SOUTH AFRICAN SUGARCANE RESEARCH INSTITUTE

UMHLAHLANDLELA WEZIFO NEZINAMBUZANE

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Umbasha

Uhlobo

- Igciwane: *Leifsonia xyli subsp xyli*

Izimpawu

- Azikho izimpawu ezibonakalayo
- Izingoqo ezibhashile, insimu ibukeka ingalingani
- Olunye uhlobo lomoba luba namachashaza abomvu sakubansundu nemisinga eba lapho kuhlukana khona amalunga, ebonakala uma umoba usikiwe

Okunye ngalesi sifo

- Amasampula asemasimini asolakala ukuthi ahlaselwe ilesi sifo kumele ayiswe kwa-SASRI

Isiwumba

Uhlobo

- Isikhutha: *Sporisorium scitamineum*

Izimpawu

- Isiqu sikhula sibe side ngaphambi kokuba kwakheke okusasinswebhu
- Umoba ohlaselekile uba nesiqu esinesinswebhu esimnyama esiqhuma emaceleni
- Kwizixhanti ezihlaseleke kakhulu umoba ubukeka satshani

Okunye ngalesi sifo

- Sitholakala kuyo yonke iMboni kaShukela kodwa sijwayeleke kakhulu futhi sinzima eNyakatho nesifundazwe.
- Ubusika obufudumele nobomile benza sibheduke kakhulu entwasahlobo

Umabalabala

Uhlobo

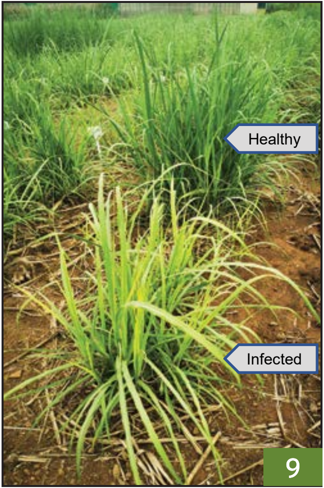
- Igciwane: *Sugarcane mosaic virus*

Izimpawu

- Amaqabunga aluhwaqa ngokuluhlaza maphakathi
- Izixhanti ezihlaselekile zibukeka ziphuzi saluhlaza

Okunye ngalesi sifo

- Izimpawu zibonakala kahle esinqeni samaqabunga asemasha


Healthy
Infected

Amaqabunga aphuzi

Uhlobo

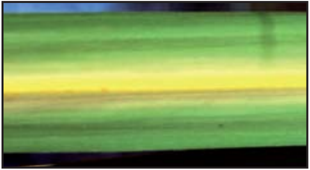
- Igciwane: *Sugarcane yellow leaf virus*
- Phytoplasma: *Sugarcane leaf yellows phytoplasma*

Izimpawu

- Umqolo weqabunga ushintsha ube phuzi sakuba bomvu, lobu buphuzi busabalalela emaqabungeni
- Lobu buphuzi bugqame kakhulu kwiqabunga lesithathu kuye kwelesithupha

Okunye ngalesi sifo

- Izimpawu zibonakala kakhulu kumoba osuvuthwa, okhahlamezekile
- Izimpawu azibonakali kalula kumoba okhula ezimeni ezinhle



Idube (Maize streak virus)

Uhlobo

- Igciwane: *Maize streak virus*

Izimpawu

- Amashashaza amhloshana angaba u 1 - 20 mm ubude 1-2mm ubukhulu kodwa kungenzeka ahlangane, abemade aphinde abemakhulu samidwamidwa emaqabungeni
- Amashashaza abonakala ngaphezulu nangaphansi kwamaqabunga

Okunye ngalesi sifo

- Xhumana neThimba Lezifo Nezinambuzane uma sitholakala lesi sifo

Amaqhubu amaqabunga

Uhlobo

- Igciwane *Fiji disease virus*

Izimpawu

- Amaqhubu amhloshana asesinqeni samaqabunga amade ngo 2 – 50 mm
- Amathophisi ayinhlakanhlaka
- Amaqabunga amasha abamafishane aqonde
- Umoba uyabhasha

Okunye ngalesi sifo

- Ngaphandle kwamaqhubu emaqabungeni izimpawu ziyaye zifane nezesifo sokuvandlazela kwamaqabunga (pokkah boeng)
- Xhumana neThimba Lezifo Nezinambuzane uma sitholakala lesi sifo

Asikatholakali eNingizimu Afrika

Photo: Dr R Magarey (SRA, Australia)

Photo: Dr R Magarey (SRA, Australia)

Ukuvandlazela kwamaqabunga (Pokkah boeng)

Uhlobo

- Isikhutha: Various *Fusarium* sp.

Izimpawu

- Kubasaphuzi ezinqeni zamaqabunga asemancane
- Amaqabunga amancane ayashwabana aphinde agoqane
- Iqabunga lokugcina libamnyama lihlakazeke
- Ukufa kwekhanda lomoba kudala ukufa kwesiqu somoba uqhume emaceleni
- Kuba namashashazi asalata emaqabungeni
- Ukusikeka kwisiqu kungaholela ekulimaleni kwesiqu

Okunye ngalesi sifo

- Simandla kakhulu ezindaweni ezishisayo futhi ezimanzi lapho umoba ungakhula khona ngamandla
- Singaphanjaniswa nomonakalo wezibulala-khula

Ukuvuthwa kwamaqabunga (Leaf Scald)

Uhlobo

- Igciwane: *Xanthomonas albilineans*

Izimpawu

- Kuba nemidwebo emincane kuhle kweyepensela kumaqabunga amancane
- Amaqabunga aba mhloshana
- Amaqabunga ayabuna bese egoqana ngaphakathi
- Amehlo ogoqo lomoba okhulayo ayahluma
- Ukufa kwesinde lomoba ngokushesha kungenzeka

Okunye ngalesi sifo

- Sitholakala kakhulu ezindaweni eziseNyakatho eziniselayo
- Xhumana neThimba Lezifo Nezinambuzane uma sitholakala lesi sifo

Ukulimala kwemithambo yamaqabunga

Uhlobo

- Igciwane: *Xanthomonas axonopodis* pv *vasculorum*

Izimpawu

- Ukusha kweqabunga emaceleni
- Amaqabunga aba mhloshana

Okunye ngalesi sifo

- Sitholakala ezindaweni ezinomswakamo omningi

Imidwa ebomvu

Uhlobo

- Igciwane: *Acidovorax avenae* subsp *avenae, Xanthomonas* sp

Izimpawu

- Imidwamidwa ebomvu eqabungeni
- Leligciwane i-Acidovorax lingabanga ukubola eqabungeni lokugcina ogoqweni

Okunye ngalesi sifo

- Ukubola kungabanga iphunga elingabekezeleleki
- Sivunywa isimo sezulu esifudumele esimanzi

Ukubola komoba ubhicike (Sour rot)

Uhlobo

- Isikhutha: *Phaeocytostroma sacchari*

Izimpawu

- Ukubola okuphuzi sabomvu okumaphakathi ogoqweni
- Ingaphandle logoqo libaphuzi noma libe mnyama
- Ingaphandle logoqo lingaqina ngenxa yokubola okungaphakathi
- Kuba nephunga elimuncu

Okunye ngalesi sifo

- Sitholakala maphakathi nesifundazwe kumoba okhahlamezekile
- Siholela ekulahlekelweni koshukela ogoqweni

Ukubola okubomvu

Uhlobo

- Isikhutha: *Glomerella tucumanensis*

Izimpawu

- Amashashaza abomvana kumqolo weqabunga
- Ukuba bomvu kwengaphakathi lomoba
- Lezi zindawo ezibomvu kungenzeka zibe namachashaza amhlophe

Okunye ngalesi sifo

- Kuhlobene nomonakalo odalwa isihlava kanye nokukayeka komoba
- Sitholakala kakhulu maphakathi nesifundazwe

Isifo sikaphayinaphu sokubola (Pineapple sett rot)

Uhlobo

- Isikhutha: *Ceratocystis paradoxa*

Izimpawu

- Umoba awuhlumi kahle
- Amalunga aba bomvana uma usikwa phakathi umoba bese eba mnyama phakathi nendawo
- Iphunga elisa phunga lezithelo

Okunye ngalesi sifo

- Sitholakala kakhulu uma izimo zokukhula komoba zingezinhle futhi uma umoba ungahlumi kahle
- Imbewu ephekiwe ingatheleleka uma ukuhluma komoba kuthathe isikhathi
- Zikhona izibulala-kukhutha ezibhalisiwe

Ukubola maphansi kwesiqu

Uhlobo

- Isikhutha: Basidiomycete

Izimpawu

- Uyabhasha ungabi namahlumela kahle
- Ukubola okubomvu sansundu eziqwini zamahlumela
- Isikhutha esimhloshana phakathi kogoqo neqabunga

Okunye ngalesi sifo

- Sijwayelekile kumoba osamncane entwasahlobo nasehlobo

Ukuthomba okunsundu

Uhlobo

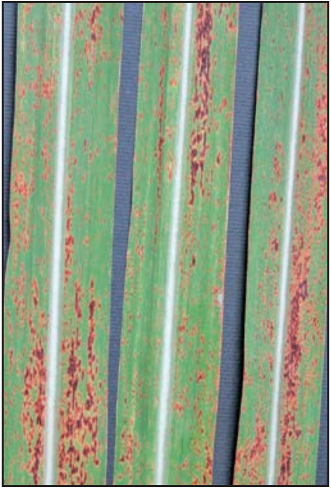
- Isikhutha: *Puccinia melanocephala*

Izimpawu

- Amashashaza ansundu angaba u 2 - 20 mm ubude x 1-3 mm ubukhulu
- Impova ensundu kumaqabunga amasenzansi
- Amasimu ahlaselekile aba phuzi okusansundu
- Amashashaza ayaqoqelana kwimaphezulu leqabunga

Okunye ngalesi sifo

- Sijwayelekile kumoba osemncane onezinyanga ezinthathu kuya kweziyisithupha
- Lesi sifo sithanda indawo epholile futhi emanzi
- Singaholela ekulahlekelweni isivuno okukhulu
- Zikhona izibulala-kukhutha ezibhalisiwe



Ukuthomba okunsundu nokuphuzi

Uhlobo

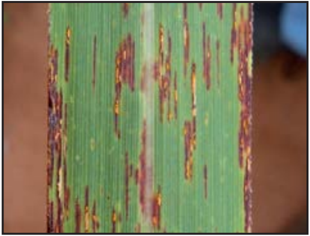
- Isikhutha: *Macruropyxis fulva*

Izimpawu

- Amashashaza ansundu angaba u 2 - 20 mm ubude x 1-3 mm ubukhulu
- Impova ephuzi kwingaphansi nengaphezulu lamaqabunga
- Amasimu ahlaselekile aba phuzi okusansundu
- Amashashaza ayaqoqelana kwimaphezulu leqabunga

Okunye ngalesi sifo

- Sitholakala kuwo wonke umoba
- Lesi sifo sithanda indawo epholile futhi emanzi
- Singaholela ekulahlekelweni isivuno okukhulu
- Impova ephuzi ingabambelela ezimpahleni
- Isibulala-sikhutha esibhalisiwe siyatholakala



Ukuthomba okuphuzi

Uhlobo

- Isikhutha: *Puccinia kuehnii*

Izimpawu

- Amashashaza aphuzi sansundu angaba u 3- 8mm ubude x1-2mm ubukhulu
- Impova ephuzi kumaqabunga amasenzansi
- Amasimu ahlaselekile aba phuzi okusansundu
- Amashashaza ayaqoqelana kwimaphezulu leqabunga

Okunye ngalesi sifo

- Sitholakala kumoba onezinyanga ezingaphezu kwezisithupha
- Lesi sifo sithanda indawo efudumele futhi eswakeme
- Singaholela ekulahlekelweni isivuno okukhulu
- Xhumana neThimba Lezifo Nezinambuzane uma sitholakala lesi sifo
- Isibulala-sikhutha esibhalisiwe siyatholakala

Asikatholakali kumoba eNingizimu Afrika

Photo: Dr R Magarey (SRA, Australia)

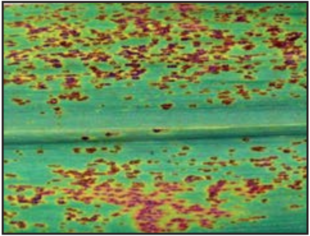


Photo: S Sood, USDA-ARS, Florida

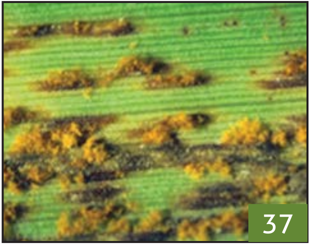


Photo: Dr K Braithwaite (SRA, Australia)

Amachashaza ansudu

Uhlobo

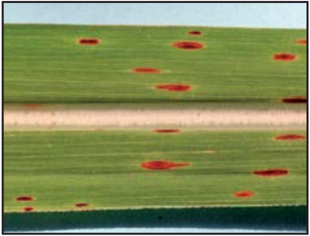
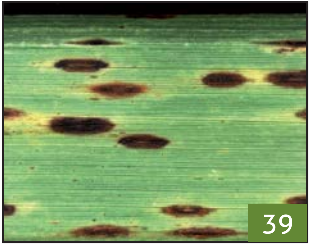
- Isikhutha: *Cercospora longipes*

Izimpawu

- Amashashaza ansundu sakuba mnyama angaba u 15 mm ubude X 3 mm ubukhulu
- Amshashaza amise saqanda anombalana osaphuzi emaqabungeni

Okunye ngalesi sifo

- Sitholakala kakhulu ehlobo

Amachashazi ayizindilinga

Uhlobo

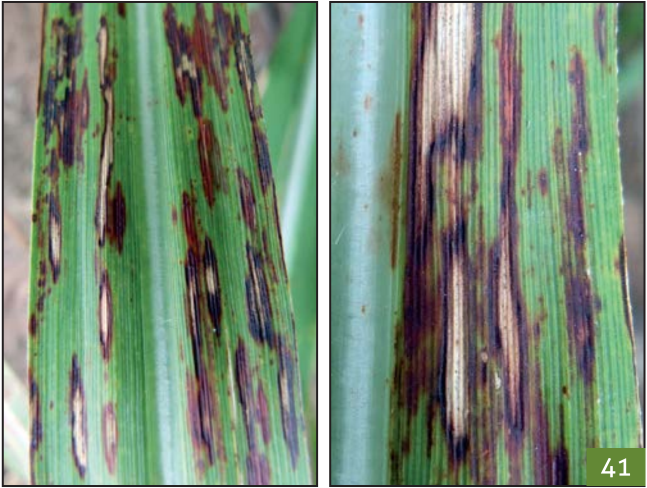
- Isikhutha: *Leptosphaeria sacchari*

Izimpawu

- Amashashaza angaqondakali angaba u 10 mm ubude noma ngaphezulu
- Amashashaza ansundu satshani obomileyo abanemidwebo emnyama
- Lapho kwakheka khona impova kuba mnyama, kugqame kumashashaza asemadala
- Amashashaza akwimaphezulu nengaphansi leqabunga

Okunye ngalesi sifo

- Sitholakala unyaka wonke
- Sibonakala kakhulu kumaqabunga asemadala



Amachashazi aphuzi

Uhlobo

- Isikhutha: *Mycovellosiella koepkei*

Izimpawu

- Amashashaza angaqondakali angaba u 10 mm ukuvuleka
- Amashashaza aphuzi ashintsha abe bomvu satshe ngokuhamba kwesikhathi
- Amashashaza akwimaphezulu nengaphansi leqabunga

Okunye ngalesi sifo

- Sitholakala ezindaweni ezipholile, ezimanzi

Photo: S. Saumtally - MSIRI

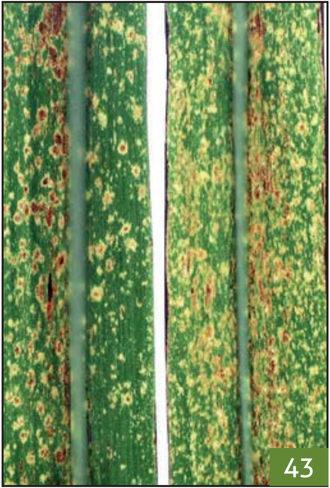


Photo: S. Saumtally - MSIRI

Amachashazi abomvu emaqabungeni

Uhlobo

- Isikhutha: *Dimeriella sacchari*

Izimpawu

- Amashashaza ayindilinga ayi-12 mm ukuvuleka
- Amashashaza aqoqelana ndawonye kwimaphezulu leqabunga
- Amashashaza abonakala kakhulu kumaqabunga asemadala (iqabunga lesihlanu nelesithupha)

Okunye ngalesi sifo

- Sitholakala ezindaweni ezifudumele, eziswakeme

Amachashazi asaliso

Uhlobo

- Isikhutha: *Bipolaris sacchari*

Izimpawu

- Amashashaza asaqanda angaba 1 – 6 mm ubude x1-3mm ubukhulu
- Amashashaza asemadala ababomvu sansundu nemidwebo ephuzi sansundu
- Imidwebo ebomvu sansundu ebakumashashaza ize idlule nakwimaphezulu leqabunga

Okunye ngalesi sifo

- Sitholakala ezindaweni ezipholile, eziswakeme

Isihlava i-Eldana

Eldana saccharina (Lepidoptera: Pyralidae)

Sibonakala kanjani

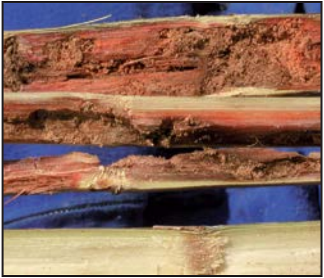
- Iyaphithizela, insundu, inomzimba osaskhumba
- Sihamba siyephambili futhi siyakwazi ukuhamba sihlehle

Izimpawu

- Ukuba khona kwaso kubonakala ngokusandle imvamisa okuba kugoqo lomoba lesithathu uma usuka phansi
- Umonakalo waso ubonakala uma usika ugoqo phakathi nendawo
- Lapho kudaleke khona umonakalo wokubhoboka kuba bomvu

Imibono

- Sidala umonakalo omkhulu oholela ekulahlekelweni isivuno
- Kungenzeka kufuneke uthathe izinyathelo uma sibonakala
- Singena ngeso logoqo



Isihlava i-Sesamia

Sesamia calamistis (Lepidoptera: Noctuidae)

Sibonakala kanjani

- Sibomvu ngokuphaphathekile futhi asinyakazi kakhulu njenge sihlava i-eldana
- Asikwazi ukuhamba sihlehle

Izimpawu

- Sibulala inhliziyo kumoba osemncane
- Iqabunga lokugcina linqamuka kalula futhi lingaba nephunga elibi
- Izimbobo esiphuma kuzo ziba maphezulu nesiqu somoba

Imibono

- Sidala umonakalo omkhulu oholela ekulahlekelweni isivuno
- Siyaphanjaniswa ne-Busseola emhlophe

Isihlava i-Chilo

Chilo sacchariphagus (Lepidoptera: Crambidae)

Sibonakala kanjani

- Isibungu siba nemidwamidwa

Izimpawu

- Izimbobo ezingajulile kumaqabunga
- Umoba uhluma emaceleni
- Izimbobo ezibomvu ziba maphezulu kwisiqu

Imibono

- Sidala umonakalo omkhulu e-Mozambique
- Siwubungozi obuqaphwe kakhulu kwimboni kashukela eNingizimu Afrika
- Siyafana nesihlava sombila (C. partellus) sihlukaniswa elebhu

Asikatholakali kumoba eNingizimu Afrika

Izintwala zomoba

Fulmekiola serrata (Thysanoptera: Thripidae)

Zibonakala kanjani

- Uma sezizindala ziba mnyama noma nsundu, zibe zinde ngemilimitha elilodwa
- Isibungu sibaphuzi sibe namehlo abomvu

Izimpawu

- Amaqabunga ayabophana, ome aphinde agoqane
- Zidala umbala ophuzi sakuba mhlophe emaqabungeni avulekile
- Unqenqema lwamaqabunga lungafa futhi lube nsundu

Imibono

- Zitholakala ngokuvula amaqabunga okugcina

Ithuku

Izinhlobo ezahlukahlukene (Coleoptera: Scarabaeidae)

Libonakala kanjani

- Isibungu esimhloshana noma esimpunga esimise okwesikela
- Amabhungane anegobolondo eliqinile, ababomvana ngokunsundu futhi abemnyama (made ngo 19 – 25 mm)

Izimpawu

- Umoba ubaphuzi, ubhashe, ube namapheshu, futhi ungangakhiqiza kahle isivuno nehlumela lingamili kahle
- Amaqabunga aya ngokuya ephela kanti futhi ithuku lingabulala ingezansi lesiqu lokhu kuholele ekufeni komoba

Imibono

- Litholakala kwizixhathi zomoba uma umba

Izintothoviyane namaqhwagi

Izinhlobo ezahlukahlukene (Orthoptera: Acrididae)

Zibonakala kanjani

- Izinambuzane ezinemiconjwana yemilenze emide

Izimpawu

- Zidla amaqabunga

Imibono

- Zitholakala kakhulu ehlobo
- Ukuqubuka kwazo kudalwa ukuthi izulu lomise kakhulu ngaphambi kokuqala kwezimvula ehlobo.

Izibungu zompayi/zetashi

Izinhlobo ezahlukahlukene (Lepidoptera: Noctuidae)

Zibonakala kanjani

- Izibungu ezimidwamidwa ngokumnyamana nokunsundu

Izimpawu

- Umoba omncane ungaphelelwa amaqabunga wonke
- Indle eyimpuqumpuqu maphansi nesiqu sesitshalo

Imibono

- Zihlasela amaqabunga amahlumela asemancane ngoMbasa kuya kuLwezi
- Izibungu zidla ebusuku bese emini zicasha ngaphansi kopayi/ kwetashi
- Zilawulwa ngezilwane zemvelo

Amaye

Spodoptera exempta (Lepidoptera: Noctuidae)

Abonakala kanjani

- Isibungu esimnyama nokuluhlaza esimidwamidwa emhlophe nokuluhlaza mangenzansi

Izimpawu

- Umoba omncane ungaphelelwa amaqabunga onke

Imibono

- Izibungu zihamba ngamaqoqo
- Izibungu zidla uma sekuzodlula ihlobo, umoba uyakwazi ukululama
- Alawulwa ngezilwane zemvelo

Ibhu eligoqa amaqabunga

Marasmia trapezalis (Lepidoptera: Crambidae)

Libonakala kanjani

- Isibungu esiluhlazana sakubaphuzi esinekhanda elinsundu

Izimpawu

- Amaqabunga ayagoqana
- Isihlava sitholakala eqabungeni eligoqene elinendle esampuqumpuqu kanye nosilika
- Simidwamidwa ekhanyayo engashintsha ibe bomvu

Imibono

- Lilawulwa ngezilwanyana ngokwemvelo

Izimbungulu zomoba/ Isicwebecwebe

Izinhlobo ezahlukahlukene (Hemiptera: Aphididae)

Zibonakala kanjani

- Izinambuzane ezinomzimba othambile
- Zitholakala mangezansi kwiqabunga

Izimpawu

- Zikhanda amachashaza abomvu ahlangene afana nadalwa ubukhuphe
- Ukukhutha okushelelayo okudaleka kumathe alezi zimbungulu.

Imibono

- Zisabalalisa izifo
- Bheka ikhasi 76-77 ngolwazi ngezimbungulu eziphuzi zamaqabunga omoba

Ubukhuphe

Izinhlobo ezahlukahlukene (Acarina)

Bubonakala kanjani

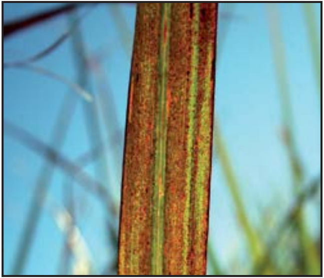
- Abubonakali ngehlo lenyama
- Buba nobulwembu emqabungeni

Izimpawu

- Amachashaza abomvu emaqabungeni
- Amasimu ababomvu noma nsundu kube ngathi umoba uthombile

Imibono

- Buhlasela kakhulu uma lomisile



Umuhlwa

Macrotermes natalensis **(Blottodea)**

Ubonakala kanjani

- Umzimba othambile, onomubala osakhilimu kuba ngathi izintuthwane

Izimpawu

- Ngesikhathi udla, umuhlwa uhlasela umoba phansi emhlabathini
- Ukwakheka kwamagquma maphansi ogoqweni
- Ungaholela ekuweni kogoqo

Imibono

- Uhlala ezidulini
- Umonakalo komoba uhlobene nowesomiso

Imisundu elimaza izimpande zomoba

Meloidogyne, Xiphinema, Pratylenchus, Paratrichodorus

Ibonakala kanjani

- Isibungu esingabonakali ngehlo lenyama. Kudingeka kuthathwe isampula lomhlabathi nelezimpande ukuhlonza
- Ayibonakali ngeso lenyama

Izimpawu

- Umoba uyabhasha, ukhule ngokungalingani amaqabunga acije
- Izimpande zibambalwa zibemfishane zinqundeke

Imibono

- Umonakalo uba mkhulu endaweni eyisihlabathi
- Ukuthathwa kwesampula lomhlabathi nelezimpande kuyisweilebhu ikhona okungaveza ukuthi lemisundu ikhona yini.
- Ilawuleka ngesibulala-misundu kanye nokugcina isitshalo sinempilo

Ibhungezi elisasiginqabulongwe lomoba (i-Longhorn)

Cacosceles newmannii (Coleoptera: Cerambycidae)

Libonakala kanjani

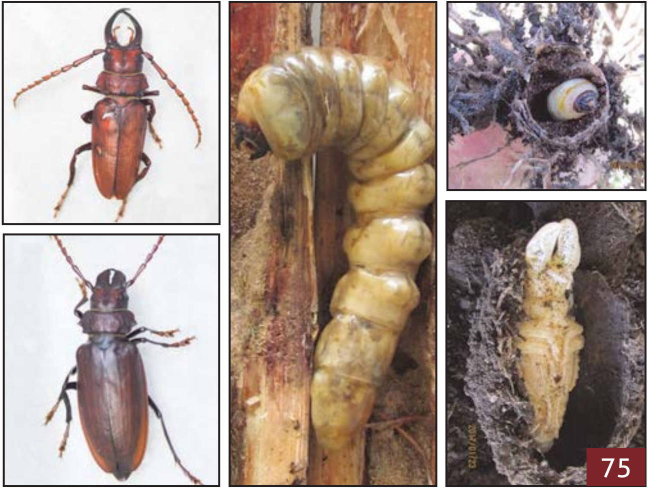
- Isibungu esimhloshana saphuzi esingu-9 cm ubude, esinekhanda elimnyama sansundu elinezimponjwana zokuhogela
- Isiphungumangatha esinomzimba othambile esembethe umhlabathi
- Umaselilidala libamnyama sansundu, awesifazane abamade ngo-35 mm awaselisa abamade ngo- 47 mm abenezimponjwana zokuhogela

Izimpawu

- Kuba neziduli ezinezimbobo kwizixhanti zomoba ngaphansi komhlabathi, izimpande zibonakale kwisiqu somoba ngaphezu komhlabathi
- Iziqu ezibhashile, ezigobile ezingasiphuleka kalula phansi futhi inhliziyo yomoba iyafa

Ukusilawula

- Khipha/ bulala umoba ohlaselekile, uphumuze insimu okungenani unyaka owodwa.



Izimbungulu eziphuzi zamaqabunga omoba

Sipha flava (Hemiptera: Aphididae)

Zibonakala kanjani

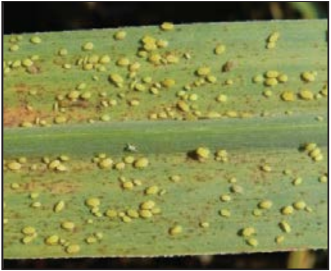
- Iziphungumangatha nezimbungulu ezindala zibaphuzi satshani
- Izimbungulu ezindala: 1-2 mm ubude, azibinazo izimpiko isikhathi esiningi kodwa ezesifazane ezinezimpiko kuyenzeka zibe khona
- Iziphungumangatha: azibi nazo izimpiko futhi zincane kunezimbungulu ezindala

Izimpawu

- Zidla kwingaphansi leqabunga, okuholela ekubeni phuzi/bomvu nokusamachashaza ansundu kwiqabunga
- Uma zizodla isikhathi eside lokhu kudala ukufa kwamaqabunga lesithathu kuya kwelesihlanu – ungalahlekelwa esivuno esingu- 20%
- Umoba ungaphansi kwemitha elilodwa ubude uhlaseleka kalula omdala awuhlaseleki kalula.

Imibono

- Hlola amasimu ngaphambi kokuba ufuthe isibulala-sinambuzane esibhalisiwe
- Zikhona izibulala-zinambuzane ezibhaliselwe ukubulala lezimbungulu, kodwa umlimi kumele ahlole amasimu abonisane nomeluleki ngezinyathelo ezisebenzayo ezingathathwa zokuvimbela
- Umoba ozoya esigayweni uyahluka ekumelaneni nalezi zimbungulu



Amaye i-Fall Army worm

Spodoptera frugiperda (Lepidoptera: Noctuidae)

Abonakala kanjani

- Isibungu esimnyama nokuluhlaza esinemidwamidwa emnyama. Ekhanda sino-Y obheke phansi

Izimpawu

- Isibungu sidla amaqabunga okugcina asamencane, siholele ekubhobokeni kwamaqabunga
- Asibhobozi lapho kukhula khona umoba

Imibono

- Sitholakala kumoba eNingizimu Afrika kodwa bomonakalo eziwenzayo awukaziwa
- Zikhona izibulala-zinambuzane ezibhalisiwe ukuvimbela ukuqubuka kwalesisibungu kumoba eNingizimu Afrika

Ishicilelwa ngu:

South African Sugarcane Research Institute
170 Flanders Drive, Mount Edgecombe, 4300
Tel: (031) 508 7400 Fax (031) 508 7597
SASRI biosecurity hotline : 083 561 2781
Website: www.sasri.org.za

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Amalungelo okuqopha aqukethwe kulo mbhalo. Ayikho ingxenye yalo msebenzi engaphinda yenziwe nanganoma iyiphi indlela ngaphandle kwemvume ebhaliwe yomshicileli. Yize yenziwe yonke imizamo yokuqinisekisa ubuqotho bolwazi olushicilelwe kulo msebenzi, isiKhungo sezoCwaningo ngoMoba saseNingizimu Afrika (SASRI) asizukuthathelwa zinyathelo ngokulahleka noma ukulimala okungehlakalela umuntu ngenxa yokulandela ulwazi oluqukethwe lapha. Ukusetshenziswa kwamagama nezikhangisi ezinobunikazi kulomshicilelo akungathathwa njengokuqinisekisa/gqugquzela ukuthi zisetshenziswe.