodwa ingxelo ikwazile ukunciphisa iintshukumo zamaxabiso ezisingisa ezantsi malunga neembotyi zesoya.

Amaxabiso aphinde afumana inkxaso emva kokuba iRussia ibhengeze ngomhla we17 kuJulayi ukuba ayisayi kolulela imvumelwano yobukho beenqanawa zayo kwiBlack Sea phakathi kweRussia neUkraine. Le mvumelwano iphathelele ekuben iinqanawa ezithwele impahla zinako ukuqhutywa ngokukhululeka kwingingqi yeBlack Sea, ngaphandle kwesoyikiso sokuhlasela kwamajoni escala ngalinye.

iRussia ithi imvumelwano ayisawukholisi ngokugqibeleyo umda welizwe lakhe ngoko ke, ikhethe ukungayoluli. Oku kukhokelele emaxabisweni axhaswayo, njengoko intengiso ibingaqinisekanga ngendlela isi-gqibo esiya kuchaphazela ngayo ukuhamba nokufumaneka kweenkozo nembewu yeoyile.

Olu hlolo lorhwebo lungabonwa njengorhwebo lolovo okanye iweemvakalelo. Xa ujonga umfanekiso omkhulu, ibali libonakala lahluke kakhulu. Okulindeleke kwisityalo esithe chatha ngobukhulu kweli xesha lokulima kungakhokelela kwimpahla egcinwayo yokuvala ethe chatha ekupheleni kwexesha elizayo lokulima. Ngoko ke, kulinndeletek ukuba amaxabiso eenkozo abe kuxinzelelo ethubeni xa kuthathelwa ingqalelo imibandela esisiseko. ■

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Inkgubo egugula ubomi babantu



Umbulelo omkhulu ovela kubalimi

ESINYE sezicwangcisocebo sophuhliso esinempumelelo esisetyenziswa yiNkqubo yeGrain SA yoPhuhliso IwabaLimi luqequesho nophuhliso lwezakhono. Izifundo ziqulethe okuhlohlwa engqondweni kunye namathuba okuziqhelanisa ngokusebenza ngezandla kwaye zinikwa ngolwimi abaluqondayo abo baye kuzo.

Ezi ziganeko zibe nefuthe elingenakulinganiseka kwimisebenzi yophuhliso lwabalimi kwiminyaka ngeminyaka. Kude kube namhla iirekhodi zibonisa ukuba sekunikwe phantse izifundo ezingama 3 000. Kanti abalimi abayeki ukucela izifundo, eziqwelasela nezinye izihloko, I-Grain SA iyaluncoma ulwahlulelwano enalo nabanya abancedisa kwinkqubo yoqequesho efanelekileyo ngonyaka ngamnye.

Sibulela inkxaso yeMaize Trust neyeOil and Protein Development Trust (OPDT), amathuba alandelayo oqequesho afumaneke ngenyanga kaJuni:

- Izifundo ezibini 'Intshayelelo ngokulinywa kombona' zinikwe abalimi eMpuma Koloni.
- 'Intshayelelo ngokulinywa kweembotyi zesoya' sisifundo esinikwe kwiningqi yaseDundee neyaseLouwsburg.
- Abalimi abavela kwisiphaluka saseLouwsburg nesaseDundee bebeye kwisifundo esithi 'Intshayelelo ngokulinywa kukajongilanga'.
- Izifundo zokuziqhelanisa nezhakhono zokusebenza malunga nomatshini wokutyalu nokufakwa kwemilinganiselo kwisitshizi esoluliweyo zinikwe kwisiphaluka saseDundee.



Ngethuba lokunkwa kwesifundo, 'Intshayelelo ngokulinywa kukajongilanga', umqequeshi uTimon Filter ubonise iQela loFundonzulu laseMiddelburg indlela yokuthatha isampulu zomhlaba. Baphinde bafunda okuthe kratya ngokufakwa kwemilinganiselo kumatshini wokutyalu.

Umbulelo omkhulu OVELA KUBALIMI

ABANYE babalimi abebeye kwizifundo kwinyanga kaJuni bathethe benjenje ngombulelo wabo emva kwezfundo zoqequesho.

- 'Ndinovuyo olukhulu ngempumelelo efezekileyo yoqequesho, futhi bekukuhle ukuba nalo mhlolli ukuze sifunde banzi ngomsebenzi wokufama. Ndifuna ukuphinda ndibuye ndize kufunda ngezinto ezinkulu kwakhona. Izifundo ebezisenziwa ngokuziqhelanisa nomsebenzi ndivune lukhulu kakhulu kuzo. Yonke into yensiwe ngendlela encomekayo.'
- Samuel Ramothibe
- 'linkcukacha ebezihlohlwa bezisemgangathweni oncomekayo – bezacile futhi besikwazi ukuzilandela kakuhle. Nathi besihlomla ngamava ethu nangengqiqo yethu ngokufama. Sixhotisywe nangabalimi abanamava, safunda nangendlela yokuhlwayela, amaxesha okulima nangawokuvuna oojongilanga. Sifunde ngomgaqo wokuphethula umhlaba nangeentloba zoomatshini. Sicaciselwe ngeendlela zokutshabalala ukhula nezonakalisizityalo nangendlela yokufaka imilinganiselo kwizitshizi zethu. Ngoku ndiyayazi indlela yokufaka izichumiso entsimini yam. Futhi sifunde ngokuthe kratya nangeetrekta.'

- Doctor Tshoba
- 'Ulwazi belutyebile kwaye luza kuba luncedo olukhulu. Umqequeshi ebiesichazela kakuhle futhi ecacisa. Ungumntu onolwazi olunzulu. Imizekelo ibisinika ingqiqo ebanzi ngakumbi. Siyabulela Ulwazi olubanzi lomqequeshi luyixhase kakhulu ingqiqo yeqela lethu. Imiboniso ibisensiwa kakuhle. Enyanisweni, ubomi bethu buphuculwe ngaphezu kokuba bebjnalo ngaphambili!'

– Petrus Mtsweni



UTimon uye waqinisekisa ukuba abalimi beQela loFundonzulu lePixel, abebeye kwizifundo ezithi 'Intshayelelo ngokulinywa kweembotyi zesoya' bafunda banzi ngokulinywa kweembotyi zesoya nangokufakwa kwemilinganiselo kwihapulasaka. Ithuba lokufunda ngeenkukacha zemisebenzi yokufama zisixhobise kangangoko – sithi nangamsi kumxasi uOPDT.