

# PULA IMVUILA

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## Hlala ugadile NJALO!

Incwadi yeGrain SA  
yabalimi abasakhulayo



Ummbila ka-Mnu Mzwayi Zuma noMnu Musa Khumalo.

**N**ginenhlanhla yokusebenza uduze nama-smallholder amanangi nabalimi abasebancane ezindaweni ezisemakhaya KwaZulu-Natal. Ngokuhubekayo la balimi bayangimangaza ngalokho abangakuthola emhlabenzi omncane, nangalokho babe bebhakene nezinselelo ezinzima nsukuzonke.

Nginobufakazi bokuthi abalimi abachitha isikhathi esiningi amasimini abo, benakekela izilimo zabo futhi begade izinambuzane ezingafuneki nemfuyo yibo abavuna kakhulu ngesikhathi sekuvunwa.

Eningathanda ukukuzuza ekubhaleni le athikhili ukubona iningi labalimi abancane bethatha indima yokunakekela nokuvikela.

Kudingeka sisukume silinde izilimo zethu size sivune isikhwebu sokugcina. Senze njengoba sinakekela izingane zethu kusukela kusana kuye kwabadala, ngakho nathi kufanele sithathe indawo yobuzali kuzilimo zethu uma sifuna ukuzibona zikhapha isivuno futhi ziphumelele.

Ngakho ke, yiziphi le zinselelo futhi yini eyenziwa abalimi ensimini ukuziqeda?

### Amagwababa

Amagwababa ahlupha kabi futhi angadala omkhulu umonakalo emmbileni osanda kumila. Njengoba izithombo ezincane zivela enhlabathini, amagwababa ayazingqofa ngasinye ngasinye, ulayini ngolayini. Uma siwashiyi ukuba azitike ngezithombo, akukho okuzosala.

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## UGOGO JANE UTHI...

**K**amuva nje sike sahambela kakhulu ezindawo ezikhqizwa okusanhlamvu eNingizimu Afrika futhi zonke izilimo zinhle. Siyabonga kakhulu ngezimvula ezinile ukuze amakhaya nesizwe sethu azoba abavikeli bokudla. Ukuba nokudla yisisekelo esikhulu sesidingo somuntu futhi siyathokoza ukusiza abalimi abondla isizwe sethu.

Njengoba zonke izinto, zinezinselelo. Manje njengoba sizothola isilimo esihle kudingeka sicabange ngokuvuna nokugcina ukudla. Mayelana nobungozi obuhambelana nokudla, kudingeka sijikelele izindlela zokuvuna nokugcina okusanhlamvu. Kubalulekile ukuba sisize okusanhlamvu kwethu kome ngokuphelele sikubeke lapho kuheleza khona umoya – ukulondoloza okusanhlamvu okuswakeme kuzokwandisa ubungozi ubuhlobene nokuvela kwe-fungal kanti le fungi iholela ekuveleni kwe-*mycotoxins*. Mlimi othandekayo – khuimbula ukuthi isilimo sakho ukudla kwabantu nezilwane futhi umsebenzi wakho akukhona usuke ungaphelile kuze kuge isilimo sakho siyoma futhi sibekwe ngokuphephile.

Uma unokusanhlamvu okusele, ungadayisa (uzitholele imali) futhi ungondla nekhaya lakho. Umndeni wakho ufaka phakathi izinkukhu nemfuyo yakho, kwa-bakulu nabancane. Njengoba sisanda kuvakashela abalimi abancane endaweni yaseMthatha, ngikhumbole i-value yokukuba nokusanhlamvu okuningi ekhaya – omunye umlimi usichazele ngendlela onda ngayo izinkukhu, i-Moscow ducks, izimbuzi, izimvu nezinkomo. Ukuba nokudla okwanele kuzokwandisa ukukhqiqa kwemfuyo yakho yonke.

NgoMeyi, uSuku Lokuvuna IweNAMPO phecelezi i-NAMPO Harvest Day uzobe isingethwe eBothaville futhi (eFreystata). Kulo nyaka sizoba nombukiso oyisipesheli wezimpahla zabalimi abancane. Leli yithuba elikhulu lokubona le mboni enkulu yokusanhlamvu – amasaplaya ama-input, amasaplaya emishini kanye namanye ama-stalls adingekayo. Sinethemba lokuthi sizokubona ku-NAMPO 2017.

Asiyjabulele yonke le sizini yaseKwindla – ngokushesha uzobe usebenza kanzima uthutha isivuno. Sibusiseke kakhulu futhi kudingeka sizibale izibuso zethu sibonge futhi nesivuno esihle.

## Hlala ugadile njalo!

### Isixazululo

Kufanele ube khona njalo ensimini yakho yommbila kusukela ekuseni lize lishone. Faka amahora omfutho ukuze kube khona ongakuvuna. Ngizothanda ukusebenzisa isibonelo sabalimi ababili bakwaHlathikhulu endaweni yaKwaZulu-Natal, uMnu Mzwayi Zuma noMnu Musa Khumalo. Labalimi ababili abazinikele balima amasimu angomakhelwane umhlaba olinganisewa kumahektha ayisikhombisa. Bayashintshana ukuqapha izilimo basebenzisa iziswebhu badubule nangezikilingi bethusa la masala andizayo abaleke. Ukusebenza kanzima kuze kube inhlamvu yombila isithela enhlabathini (ngokuvamile kulinganisewa kumaviki amabili e-post emergence), kodwa amandla abo nomajanjani azoba nenkokhelo.

### Ama-gerbils

Ama-gerbils amagundane akuthanda kabi okusanhlamvu futhi asengenkulu inkinga eNingizimu Afrika. Kubukeka sengathi izinombolo ziyakhula minyaka yonke, ngenxa yokweswela okungawabamba kuwadle. Avamise ukuhlala kumakoloni emasimini ommbila angabonakala ngezimbotshana eziningi ezisondelene duzane zingalingana nosayizi webhola lethenis. Angadla izindawo ezinkulu zokusanhlamvu okutshaliwe lokho kunciphisa isivuno sakho futhi kuzwisa ubuhlungu lapho kukhula khona ukhula enhlabathini engamboziwe. Iningi labalimi liba nobunzima ukuthola isixazululo sala magundane.



U-Mnu Mzwayi Zuma ukhomba ulayini wommbila odliwe yizinkomo.

### Isixazululo

Kukhona izinyathelo zamakhemikhali okulawula angasetshenziswa ukulapha imbewu ngenkathi utshala noma abhidlize



Uphethe isiswebhu wethusa izinkomo.

izimbobo. Ngeke ngioxo ngalezo zinyathelo kule athikhili. Uma ufuno ulwazi olugcwele, ungathintana nomele amakhemikhalu akusize.

Kodwa nangaphandle kokusebenzisa amakhemikhalu nalapho usangenza omkhulu ume-hluko ngokusebenzisa isekelo samasu ambalwa okulawula. Khumbula ukuthi imvelo iyisimanga ngokunikeza ibhalansi. Lapho umuntu engene-lela khona 'le bhalansi' iyaphazamiseka. Ngakho qaphela ukuthi izinto zisebenza kanjani endaweni engaphazamisekile futhi uzame ukukwenza lokhu kufane. Faka izigxobo azungeze insimu yakho ukusiza izikhova zizinge amagundane. Ungazibulali izinyoka! iziNyoka zingabazingeli bemvelo bamagundane. Uma singabulala izinyoka amagundane azokwanda ngokweqile sibhekile. Uma ubona inyoka ngesikhathi usebenza ensimini yakho, iyekeli yenze umsebenzi wayo.

Ekugcineni umuntu kufanele abe ne-khono. Ngingsathanda ukusebenzisa isibonelo sikaSindisiwe Gama endaweni yase Loskop eduze kwase-Escourt. Ngosizo lwendodana yakhe, wasebenzisa amakhulu ezithiyo esebe-nzisa ucingo nemeshi futhi azibeka yonk'ndawo maduzane nemigodi yala magundane noku-sanhlamu phakathi aheheke angene. Abe

Phumelela kakhulu ngezinyanga zasebusika ngesikhathi ukudla kungatholakali kalula. Uma ubekezelu futhi uzinikele kulo msebenzi uzobona ubuncgono okumakiwe uma uphinda utshala.

### Izinkomo

Izinkomo ezindaweni zasemakhaya zizwisa ubuhlungu obukhulu kunoma yimuphi umlimi otshala emhlabeni ngokuhlanganyela. Le nkinga yenzeka ikakhulukazi ngezinyanga ezi-holela ebusika ngesikhathi ukudla sekuqala ukuncipha. Abanikazi bemfuyo bayidudulela emasimini alinywa ngokuhlanganyela lapho kusuke kusenokudla okuningi idale omkhulu umonakalo emmbileni osemasimini. Ngakho ke abalimi abaningi bavuna izikhwebu zakhe ngaphambi kokuba zome futhi bazithuthela emizini yabo bayozigcina. Lokhu kwenza izikhwebu zilahlekelwe yisisindo futhi zibole.

### Isixazululo

Isixazululo esisobala ukubiyela insimu yakho; nakuba uthango lwebiya yingakho abalimi be-nghathandisisi ukubiya. Okwesibili ongakukhetha ukuxoxisana nabanikazi bemfuyo futhi nifinyelele esivumelwaneni ukuba bangazifaki izinkomo kuze kufike isikhathi sokuvuna emva

kwalokho bengasebenzisa i-stover esishiywe ensimini. Omunye engabiza ikhansela lendawo nomi iNkosi ingenelele ezingxoxweni. Uma konke lokhu kungaphumeleli, kukhona okunye okuncane ongakwenza kodwa ukufaka omunye umfutho futhi uhlale uwagadile amasimu akho. Uma wehluleka cela umfowenu, uma umfowenu engeke akwazi ungacela ubaba wakho. Ungazi-yekeli izilimo zakho ezyigugu zonakale.

Nakekela futhi uvikele, uhlale ugadile! Kusebenzise lokhu ebhizinisini lakho futhi uzowabona amandla akho ekhokhelwa ngesikhathi kufika isikhathi sokuvuna. Nge-mpela ngifuna ukubona abalimi abalima kancane bekufaka ezinhliziweni zabo. Kuzoholela ekutheni umndeni wakho ube nemali engcono futhi ufake isandla ekwesekeleni ube nemali engcono yakho nawe ufake isandla ekuvikeleni ukudla ezweni lakho.

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Uma ufuno iminininingwane egcwele, thumela  
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Indawo yommbila ubulewe amagundane.



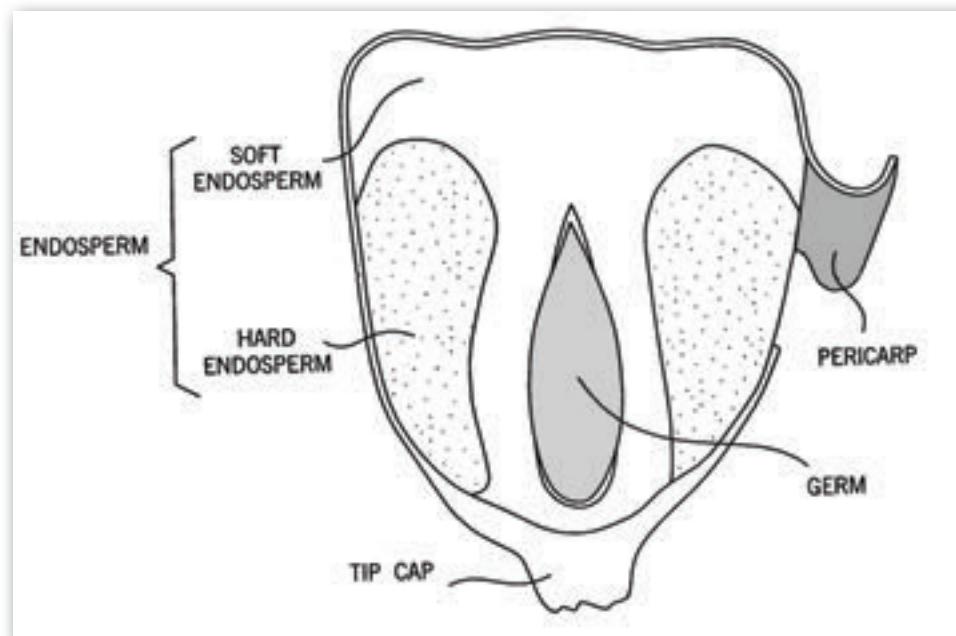
# I-mycotoxins ebalulekile eqondene nommbila

I ningizimu yaziwa ngommbila wayo uyikhalithi enhle futhi le silimo sibalulekile ukulimela ukudayisa noma emiphakathini elima kancane. Nakuba ummbila useshennzelwa izinto eziningi, okubaluleke kakhlulu ukuthi ukhiqizelwa ukudla nokondla izilwane.

Ummiba nemikhqizo yommbila idliwa abantu abaningi baseNingizimu Afrika (phakathi kwenani lama-67% no-83%), kanye ne - awareji yommbila ophekiwe odliwayo ngosuku uyisilinganiso esingama-476 g kuya ku-690 umuntu emunye. Ngenxa yalesi sizathu, ukunukubenza kommbila yi-fungi kanye nomphumela we-mycotoxins, selokhu kuletha okukhula ukuthazeka.

Kule athikhile edlule (kaMashi 2017) si-chazile ukuthi i-mycotoxins amakhemikhali anobuthi ekhiqizwa yi-fungi akhula ngokwemvelo kuzilimo ezahlukene. Nakuba ubungako bokumila kwe-fungal bungabonakala ngame-

Ifiga 1: Isakhwo se-kernel yommbila.



Ithebula 1: Incazeloso nenhoso yezinhlobo zama-fraction ommbila ogayiwe.

I-Milling fraction	Incazelo	Izimpawu	Imikhqizo yommbila
I-Grits	Umkhqizo i-Degermed iqukethe izincezu ezinkulu eziphukile ze-endosperm yommbila nengenayo i-husk ne-germ	Ukucwecweka	Kulungele ukudliwa ngebhulakufesi ama-cereals (ama-cornflakes) nesitambu
		Kuhhayekile	I-Cereal ne-snack food I-Maize Rice
		Imaphakathi (i-Semolina)	I-Cereal ne-snack food
		Ukucoyisakela (i-Semolina)	Ukuphisa Ipapa lommbila
Impuphu yommbila	Ukugaywa kwe-horny ne-mealy endosperm	Kuhhayeke kakhlulu (I-SUPER maize meal)	Ipapa lommbila I-Pancake nengxube yemafini, ama-corn snacks, i-cereal nemikhqizo yasebhikawozi
		Kuyimbundumbundu	I-Pancake nengxube yemafini, ama-corn snacks, i-cereal nemikhqizo yasebhikawozi
Ufulawa wommbila	Inhlanganisela yomkhakha warma-Kernel ongaphandle kommbila, i-pericarp ne-mealy andosperm	Ecoysisakele (I-SPECIAL maize meal)	Isinkwa sommbila nengxube yasebhikawozi, ukudla kwezingane, amabhiskidi, ama-wafer, ama-filters nama-carriers kumikhqizo yenyma nama-cereals ebhulakufesi
			Ama-Snacks and polenta
I-chop/bran	Inhlanganisela yomkhakha warma-Kernel ongaphandle kommbila, i-pericarp ne-mealy andosperm	I-Hominy Chop	Ukudla kwezilwane
I-Maize germ	Iqukethe ingxenyeye ye-embryo	Ino-oyili omningi	i-Oyili Ukudla kwezilwane

## UKULAWULA ISIFO

hlo enyama, ukwenzeka namazinga e-myco-toxins akubonakali. La mazinga angahlukana kakhulu isikhwebu sisinye, kanye naphakathi kwezitshalo ezingomakhelwane.

Ubudlelwano be-mycotoxins emmbileni okhiqizelwa ukudayisa eNingizimu ama: *i-Fumonism* (*i-FB*) ehambisana ne-*Fusarium Ear Rot*; *i-deoxynivaleno* (*i-DON*) ne-zearalenone (*i-ZEA*) ehambisana ne-*Giberella Ear Rot*, konke kudalwa *yi-Fusarium funga species*.

Ezindaweni ezesemakhaya eNingizimu Afrika lapho abantu belima khona ummbila njengokudla kwansuku okubalulekile (ukulimela ukondla uminden), *i-FB* ibiyi-mycotoxin ebaluleke ukwedlula zonke futhi ivamise ukwenzeka ezigabenzi eziphezulu kakhulu. Bekunjalo emakhaya aseMpumalanga neKapa (*e-EC*), *iLimpopo* (*e-LP*), NaKwaZulu-Natal (*e-KZN*). *I-DON* iphinde yabonakala emmbileni wabalimi abancane emakhaya ase-EC. *I-mycotoxin aflatoxin* (*i-AFLA*), ikhiqizwa *yi-Aspergillus flavus*, ibonakele emakhaya ase-LP nase-KZN. Isizathu sale mehluko ezindaweni zifaka phaksathi isimo sezulu, izibulali zinambuzane, ikhwalithi ka-oyili kanye nokwenza ezolimo.

### I-kernel yommbila

Labo benu abalima ummbila bazokwazi ukuthi *i-kernel* ngalinye lommbila lakhiwe ngezingxenezezahlukeni (**ifiga 1**) futhi ngakunye kwalokhu kubalulekile kwezowhebo. **Ithebulu 1** unikeza incazelos sesamari yezingxeneze *ze-kernel* (nephinde yaziwe ngokuthi *yi-milling fractions*).

### Ukwenzeka kwe-Fungal ne-mycotoxin ku-kernel yommbila

*I-Fusarium* ne-*Aspergillus* fungi ngama-soilborne organisms futhi avamise ukuhlala ezimvithini zesitshalo (ezinhlangeni) phakathi kwamasizini. Le-*fungi* ingaba nomthelela ezitshalweni ngaphambi kokuvuna ngezindlela ezahlukeni: Ngezimpande noma ihambe nezinhlamu ezinukubeziwe (*i-Fusarium*); ukuhamba komoya namanzu, kanye nangezianambuzane, nezinye izilonda (*i-fusarium* ne-*Aspergillus*). *I-Aspergillus* iphinde idume ngokuba inkinga enkuluma okusamnlamvu kungabekiwe ngokufanele. *I-fungi* ingena *ku-kernel* yommbila emkhakheni ongaphandle, bese ingena emikhakheni yama-kernel engaphakathi, ngakho ke *i-mycotoxins* yaziwa ngokuthi ingcwala kakhulu emikhakheni engaphezulu *ku-surface* ye-kernel yombila. Okunye futhi *i-pericarp* ingenza kwangathi *yi-physical barrier* ivimbele *i-fungi* engena *ku-endosperm*.

### Impelela ye-mycotoxins ngesikhathi kuphroseswa ukudla; ukugaya okomile njengesibonelo

*I-structure* sekhemikhali ye-mycotoxins yeza kwenzeke ukuyisusa ngokuphelele kuzilimo ngakho ke yenza kwenzeke ukuwasusa ngokuphelele kuzilimo ngakho ke kufanele ku-



Ama-kernel ommbila amahle 'anempilo'.



Ama-kernel ommbila onakele nanomthelela.

suswe kancane uma ukudla kuphroseswa ne/noma ezinye izindlela zokuhlanza okuthile (ukususa ukunukubezeka). Ukuphroseswa kokudla okunganciphisa ukunukubezeka nge-mycotoxin kufaka phakathi ukusotha, ukuwash, *i-dehulling*, *i-milling*, *i-brewing*, ukubhaka, uku-thosa, ukosa nokupheka nge-alkhalayni.

Ukugaya kommbila ne-*physical process* ithathwa njengesinyathelo sokuqala ekukhiqizweni kwemikhqizo yommbila ngokususa *i-structure* esingaphandle (*i-pericarp*) ukuveza *i-endosperm*, ebese iguqulelwa kuma-*fraction* afana ne-*grits*, *i-germ*, impuphu, nofulawa ocoysisakele. Ama-*fraction* assetshe-nziswa kakhulu assetshe-nzisela ukukhiqiza ukudla kwabantu *yi-grit*, nofulawa ngosayizi bezinhlayiya zabo ezithile nezigaba zavo, kanti ukugawa kwama-*fraction* *e-bran* ne-*germ* kusetshenziwa kakhulu ukondla izilwane ne-*oil extraction*, kuphela (*i-thebuli 1*).

ENingizimu Afrika ukugaya okomile kuse-tshenziwa kakhulu ukukhiqiza isitambu, irayis yommbila, engasefiwe, esefiwe, edlakazekile, impuphu *i-SUPER* ne-*SPECIAL*. Azigaba ze-mycotoxins kuma-*milling fraction* ahlukeni azohlu-

kana kuye ngama-fektha ahlukeni *i-fungi* ingene kangakanani *kwi-kernel* (emkhakheni ongape-zulu noma kongaphakathi) kanye nokuhe-phuka kwemvelo *kwe-kernel* ngayinye kube ibe ngama-*milling fractions* ahlukeni. Ngenxa yobucayi benqubo yenkambiso yokugaya ngenkathi ummbila ongaphrosesiwe ukhiqiza ama-*fraction* ahlukeni, izigaba *ze-mycotoxin* ingaphinda yabiwe noma iqoqelwe ndawonye.

Oshicilelweni olulandelayo sizoqhube ka nkokubheka ne-mycotoxins ehambelana noku-nye okusanhlamu okufana nokolo, amabele nobhali. Umbuzo ngamazinga okuphepha sizoyikhuluma kushicilelo oluzayo lapho sizoxxa khona ngomthelela we-mycotoxins empi-lweni yomuntu. ⚡

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# ISayensi isekela UKUKHIQIZWA KUKABHEKILANGA

**E**zolimo namuhla kufanele zilwe ngamandla ukuze zikhqizele abantu abaningi ukudla abaya ngokwanda ezindaweni ezinezinselelo zezonnotho. Akuseyona indlela yokuphila elandelwa yindoda eggoka i-avaloni nodangala. – ‘Ezolimo yiprofeshini ehlanganiswe kakhulu, isetshenzwa amaphrofeshinali asebenzisa

ithekhnikhi yesimanje, ulwazi lwesayensi kanye nemishini esungulelwu imisebenzi yabo’ – ngu-Earl Coke.

Ukukhiqizwa kukabhekilanga kudlala indima ebaluleke kakhulu eNingizimu Afrika izimo zokukhiqizwa kweziilimo. Umkhiqizo weminyaka uphakathi kuka-500 000 wamathani kuya ku-700 000 wamathani. Ube wusizo kumaphrogramu okujikelezisa izilimo kodwa futhi iyisilimo esihle ukusilima emihlabeni e-kwe-marginal. Okunye futhi, ikhula kahle enhlabathini enhlobomhlobo kusukela kwesindayo kuye kwi-sandy

*loam soil*. Olunye uphawu olubalulekile ukuthi ilinywa ngesizini emfushane kakhulu uma kuqhathaniswa nommbila ngakho ke ingatshalwa emva kwesikhathi lapho izimo sezivuma, futhi kutholakele ukuthi uyamelana nesimo sesithwathwa esisheshe saqala.

#### I-Crop Estimates Committee

Leli thimba lenza amasaveyi asayentifikhi ukulinganisa indawo etshalwe kuqala. Lolu ulwazi olusebenza kuwe mlimi njengoba luzokunika umhlahlandlela wokuthi yiziphi izimakethe ezisebenza kumasaplayi nezisekelo zamadimandi. Uku-tshalwa kakhulu kukabhekilanga uzokusho intengo ephansi ezimakethe nesikhathi soku-vuna. (Kanjalo nesemkhiqizweni wommbila.) Ukuhlolwa kwendawo yokukhiqiza ekuqaleni ngo-2017 ngu-665 800 ha, enciphe ngama-52 700 wamahektha ngesizini edlule okungaphansi kwama kunangesizini edlule. (Lolu

lwazi lutholakala mahala ku eku-<http://www.sagis.org.za>).

U-Dr A Nel e-Potchefstroom ARC-GCI imile kwelokuthi kuphela ngamazinga aphezelu asizayo kunqubo yomkhiqizo wakho ezoqinisekisa impumelelo ezimalini. Ngokwemvelo lokhu kuyisisekelo sokuqinisa ukulima – ngaphandle kwalokho masinyane abalimi bazophuma ebhizinisini futhi bangasakwazi ukondla isizwe esilambile! Ukhiye kuleli zinga lekhono ukuvulela ulwazi oluningi kakhulu ngama-cultivars atholakalayo, ukuze wenze izinqumo eziphusile mayelana nokuthi iyiphi e-cultivar efanele ngqo isimo sezulu sendawo kanye nesizini elinde-lekile. Abalimi abasha kufanele bakhulume nabadayisi bembewu ezinkampanini, omakhe-lwane abanolwazi futhi bathole lolu lwazi olula-nelayo nge-cultivar ngayinye:

#### Amandla esivuno

Lawa amathani okufanele uzindle ngokuwvuna ngehektha lilinye ngesizini yokulima ejwayelekile. Thola ukuthi singaba ngakanani isivuno sesikhathi eside sesilimo sikabhekilanga olinywa endaweni okuyo. Lokhu kwenza ukwazi ukusetha ithagethi yesivuno sakho.

#### Inani lamalanga ayela ekuqhakazeni

Lokhu kabaluleke kakhulu. Izinsuku zakho zokutshala ngempela zizoba nomthelela ekukheteni kwakho imbewu. Ukwenza isibonelo uma ungeke ungene ensimini ngenxa yemvula eningi nesimo sokuba manzi – noma okungenani, uma bekome ngokweqile ukuba utshale kudingeka ucabange ngenani lezinsuku ongaba nazo ezi-sele ngesizini yokutshala ngaphambi kokuqala kwesizini yesithwathwa, futhi ukhethe imbewu ngendlela.

Yiqiniso elaziwayo eliboniwe ukuthi ngokwamatemu e-genetics inqubekelaphambili

#### Pula Imvula's Quote of the Month

*If everyone is moving forward together,  
then success takes care of itself.*

~ Henry Ford



bekade ihamba kancane ekwakhethi izinhlobo ezintsha zikabhekilanga nokuqinsa amandla esivuno. Ubhekilanga umsebenzi uyinto ENHLE KAKHULU njengokukhethwa kwamacultivar ngakho lokhu kuyoHLALA kusebenza ngokubambisana.

### **Amanye amafektha anomthelela esivunweni sikabhekilanga**

- Ukulungiswa komhlaba kubalulekile. Kudingke uzifundise wena ngemikhuba evamile yokulungiselelwa kwamasimu endaweni yakho uphinde uhlale unolwazi ngokucabanga kwe-simanje mayelana nokunakekelwa kwenhlabathi okuyo. Njengoba iningi labalimi likhetha ukulandela indlela yokungathili zombili ngenxa yokwakha inhlabathi enempilo uze kufinylele ekunciphiseni izindleko zokulungisa inhlabathi. Ukungathili akuzenzakaleli – kufanele ukuzele ngobusayensi kanye nangenqubo yokuzifundisa wena nangokuqoqa ulwazi.
- Ukuafaka kahle umanyolo kubalulekile njalo futhi kudlala indima ebalulekile esivunweni esitholakele. Iphrogramu yakho kamanyolo kufanele isekelwe ekucwaningweni kwenhlabathi ngokwesayensi. Isitshalo si-kabhekilanga saziwa ngokusebeniza amanyuthriyenti asenhabathini kahle kakhulu ngenxa yenkambiso yezimpande zayo ejijule kakhulu ezikwaziyo ukufinylela kumanyuthri-

yenti ezingeke ezinye izilimo zikwazi uku-finylela kuwo ziwathathe.

- Inani lezitshalo yilo kuphela elibalulekile elinomthelela emandleni esivuno. Ukunakekelwa izithombe ezisencane ngesikhathi sobunzima nezinselelo esigabeni sokumila kwazo kulawulwa ngokusezingeni eliphezulu kakhulu futhi kungenzeke kudingke ukuba skarifaye usafesi yomhlaba ngaphambi kokuba kumile, okuyinto ejwayelekile ezinsukwini ezi-3 kuya kwe-4 emva kokutshala. Isitendi sezitshalo ezingama-30 000 – kuya kwezingama-45 000 ehektheni umhlahandlela we-avareji enhle uma inhloso yakho kuyisivuno esilinganiselwa ku-2 t/ha. Uma unestendi esihle ensimini uzobheka amany amafektha okuqinisa isivuno sakho.
- Ukulawulwa kokhula kubalulekile. Ukhula luhangelana ngamandla kumanyuthriyenti nomswakama okufanele uzuzwe yizintshalo zikabhekilanga. Izitshalo ziba sengozini emevikini okuqala ama-3 kuya kwa-4, njengoba lena yingxene ehamba kancane ekukhuleni kwazo. Kuhle futhi ukulima kokugcina ngaphambi kokuba amagandaganda engasaphindi angene ensimini engalimazi izitshalo.
- Ukulawula izinambuzane kubalulekile futhi lokhu kudinga ugade isilimo sakho njalo ubheke izimpawu zezinambuzane kusukela esigabeni sokuqala samaqanda nezibungu. Uma kudingeka usebenzisa ama-herbicides

ukulawula ukuhlaselwa kwezinambuzane, kuhle ukusebenza ngokubambisana na-bezinkampani ezidayisa amakhemikhali abazovakashela ensimini futhi bakweluleke ngama-aplikheshini rates. Qinisekisa uku-thi abasebenzi bakho epulazini bafundiswe kahle ngokusebenza kwamakhemikhali no-kuthi banazo iziggoko zokuvikela ezifanele ukuqinisekisa ukuphepha kwabo ngaso-sonke isikhathi.

Akusho ukuthi ubhekilanga yisona sodwa isilimo esinenzozo nongasijabulela, kodwa ungaba nomthelela obalulekile kuphrogramu yakho yokulima yesikhathi eside ngenxa yentengo ephansi yama-input nangokuthi wenza kahle kakhulu ngaphansi kwezimo ezomile jikelele, okuyinto ejwayeleke kakhulu kubakhi-qizi baseNingizimu Afrika.

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# Ukuhlolwa kwesivuno nohlelo lokuvuna

I sizini yokukhiqiza yasehlobo ka-2016/2017 manje isiyela ngasekuvuneni kanye nasesi-gabeni sesoya, ubhekilanga nezinye izilimo zasehlobo. Lo nyaka ube nezimvula ezinhle ngaphambi kwesizini yokutshala ihle iba nezi-wombe zokushisa kakhulu nokomisa ngoNovembra nangoDisemba.

Isikhathi esingaphambidlana kokuba isoya yakho sifinyelele esigabeni sokuvuthwa yisikhathi esihle sokuhlolola zonke izinquo zaphambilini zokuphatha kuhambisane nemvula etholakele ngealeso sikhathi nesilinganiso sesivuno esingaqhathaniswa nesivuno sokugcina nge-combining.

## Isilinganiso sesivuno sesoya

Isilinganiso sesivuno kule sigaba kunganikeza uwazi olubalulekile njengemininingwane yohlelo yokuqala kwe-combining yomhlabo waphambilini, ne-combine yomthamo odingekayo, isamba sesisindo sesilimo esilindelekile, umhlabo kuya ku-storage delivery, umthamo we-storage delivery odingekayo, izindleko zokuhlanzwu nezokomiswa ezizokhkhwa, nesu lokumaketha.

## Isilinganiso samathekhniki

Amandla esivuno yisilinganiso esibalulekile semi-khaka emine inani yezithaloo ihektha ngalinye, inani lemidumba kanye nenani lezinhlamu ikhilogrami ngalinye.

## I-Methodology

### Izitshalo ihektha ngayinye

Sebenzisa ithephu yokukala ukukala ubude buka 10 wamamitha eztishalo kulayini otshaliwe wesoya okungenani kuzilimo eziyi-10 ze-avareji emelele izindawo ezyisampuli emhlabeni othile. Gwema ama-headlands noma izindawo eztishalwe zaba isiphambano onqenqemeni lomhlabo ohloliwe.

Bala inani lezitshalo eztithole imidumba eba-ageni elingamamitha ayi-10 kalayini. Hlukanisa le samba kumasampula ayi-10 ngolayini abayi-10 wamamitha uzothola i-avareji yezithaloo kulayini ka-10 wamamitha ngamunye. Phindaphinda le ansa nge-10 ukuze ikunike inani lemidumba ethele eztishalweni kumamitha ayi-100 kalayini atshaliwe kwihektha elitshaliwe endaweni eyisikalo esingamamitha ayi-100 by 100 mitha skwele. Ngesikwele esingamamitha ayi-92 izikhala za-

malayini uphindaphinde le ansa engaphezelu yolayini abangamamitha ayi-100 by 110 olayini abatshaliwe ihektha ukhiphe i-ansa edingekayo yemidumba ethelwa yizitshalo ku-ha. Sebenzisa i-multiplying factor ka-133 wolayini ihektha eli-tshaliwe lika-75, wamamitha olayini.

### Imidumba nezinhlamu ihektha ngalinye

Khetha izitshalo eziyi-10 nomaphi bese ubala imidumba. Hlukanisa nge-10 ukuze uthole inombolo ye-avareji yemidumba isitshalo ngasinye. Khumbula ukuthi imidumba engaphansi kuka-12 cm kusuka enhlabathini ngeke ikhiwe yi-combine head. Vula imidumba bese uhlola inani lezinhlamu ezikhule ngokuphelele umdumba ngamunye okuvamise ukuba phakathi kuka 2 no-3 wezinhlamu umdumba ngamunye. Ngonyaka wesomiso sebenzisa u-2, ngonyaka oku-avareji sebenzisa u-2,5 bese kuthi ngonyaka omuhle sebenzisa u-3. Phindaphinda i-avareji namba yemidumba nge-avareji namba yezinhlamu, phindaphonda ngenani lezitshalo/ha uzothola inani lezinhlamu//ha.

Njengoba kubonakala ku**Thebula 1** isisindo sezinhlamu siyahlukana kakhulu futhi singafektha umphumela wesilinganiso sesivuno kakhulu. Khetha noma wenze isilinganiso noma ukale isisindo sezinhlamu ukuze uqonde ngqo bese uphindaphinda inombolo yezinhlamu/ha ngenombolo yezinhlamu/ha ngesisindo se-mhlamu inhlamu ngayinye. Hlukanisa nge-1 000 ukuze uthole ama-kg/ha uphinde futhi ngo-1 000 ukuthola i-t/ha.

Nciphisa le ansa ngo-10% wokuvuna noku-lahlekelwa.

### Isibonele

Usuyihlolile inhlabathi njengoba kuchaziwe ngalokhu okulandelayo izibalo zikhonjisive ngezansi. I-avareji yenombolo yezithaloo per 10 metre tests 220; ububanzi belayini, 92; imidumba isitshalo ngasinye 20; izinhlamu umdumba ngamunye 2,5; isisindo sama-kernel/ezinhlamu 0,15 grams.

### Izibalo

- 220 izitshalo per test x 10 (100 wamamitha ulayini) x 110 (wolayini per ha) = **242,000 pl/ha**.
- **242,000 pl/ha** x 20 (imidumba/pl) x 2,5 (izinhlamu umdumba ngamunye) = **12,100,000 izinhlamu/ha**.
- **12,100,000 x 0,15 (ama-grams per seed)/1 000 (kg's/ha)/1 000 (t/ha) = 1,815 t/ha**.

**Ithebula 1: Isisindo sembewu i-hektha.**

Isisindo sezinhlamu (ngamagramu)	Izi-nhlamvu/kg	Incazelo kasayizi wezinhlamvu
0,18	5 556	Amasampuli ezi-nhlamu zokudayiswa eziqinisekisiwe
0,17	5 882	Isampuli yezinhlamu ezivunwe epulazini – unyaka ojwayelekile
0,16	6 250	Izinhlamu ezivunwe epulazini – unyaka wesomiso noma ezitshalwe sekwendlule isikhathi
0,15	6 667	
0,14	7 143	
0,13	7 692	
0,12	8 333	
0,11	9 091	

• **1,815 t/ha less 10% = 1,815 x ,90% = R1,64 t/ha isivuno esilinganisiwe.**

## Amathiphu okuvuna

Eyodwa yamafektha abaluleke kakhulu omkhqizo we-soya opumelele ukuba ne-combine yakho enakekelwe esesimeni esihle kakhulu enama-setting afanele nama-setting alungile e-drum speed ne-header futhi etholakala kalula njengoba umhlabo ngamunye udinga i-combine. Uma isilimo esivuthiwe sithola imvula umonakalo wokulahlekelwa ungaba mkhulu kakhulu. Uma usebenzisa ikontileka qinisekisa ukuthi uzoyithola kulezo zinsuku enikwe ngazo isaziso sokuthi leso sivuno sesilungile.

## Isipetho

Sebenzisa isilinganiso sesivuno sesoya njengethuluzi lohlelo lokuvuna lwasivuno samanje kanye nomsebenzi wokuhlolola ukuthi yimaphi amathekhniki azoba nomphumela womkhqizo oyimpumelelo ngesizini ezayo.

**I-athikhili ibhalwe ngumlimi osathathe umhlalaphansi.**



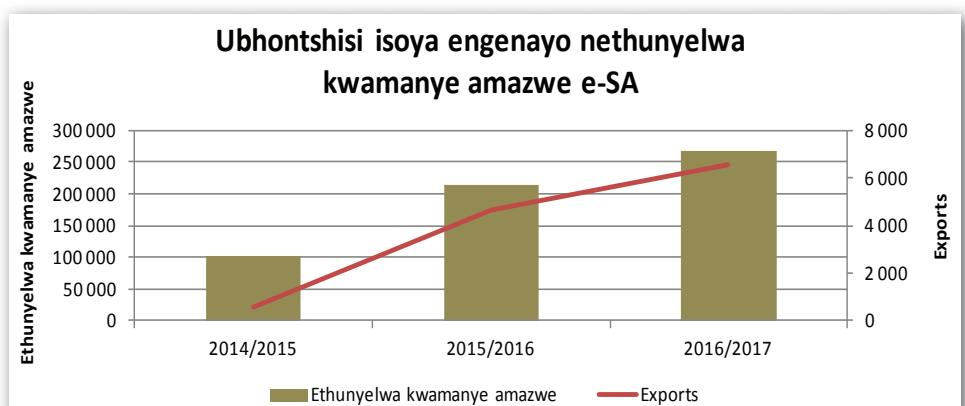
# Ithuba lokukhiqiza ubhontshisi isoya eyanele e-SA

**U**mkhiqizo wezinhlamvu zikawoyela ukhule ngamandla emhlabenii kusukela ngo-2012 ngenxa yokukhula e-United States, e-Brazil nase-Argentina. Ingxene yesizathu sokukhula kwalo mkhiqizo ukudlondlobala kwabathengi abanigi njenge China. Esikhathini esifanayo, iNingizimu Afrika nayo ibone kuba nokukhula emkhiqizweni, nakuba usengaphansi kwezdingo zeminyaka.

Kepha, ekukhiqizwa kwesoya ekhaya kwaphazanyisa yisomiso sesizini ka-2015/2016. Phakathi kuka-2014/2015 no-2015/2016 ngesizini yoku-maketha, umkhiqizo wesoya wancipha ngo-30% usuka ku-1 070 000 uya ku-741 550 wamathani. Kepha, ukubheka phambili, zikhona izimpawu zokuthi kungenzeka kube ngcono kule sizini.

Uku-aplaya i-Crop Estimates Committee (i-CEO) ukuqagula kokujala komkhiqizo konyaka

*I Grafu 1: Ubhontshisi isoya ethengwa ezizweni nethunyelwa ezizweni e-SA. Umthombo: I-SAGIS*



wokumaketha ka-2017/2018, kubikezelwa ukuthi umkhiqizo wesoya eNingizimu Afrika ungafinyelela ku-946 000 wamathani. Okuhambisana nalokhu

kulindeleka ukukhula kokondliwa kwabathengi, okungahle kukhule ngo-28% kusukela kusizini yamanje.

Ubhontshisi isoya edliwa abantu nakho kulindeleke kukhule kusuka ku-23 800 wamathani ngesizini edlule kuye ku-25 000 wamathani. Kubalulekile ukwazi ukuthi ukukhula kwamadimandi asekaya kasoya kushiya ithuba lokuthe-nga u-oyili namakhekhe ka-oyili, okusho ukuthi umkhiqizo wasekhaya, usengakaneli ukuba uhlangabezane nokukhula kwedimandi yakuleli.

**Ithebulu 1** Ichaza izimo ze-Grain SA Saplayi neDimandi. Okufanele kwanzeke ukuthi ngaphandle kwesivuno isingaba ngaphezelu kwe-avareji yesilimo ngesizini ezayo, iNingizimu Afrika ingasala kungyo ethumela ubhontshisi isoya azizweni – ngesilinganiswa esingaba u-70 000 wamathani okudingeka athengwe ezizweni.

Lokhu kuyinkomba yethuba elilele ekukhiqizweni kukabhontshisi isoya emhlabenii lapho ukondla izilwane nokudla kwabantu kukhula.

Kusukela kuGrafu 1 wesoya ethengwa yiNingizimu Afrika ezizweni kanye nemisebenzi yoku-thunyelwa emazweni eminyakeni emithathu edlule, kusobala ukuthi nakuba kuge khona ukukhula kokuthengwa ezizweni, lokhu kwaphinde kwalandelwa ukukhula kokuthunyelwa ezizweni. Ngakho ke kungcono ukuba abalimi bacabange ngesoya ngesikhathi sokuhlelela isilimo ukuze uhlangabezane – nokukhula kwamadimandi futhi kugcine sekunciphisa izidingo zokuthenga kwamanye amazwe ngokuhamba kwasikhathi, ngenkathi beqinise-kisa ukuthi le lizwe linomkhiqizo owanele emakethe okuthunyelwa kuyo. Ngokusho njalo, ukuthola ipprofithi kuzoba umhlahlandlela ekuthatheni isinqumo ngesizini yokutshala.

**Ithebulu 1: I-Supply and Demand Estimates. Umthombo: I-Grain SA**

Isaplayi nedimmandi kabhontshisi isoya eningizimu Afrika				
Ulwazi olusha	Isilinganiso se-Grain SA	Phansi kwe-avareji	I-avareji	Phezu kwe-avareji
		2017/2018**	2017/2018**	2017/2018**
<b>Unyaka wokumaketha</b>	<b>2016/2017*</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
Indawo etshaliwe (x 1 000 ha)	502,80	542,20	542,20	542,2
Isivuno (thani/ha)	1,47	1,50	1,65	1,8
I-CEO Isilinganiso silimo ('000 thani)	<b>741,55</b>	<b>813,30</b>	<b>894,63</b>	<b>975,96</b>
	('000 thani)	('000 thani)	('000 thani)	('000 thani)
<b>Ikhomeshiyali sapplayi</b>				
Istoko sokuvala (1 Mashi)	89,13	146,83	146,83	146,8
Amakhomeshiyali edilivari	711,55	<b>783,30</b>	864,63	945,96
Okuthengwa emazweni	450,00	230,00	150,00	70
<b>Isamba ikhomeshiyali sapplayi</b>	<b>1 250,68</b>	<b>1 160,13</b>	<b>1 161,46</b>	<b>1 162,792</b>
<b>Ikhomeshiyali dimandi</b>				
Ukulda	23,81	24,80	24,80	25
Ukuphaka (i-Full fat soya)	103,12	132,00	132,00	132
Ugayelwa u-oyili & ne-oilcake	960,00	850,00	850,00	850
Isamba	1 086,92	1 006,80	1 006,80	1 007
<b>Isamba i-comeshiyali demand</b>	<b>1 103,85</b>	<b>1 026,80</b>	<b>1 026,80</b>	<b>1 027</b>
<b>I-Carry-out (28 Februarri)</b>	<b>146,83</b>	<b>133,33</b>	<b>134,66</b>	<b>136</b>
Izidindo eziseza	135,87	125,85	125,85	126
<b>Okusele phezu kwe-pipeline</b>	<b>10,97</b>	<b>7,48</b>	<b>8,81</b>	<b>10</b>

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# Ukubaluleka kwesitatemende se-cash flow

**K**wamanye ama-athikhili ochungechunge Iwethu ngokuphatha esikhulume ngawo futhi saxoxa ngezinto ngemikhakha ethile ye-cash flow statement. Kule athikhili sizoxoxa ngokubaluleka kwe-cash flow statement kabanzi.

Isomiso sakamuva sikuveke phambili ukuthi kubaluleke kakhulu njengengxene yokuphatha kwezimali esiyinakile ku-cash flow statement. Kulezi zinsuku i-cash flow mhlampe yiso isibonakalo esibalulekile sokuphatha kwezimali zebhizinisi lezolimo.

Ukuphatha kwezimali kuqukethe imikhakha emine ebalulekile owoquqala ukugcinwa kwamrehodi nokuhlanganisa kwama-financial statements adingekayo. Inhoso ye-financial statements ukunquma ngomphumela wezezimali (inzuso/nokuhlekile) nge-income statement, ukunquma ngesimo sezezimali (ratio yama-asethi ahambiana nezikweletu) nge-balance statement kanye nokunquma ngesimo ekuso i-cash flow nge-cash flow statement. Ulwazi oluvela esitatemendeni bese ukhipha eyodwa enesithombe sempumelelo yebhizinisi lakho. Ibhizinisi lakho liphumelele ngo-100% uma imiphumela yeztatimende zontathu ziphumelele.

Ingozi yenqubo uma uhlanganisa i-financial statement ukuthi ngeke kwenzeke ukuthi umuntu ayiqondosise ngokucace bha lenqubo ukuze alungise izinombolo esitatemendeni, ikakhulukazi ku-balance sheet, nangokusezingeni eliphansi ku-income statement, ukuze kufanele inhoso ethile. Lokhu kungenzelwa izinhoso zentela noma uma udinga imamboleko. Kepha, ngenxa yokuthi i-cash stament yangempela ikhombisa ukheshe ongenayo nophumayo ebhizinisini ngeke ulungise ulwazi luhambla nenhoso ethile. I-cash flow statement yakho yangempela kufanele ibhalanse ne-bank statement yosuku olufanayo. I-bank statement ngumthombo wangaphandle wolwazi lwezimali. Lokhu kumele i-cash flow statement yokuqala ebalulekile – inikeza ulwazi lwezimali olushaya emholweni mayelana ne-cash flow yebhizinisi.

Okwesibili, i-cash flow statement kuzoba yiso isitatemende sokuqala esizokhombisa ukuthi ngabe kukhona okungahambi kahle noma cha ebhizinisini lakho. Kuhlobo lwezolimo oluxubile jikelele, ngokomthetho , i-ratio ye-cash flow kufanele ibe u-120% noma ibe ngcono. I-ratio ibalwa ngokubeka i-cash income/cash-outflow njenephesenti. Le sibo-

nakalo empeleni sizoba yiqiniso uma i-cash flow statement eqinisweni uzoba yiqiniso kuphela uma i-cash flow statement ibe sesi meni esihambisana nesikhathi futhe okunge-nani zonke izinsuku. Ngetekhnoloji yanamuhla lokhu kungatholakala.

Okwesithathu, ngokuphathekayo le sitatimende sikhombisa ukuthi ngabe uzoba nawo ukheshe owanele nganoma yisiphi isikhathi esithile, esifana nasekupheleni kwenyanga, ukuhlangabezana nazo zonke izidingo. Isibonelo ukukhokhela amaholo, ibhili kagesi, amakhawunti akhokhelwa nyangazonke, kanjalo kanjalo. Uma wehluleka ukuhlangabezana nazo zonke izidingo zakho noma ngasiphi isikhathi, kuzoba wuphawu lokuqala ebhizinisini yakho, ngaphandle uma ungakwazi ukuchaza leso simo ngokugculisayo. Ngabe ibe nezindleko eziningi zokukhizqa (i-outflow) ngaphambi kwe-inflow ka kheshe wesilimo esizovunwa.

Okwesine, esinye isibonakalo esibalulekile se-cash flow statement ukujaja amandla okusevisa isikweletu ebhizinisini lakho. Lokhu ngokuvamile kujawa ngokusebenzisa ulwazi njengoba luveziwe ku-cash flow statement. Kamuva nje lolu ushicilelo olubalulekile futhi uma ufaka isicelo sesikweleti kumebolekisi ngemali uzokwenza isilinganiso se-cash flow statement yakho. Obolekisa ngemali naye uzobala i-cash flow ratio eyisilinganiso usebenzisa ulwazi lweisilinganiso se-cash flow statement ebekiwe. Njengoba sekuchaziwe kuthathwa ngokuthi le ratio kufanele ibe u-120% nangaphezulu ikhombisa ukuthi kufanele ube nokheshe owanele ukukhokhela zonke izikweletu kanye nazo zonke ezinye izindleko zokulima njengoba kudingeka.

Ngaphandle kwalokhu okuxoxwe ngakho okuthathwa ngokuthi kubalulekile mayelana ne-cash flow statement i-value yangempela yale sitatimende ibonakala ngesikhathi kusettshenzwa ukuphatha ngokufanele mayelana nalesi sitatimende kufakwa. Lokhu kusho ukuthi ngaphambi kokuqala konyaka wakho wezimali kufanele wenze isilinganiso se-cash flow ezobe isiqhathaniswa nesitatimende sa-kho sangempela okungenani sanyanga zonke.

Ngokwenze njalo ulawula izindleko zakho futhi uma kwenzeke ukuthi usebenzise imali ngokweqile kufanele kuchazwe futhi uma kunesidingo kufanele kuguqulwe ihambisane ne-cash flow statement ngokufanelekile. Izimali ezhithwayo (i-cash-outflow) ngokujwayelekile ihlala ngokulawulwa.

Imali engenayo (i-cash-inflow) ngokuvamile inomthelela wama-micro factors ahlukene lapho umlimi unomthelela omncane kuwo, nakhona uma enawo. Uma i-income yakho lingaphansi kunesilinganiso, kufanele ushintshe i-cash flow statement ukwamukela i-income eliphansi. Ngokwamathemu aphathekayo i-income ephansi isho ukuthi unemali encane ozoyisebenzisa. Ngakho ke, kuzomele ucabangisise kahle nge-mali echithwayo futhi uma isidingo sikhona, zihlehlise izindleko ezithile. Imali ephansi enge-nayo futhi ingakuphoqa ukuba ufake isicelo sesinye isikweletu ukuze ugcine ibhizinisi lakho lisebenza.

Sekuphethwa, ukuphila ngaphansi kwesimo esinenselelo esikhona sebhizinisi lokulima eNingizimu Afrika, kubaluleke kakhulu ukuba nolwazi ngezezimali. ☺

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# Ukusabalala kwezinhlobo zezitshalo zasemazweni

**A**manzi amaningi aseNingizimu Afrika assetshenziswa yizitshalo okungezona zalapha. Zibizwa nge-*invasive alien plants*. Lezi zitshalo zi-*invasive* ngoba ziyasabala futhi zisuse izihlahla nezitshalo zethu zemvelo.

I-Invasive alien plant species (IAP) izinhlobo okuthi uma zingena na/noma ukusabalala kwazo ngaphandle kwendawo yazo yemvelo eyizabelo zayo kubeka engozini isayensi yempilo ngokwehlukana. Akuzona ezomdabu ku-*ecosystem*, futhi kungadala umonakalo kwezomnotho noma enhlalweni yendawo. Zinomthelala omubi kwisayensi yempilo ngokwehlukna, ukufaka phakathi ukuncipha noma ukususwa kwezinhlobo zomdabu – ngokuphangela amanzi kanye nokuthikamezwu kokusebenza kwe-*ecosystems* ne-*ecosystem*. Ukungena kwama-IAP, na/noma ukusabalala kwavo ngaphandle kwendawo yawo yemvelo, kunomthelela kusayensi yempilo ngokuhlukana cishe kuzo zonke izinhlobo ze-eosystem emhlabeni futhi zinge-zinye zeziyingozi ezinkulu kusayensi yempilo ngokwehlukana.

Ngaphandle kwezitha zemvelo, lezi zitshalo ziyazalana futhi zanda masinyane, zithathe amanzi abalulekile nendawo eztishalweni zethu zendabuko. Iztishalo eziningi ezivela kwamanye amazwe zidla amanzi amaningi kunezitshalo zakuleli, zinciphise imithombo yethu yamanzi ebelulekile. Isiminyamina sezimila zasemazweni futhi zingabhebhethekisa umlilo waqele, kuwenze ashise ngokweqile, okudala umonakalo wessimo senhlabathi endaweni eshile. Ama-IAP adla iNingizimu Afrika amashumi amabhiliyonu amarandi ngonyaka ngokulahlekelwa umkhinqizo wezolimo nezinsiza ezichithwa ekuwasensi noma ukualawula. Ama-IAP ayingozi enkulu empilweni ngokwehlukana ezindaweni okuna kuzo imvula, ngamandla okuphazamisa ibhalansi yemvelo entekenteke kwi-*ecosystem*. Njengoba sincike empilweni ngokwehlukana ukuze sithole amanzi, ukudla, izinkuni, umoya ohlanzekile umuthi kanye nokunye okuningi, kubalulekile kakhulu okuwuvikela lomthombo.

Umthetho uhlonde isamba sika-559 lohlobo iwezitshalo zasemazweni, okubalwa kuzo izinhlobo zezitshalo ezingama-383 ezisabalele eziyimkhakha emine ehlukene, nezinye futhi izinhlobo ezingama-560 ezisolhwini iwezinvavumelekile nezingeke zifakwe kule lizwe. Vakashela ku-<https://www.environment.co.za> ukuze ubone uhlala lwama-AIP nemikhakha yazo.

## Imikhakha yama-AIP

- **Umkhakha 1a no-1b:** Kufanele ususwe futhi ubulawe ngokushesha.
- **Umkhakha 2:** Ungatshalwa uma kutholakele imvume nalapho umnikazi womhlaba eqinisekisa ukuthi uhlolo olusabalalayo lungasabalaleli ukwedlula iprophathi yakhe.
- **Umkhakha 3:** Ngeke utshalwe.

Kuyajabulisa ukwazi ukuthi ezinye izitshalo ezihlaselayo zifakwa emikhakheni ehlukile ezifundazweni ezahlukene.

## Ukulawulwa kwezimila zasemazweni

Ziningi izindlela zokulawula ukumila nokwanda kokusabalala kwezitshalo zasemazweni. Uku-'phathwa' kuya ngohlobo olulawulwayo.

## Ngokwesayensi yokuphila

Izinye izitshalo zasemazweni zinezitha zemvelo, ezifana nezinambuzane nezifo ezi-afektha kuphela izinhlobo ezithile. Ama-ejenti alawulayo (inkumabulongwe, amavayirasi) asuka ezweni lapho zivela khona bese ezokhululwa lapha phakathi kwezinhlobo ezisabalele ukuze luzilawule.

## Imanyuwalli

Abahlaseli abasakhula nabancane bangakhisha ngezandla enhlabathini. Iztishalo kufanele zibekwe isitaki bese ziyashabalalisa ukuze zingaphinde zimile.

## Ukusebenzisa umshini

Iztishalo nezihlahla ezinkulu zinganqanyulwa noma ziwiselwe phansi. Izihlahla futhi zingabulawa ngokuxebula u-30 cm - 40 cm wegxolo eziqwini zazo (okwaziwa nge-'ring barking'). Lokhu kuvinbela ukudla kungayi emekhasini besi siyafa isihlahla.

## Amakhemikhali

Izindlela ezimbili noma ngaphezulu zingasetshenziswa ngaso leso sikhathi isib. Ukuxebula igxolo libe iringi bese futhi ufafaza isiqu nge-herbicides.

## Ungasiza kanjani?

- Funda ukuthi ungazihlonza kanjani, uzi-lawule kanjani futhi uzisuse kanjani izitshalo ezisabalaayo zasemazweni.
- Fundisa abanye.
- Joyina noma wakhe iqembu eligencia lilawule izitshalo ezisabalaayo zasemazweni endaweni yakho.
- Susa ama-IAP esemancane.
- Shintshanisa izitshalo zasemazweni ngezendabuko.

Tshala izitshalo zendabuko, ezisebenzisa amanzi ngokuwonga engadini yakho.

## Ama-IAP nomthetho

Umsebenzi wokulawulwa kwezimila zasemazweni kakhulu kusemandleni kubanikazi bomhlaba. Ngo-Agasti 2014, Ungqongqoshe weZindaba zeZemvelo washicilela 'Imithetho yokuSabalala kweziNhlobo zezitshalo zaSemazweni' ukunciphisa imithelela emibi yama-IAP. Isimemezelo semithetho kubanikazi bemihlaba nabadayisi bomhlaba ukuba basize uMnyango weZindaba zeZemvelo ukulondoloza i-fauna yemvelo kanye nokuqikelela ukusebenzisa umhlaba wethu isikhathi eside.

Ayiko imiphumela yokulalela ongabekwa ngayo icala lobugebengu ngenhlawulo engafinyelela kuzigidi ezi-5 zamarandi (izigidi eziyishumi ngokwenza icala lesibili) kanye noma ukubhadla ejele isikhathi esiyiminyaka eyishumi.

## Ithophu 5 yama- IAP isifundazwe ngasiny

- **EGauteng:** I-Balloon vine, i-Black wattle, i-Bloodberry, i-Bugweed, isitshalo se-Castor oil.
- **KwaZulu-Natal:** I-African tulip tree, i-Ash leafed maple, i-Baloon vine, i-Bloodberry, i-Bugweed.
- **ELimpopo:** I-Black locust, i-Bugweed, i-Butterfly orchid tree, i-Castor oil plant, i-Kudzu vine.
- **EMpumalanga:** I-Coral creeper, i-Moth catcher, i-Yellow flowered Mexican poppy, i-Butterfly orchid tree, i-Camphor tree.
- **INyakatho neKapa:** I-Blue leaf cactus, i-Castor oil plant, i-Chinese tamarisk, i-Common thorn apple, i-Giant reed.
- **INyakatho neNTshonalanga:** I-Bird of paradise flower, i-Boxing glove cactus, i-Canary bird bush, i-Common dodder, i-Four o'clock.
- **Intshonalanga neKapa:** I-Rooikrans, i-Black wattle, i-Port Jackson, i-Silky hakea, i-Long leafed wattle.

## Ama-websites ahlobene nalokhu

- I-Working for Water [www.wfw.org.za](http://www.wfw.org.za).
- I-Environment [www.environment.co.za](http://www.environment.co.za).
- I-Invasive species South Africa [www.invasives.org.za](http://www.invasives.org.za).

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IsiBhunu, isiNgisi, IsiTswana, IsiSuthu,  
IsiSuthu saseNyakatho, nesiXhosa.

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# I-Grain SA i-inthavywe... uSimo Themba Zwane

**U** Simo Zwane uylungu elikhuthele le-Group Louwsburg Study KwaZulu-Natal. Uneminyaka engama-35 ubudala futhi usebenzisa lokho angakusebenzisa ngama-ndla akhe onke.

**Ulima kuphi futhi ulima amahektha  
amangakhi? Ulima ini na?**

Ngilima eLouwsburg eMzamo Location (Abaqulusi Municipality, esifundazweni sakwaKwaZulu-Natal). Ngaqala ukulima ummbila ku-0,2 wamahektha futhi okwamanje ngilima emhlabathini olinya ngokuhlanganyela kutshalwa ummbila nobhontshisi owomile ku-1,5 wamahektha enhlabathini eyomile. Njengoba ngingenayo impahla yokusebenza ngisebenzisa izandla zami.

**Ngabe yini ekugqugquzelayo  
nekufakela ugqozi?**

Ukuthi awekho amathuba omsebenzi yikho okungigqugquzelayo ukuze ngibe ngumlimi ophumelelayo. Ngibona ukulima njengendlela eyodwa engizophila ngayo nendlela yokuxosha ikati eziko nokubeka ukudla etafuleni. Ngifuna ukuqhubeleka phambili nempilo futhi ngizenzela mina izinto ngoba akekho ozongenzela. Ngifundile ukuthi ukulima yimpilo yami, ukunikeza umndeni wami ukudla nemali.

**Chaza amandla kanye  
nobuthakathaka bakho**

**Amandla:** Ngisemncane, nginamandla futhi ngyakhola ukuthi ngingakwenza konke okudingekayo ensimini ngezandla zami. Ngilwela ukwenza ngcono futhi ngibe namandla lokho engifundiswe khona nengikufundile.

**Ubuthakathaka:** Ngasezimalini angimile kahle futhi anginawo ama-implement, yonke into ngyenza ngezandla zami.

**Sasingakanani isivuno sakho  
ngenkathi uqala ukulima?  
Singakanani isivuno sakho manje?**

Ngesikhathi nqiqala, ngangeneliseka kakhulu uma nikwazile ukuvuna u-1 t/ha kuya ku-2 t/ha ngokwe-avareji ngesizini enhle. Kwabe sekufika i-Grain SA netekhnolijii entsha nezindlela ezingcono zokukhiquiza ummbila. Manje sengiku-3,5 t/ha kuya ku-4 t/ha esifundeni esingaphansi kwenhlabathi eyomile futhi lokhu kwenzeka ngaphandle kwesomiso esinzima esasihlasela ngesizini edlule.

**Ucabanga ukuthi yini eyaba nomthelela  
omkhulu kunqubekela phambili  
nampumelelo yakho?**

Ukujoyina i-Grain SA study group, nokwethamela imihlangano ye-study group, ukuhambela izinsuku zabalimi phecelezi i-farmer's days, ukwenza izifundo zokueqeshwa – yilokho okudlala indima



ebalulekile kunqubekela phambili yami. Futhi ngingothando lokulima nesifiso sokuhubeka nokufunda izinto ezintsha.

**Ngabe iyiphi ingqequesha oyitholie  
kuze kuge yinamuhla? Ungathanda  
ukuqhubeleka uthole yiphi ingqequesho?**

Ngenze izifundo ze-Introduction to Maize Production and Basic Engine Repair. Ngingathanda ukuqhubeleka ngifunde kabanzi nge-Dry Bean Production, i-Tractor Maintenance neWorkshop Skills kanye nanoma yiziphi ezinye zifundo zokueqesha ezizongihlomisa ngamakhono ezokulima. Ngiyafisa ukufunda kabanzi njengoba kuzongihlomisa ukwenza kangcono ekulimeni.

**Uzibona ukuphi eminyakeni emihlanu  
ezayo? Ngabe yini osafisa ukuyithola?**

Esikhathini esiyiminyaka emihlanu ngingathanda ukukhulisa ngyiye kwayi-10 ha kuya ku-20 ha emhlabeni olinya ngokuhlanganyela. Ngingathanda ukuba ngumlimi ophumelelayo nakwezinye izilimo hhayi ummbila kuphela, ukuba yidayisele izimakethi zendawo futhi ngingathanda ukukhula ngidlondlobale kakhulu kwezolimo. Ngingathanda ukukhiquiza ummbila omningi ihektha ngalinye kodwa ngidinda ukuqequesha nolwazi olubanzi.

**Yisiphi iseluleko ongasinika abalimi  
abasebancane nabasafufusa?**

Kufanele babheke ukulima njengebhizinisi futhi bangakubalekeli ukulima ngoba kulezi zinsuku awasekho amathuba omsebenzi futhi kufanele basebenzise umhlaba abanawo, akukhathalekile ukuthi mncane kangakanani. Umuntu kufanele abe nongqozi lokulima nokuzethemba futhi aqhubeke nokusebenza kanzima.

**I-athikhili ibhalwe ngu-Jurie Mentz,  
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