

Isifundiso

Ukuninisa kweNkomo ngabalimi abancane eZimbabwe



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UGWALO LWESIBILI

*Izifundiso ezikulolu gwalo zithuthukisa ulwazi
lokufuywa kwenkomo zenyama*

@WE EFFECT, 2015

I-WE EFFECT ikhuthaza ukusetshenziswa, ukwandiswa lokuhanjisa kolwazi olukulolugwalo. Ngaphandle kokuthi lapho kutshengisiwe, ulwazi olulapha kuvunyelwe ukuthi lungakopitsisha, luyatholakala ebulenjini, lungasetshenziswa ngotaditshayo, abachwayisisayo labafundisayo kumbe lakwezamabhizimusi kodwa okwenzayo lokhu angalibali ukuphawula ukuthi lolowazi luvele enhlanganisweni ye- WE EFFECT njalo linhlanganiso kayifupqanga imibono, impumela loba imizamo yabazabala lolugwalo.

ISBN No: **978-0-7974-6-6844-3**

Nanzelela : Imibono eyethulwe lapha ngeyabalobi, kayivezi imibono loba izimiso zenhlanganiso ye- UKAid loba eye-WE EFFECT, loba iExtra Consortium.

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Ugwalo lwesibili, Mfumfu2015

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ISIBONGO

Lolugwalo olumayelana lokufuyela kwenkomo zenyama eZimbabwe lwaqoqwa ngabe We Effect njengohlelo lokuthuthukisa ukulima kanye lokufuya ngaphansi kohlelo olusekelwa ngezimali lugatsha lwe-Livelihoods and Foods Security Program kunhlanganiso ye-UKAID. Lolugwalo lukhangela konke okumayelana lokufuyela ukuzuza kwenkomo zenyama. Lubuya luthinte ngokuthengiswa kwenkomo zenyama leyo. Abalimi bengalusebenzia lolugwalo ikakhulu lapho besebenza bengamaqembu abantu abayisikhombisa kusiya kwabalitshumi lanhlanu. Lungasetshenziswa ngabatsha labadala ngokufanayo lapho behlangana bexoxisana ngokufuya bekhokhelwa ngumthungameli abazikhethelo yena. Abaphatheka kulawomaqembu bakhululekile ukuxoxa besebenzise lolwazi abalalo ngokufuya ukuze bandise ulwazi lwabo kusiya ngokuthi basilela ngaphi.

Ugatsha lwe-Livelihoods Food Security Programme (LFSP) ngolwelizwe le-UK enhlanganisweni ebizwa ngokuthi yi- International Development (DFID) olupha usizo lwemali kweleZimbabwe. Loluhlelo lukhangela luqondiswe yinhlanganiso yezokulima ku-United Nations i-Food Agriculture Organisation (FAO). Injongo yayo ebanzi yikuphungula udubo lokudla kanye lokwehlisa inani lalabo abangelamisebenzi abaswele okokwenza ezigabeni (provinces) ezikhethiweyo zelizwe leZimbabwe ezintathu. Isigaba sinye ngasinye silezigatshana ezimbili loba ezintathu lapho okulabakhokheli abazancedisa ekuqhubeni loluhlelo.

Iqula le-**EXTRA**:

I-Extension Training for Rural Agriculture (**EXTRA**) yethula louhlelo esigabeni se-Midlands ezigatshaneni ezintathu. Ilamaqula amathathu enhlanganiso ezisebenza zizimele zodwa elizweni (NGOs) amahlanu agoqela i-We Effect, Welthungerhilfe, HeiferInternational, ICRISAT, and CTDO). Injongo ye-EXTRA yikuthuthukisa ezokulima lokufuya ukuze ukudla okwakha umzimba kwengezelelwe lokutholisa abantu imisebenzi yezandla ezabalethela inuzo. Lokhu kuzakwenziwa ngokuncedisa abalimi ukuthi bathole ulwazi lobuciko obaneleyo bokufuya. Ugwalo lolu lujonge ukupha abalimi ulwazi lapho bexoxisana ngokulotshiweyo besengeza futhi lapho okudingeka khona ngolwazi lwabo.

Isibongo esikhulu sidluliselwa kunhlanganiso ye-UKAid abancedisa ngemali ukuze kulotshwe kubuye kwethulwe lolugwalo.

UKUSETSHENZISWA KOGWALO LOLU

Lolugwalo lujonge ukusiza abalimi abafisa ukufunda ngamaqembu amancinyane ukuze bandies ulwazi lwabo ngokugcinwa kwenkomo. Lungabalwa njengamaqembu kumbe umuntu munye ngamunye. Kuyakhuthazwa ukuthi abafisa ukwakha amaqembu okuncedisana ngogwalo lolu baqale balubale umuntu munye ngamunye. Amalunga eqembu kudingeka axoxisane kanengi ukuze bancedisane ukuthola ulwazi.

Kuqakathekile njalo ukuthi iqembu libelabantu abayi abahlanu (5) kusiya kutshumi lanhlanu (15). Iqembu ngeqembu kalikhetha umkhokheli walo. Umkhokheli akusuye ofundisayo, kodwa uncedisa nje ukuthi abantu babelane ulwazi lwabo, njalo akudingeki abeyingcitshi ekufuyeni lokhu okufundwayo. Amalunga eqembu kumele avumelane ukuthi bahlangana nini njalo ngaphi. Isiqu sinye ngasinye kumele sifundwe sizwisiswe kungakaqhubelewa phambili kusiqu esilandelayo.

Ugwalo lolu luleziyu ezitshiyeneyo ezimisebenzi thize edinga ukwenziwa ngamalunga eqembu ukuze andise ukuzwisia kwavo. Umuntu munye ngamunye kabelogwalo lokubhalela losiba, kunye lokutshiyeneyo okudingakalayo lapho kufundwa. Kakubhalwe konke okwenzakala lapho kufundwa, kunye lezifundo ezitholakeleyo kumhlangano munye ngamunye.



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Ukuveza ngamafitshane imfundiso yeQembu lokufunda (Study Circle)



Injongo yesifundo.

- Ingabe iyini iStudy Circle?
- Kungani abadala kumele bafunde, njalo bangafuni njani lula?
- Ukusetshenziswa kwendlela yokufunda yeStudy Circle.
- Indingeko lokukhethwa komkhokheli weStudy Circle.
- Umsebenzi owesigombolozi ngomsebenzi sokufunda kanye l lomkokheni waso.



Xoxa ngalokhu:

- Esigabeni sakho, ziyagcinwa na inkomo zenyama, uma kunjalo, ngobani abalimi abakhulu?
- Kusebenzani ukugcinwa kwenkomo zenyama?
- Kunceda ngani ukugcina inkomo zenyama?

1.1 Iyini iStudy Circle?

IStudy Circle liqula labantu elilomgommo wokufunda ndawonye. Bahlangana ukuthi babelane imiqondo engabapha amathuba okufunda okutsha, balolonge ubuciko babonjalo banelise ukuzithuthukisa. Bahlangana okuvamileyo bephatheke emsebenzini okhona njengo kufisa kwabo, kungela kuncindezelwa loba ukuncindezelana. Leliqembu libalemhlangano yokufunda ingwalo abazithakazelelayo. Kumhlangano le, abaphathekayo bahlangana ukuthi bafunde njalo babelane ngenkambo zabo.

Ku*Study Circle*, umsebenzi wakhelwe phezulu kwaleyimqondo:

- Abahlanganeli kumele babelokulangazelela ukufunda ngokujula mayelana lodabathize, olubangaphathisa empilweni zabo.
- Uzibuse lenhloniphо kumqoka egenjini.
- Ukukhulumisana kubalula kalokhu abaphatheki behlala benze isigombolozi bekhangelene.
- Kubalengxoxo zokwabelana lokucubungula inkambo yomuntu munye ngamunye.
- Ingwalo iziolwazi oludephileyo ezifanele abaphatheki.
- Amalunga eqembu kudingeka aphatheke ekuhleleni lekuqhubeni komsebenzi egenjini.

Umsebenzi

- a) Buza ilunga leqembu linye ngalinye izizatho zalo zokubayingxene yenhlanganiso le. Umuntu munye ngamunye kaveze akukhangelele ukufunda egenjini leli.
- b) Xoxani ukuthi lezizifiso zingagcwaliseka njani.



1.2 Bafunda njani abadala?

- Abadala bahlukile ebantwaneni ekutheni bafunda ngoba befisa, njalo belenjongo yokufunda. Balemgomo edinga ukugcwaliswa. Umzekeliso ngowokufisa ukufunda indlela ezintsha zokwandisa isivuno besebezisa ubuciko bokulima obungcono, ukuze imuli zabo zibelokudla okwaneleyo. Bangahlangana nje ukuthi baxoxisane ngohlupho olwehlele isigaba, lendlela zokuqondisa leli phutha.

NANZELELA:- Abadala bafunda ngcono nxa isifundo singesingsbaphathisa empilweni zabo.

Ekufundeni, abadala:

- Bakhangelela ukuhlonitshwa lokwamkeleka kwalokho abakwaziyo.
- Bathanda ukufunda ngesiqubu sabo, ngesikhathi lasendaweni lapho abezwabekhululekile.
- Bafunda kuhle nxo bevunyelwe ukuthi bakhetha abafisa ukukufunda, indawo lesikhathi sokufunda.
- Balobumina thize bakuvikelayo, njalo abathakazeleli ukuthi imiqondo yabo ikhangelelwe phansi.
- Bafunda ngcono lapho kulemisebenzi yezandla, besanelisa ukwenza ngezandla zabolokho abakufundayo.
- Bathakazelela ukuthola ulwazi kwabaye abebanga labo.

Ngakhoke, ukufunda abantu bezinga linye kuqakathekile ekuthuthukiseni izigaba kalokhu befunda besebenzisa indlela yokwabelana inkambo zabo.

Umsebenzi.

- a) Kunyanga eziyisithupha ezedluleyo, ukewacela imiqondo yokuzisiza kumakhelwane, umngane loba isihlobo?
- b) Leyimqondo yaba lusizo na?

1.3 Ukukhetha umkhokheli weqembu

Umkhokheli weqembu ukhethwa ngamalunga eqembu. Umkhokheli weqembu kumele kube ngumuntu othembekileyo njalo elobuciko bokukhokhela. Lowumkhokheli kumele aqegetshiswe elwazini lwengqubo yezifundo zeqembu. Kumqoka ukuthi umkhokheli axhaswe ngamalunga eqembu ukuze umsebenzi uphumelele.

Umkhokheli kumele abelokulandelayo:

- Ulwazi lokubumba imigomo.
- Ulwazi lokukhuthaza abanye ukuthi bafinyelele imigomo yabo.
- Ubuciko bokuhlela abantu ukuze benze umsebenzi thize okhangelelwego.

Umsebenzi.

- a) Njengeqembu, lobanin phansi okukhangelewaeyo emuntwini ozakhokhela iqembu lokufunda.

Nanzi izibonakaliso zomuntu olobuciko bokukhokhela abantu:

- Ukwanelisa ukusebenza kuhle labantu abatshiyeneyo bevela endaweni ezahlukeneyo.
- Ukuthembeka lokukhuluma kuphela iqiniso ekukhokheleni abantu.
- Ukungavezi ukuthi yena mkhokheli nguye ololwazi ukwedlula abanye.
- Ukungaphangi ukuba lolaka.
- Ukugcina ubuso obuthambileyo lanxa sekuvuke ingxabano phakathi kweqembu.
- Ukwanelisa ukukhuthaza amalunga eqembu lokuqalisa ingxoxo phakathi kwamalunga eqembu.
- Ukukhululeka ukwamkela imiqondo yabanye abangamalunga eqembu.
- Ukwanelisa ukulalela lapho abanye bekhuluma.
- Ukubala lokulungiselela izifundo lezozifundo zingakenziwa.
- Ubuciko bokufinqa okumqoka ezifundweni zosuku.
- Uthando lokusebenza labantu, lokuthandwa ngabantu abakhokhelwayo.
- Ukuvumela abantu bakhululeke babe lozibuse eqenjini.

1.4 (Umsebenzi) womkhokheli weqembu

Imisebenzi yomkhokheli weqembu yile elandelayo:

- Ukwakha indlela zokufunda ezikhuthaza abaphatheki ukuthi badinge ulwazi ngalokho okufundwayo.
- Ukuphatheka eqenjini kunye lamalunga eqembu.
- Umkhokheli kudingeka axoxisane lamalunga eqembu ebakhuthaze ukuthi baphume lamacebo okuthuthukisa iqembu.
- Ukuhlanganisa abantu banelise ukusebenza ndawonye, njalo bezizwe bemukelekile.
- Kumele aqinisse amalunga eqembu, angabikho ozikhangelela phansi.
- Ukukhuthaza amalunga ukuthi benze izinqumo mayelana lokufundiweyo, lokusebenzisa empilweni lokho okufundiweyo.
- Ukukhuthaza ukusebenza ndawonye kungela kuphikisana okungatheli izithelo.
- Ukuba lobungcitshi ekudingeni ulwazi oludingakalayo ezifundweni, inqe engaqeqetshanga kuzo.
- Ukukhokhela amalunga ekuxoxeni ngemibuzo ephuthume ezifundweni, eqonqosela ukuthi impendulo zibhalwe phansi.

Umsebenzi

- a) Anduba isimilo lemisebenzi yomkhokheli weqembu isixoxiwe, khethani ke umkhokheli weqembu.

1.5 Umlandu wamalunga eqembu

Umsebenzi.

Mlandu bani elikhangelele ukubalayo njengamalunga eqembu.

Tholani amathuba okwazana njengamalunga eqembu lincedisane ukudinga ulwazi. Ilunga linye ngalinye kumele lizwisise njalo lamukele umthwalo elilawo wokusebenzisa inkambo yalo ukuthuthukisa iqembu. Umqondo welunga kumele wamukelwe ubengoweqembu lonke. Lokhu kunceda ukwandisa ulwazi lweqembu lokukhuthaza amalunga ukuthi apha theke.

Amaqembu wonke okufunda kudingeka akhuthaze ukusebenza ndawonye, asiphune umoya wokuncintisana. Umthwalo wokuphumelela loba ukwehluleka kweqembu kumele ube ngowelunga linye ngalinye.

Umsebenzi egenjini lokufunda ugoqela:

- Ingwalo lokutshiyeneyo okujonge ukuphathisa ekufundeni.
- Ubuciko bomkhokheli weqembu.
- Ulwazi lenkambo yamalunga eqembu.

1.6 Ukulungisela izigaba zezifundo

Izifundo zingakaqalisi, kumele kubelokuvumelana phezulu kwalokhu okulandelayo:

- Indikimba yendaba lokuhlelwa kwezfundo - Lizafunda mayelana lani?
- Indawo yomhlangano - Lizahlangana ngaphi ukuze liqhube izifundo?
- Imithwalo - Umuntu munye ngamunye kumele abehlelelwe umsebenzi thize.
- Ukunxuswa kwabalobungitshi edaben'i olufundwayo - Zingaba nzima izifundo, ngubani ololwazi ozaphathisa?
- Imigomo ebekiweyo iyafinyelelwa na?
- Ingwalo zokufunda - Ulwazi olujulileyo ngodaba olufundwayo lungatholakala ngaphi?

ISIQU 2

Imihlobo yenkomo zenyama ezivamileyo eZimbabwe



Injongo

- Ukuzwisia ukuqakatheka kokugcina inkomo ezifaneleyo.
- Ukuzwisia ukuqakatheka kokugcina inkomo zenyama.
- Ukwazi imihlobo yenkomo zenyama efuywayo eZimbabwe.
- Ukukhetha umhlobo wenkomo oqondileyo wokufuya.



Ingxoxo

- Ukuufuya inkomo zenyama kupathisa njani umdeni wakho?
- Kungani ucabanga ukuthi ukugcina inkomo zenyama kungakulethela imali enhle.
- Menhlobeni yenkomo zakho.
- Abalimi abanengi bagcina inkomo zenyama ukuze bagcine imali yabo, kulokuthi bagcinise leyi mali ebhang. Kwabanye, sekwaba ngumkhuba nje othathwa kubazali lakubokhokho. Kwabanye njalo ukufuya inkomo kubapha isizotha esigaben, babonakale njengabaphumelelayo. Inkomo zenyama ziqaqathekile ekwandiseni inotho yeZimbabwe lasekupheni abaninizo ukudla. Abalimi abafuya ngokwezinga elincinyane yibo abandileyo ebantwini abagcina inkomo, besenza iqula elingange 75-80% labalimi beZimbabwe.

2.1 Zicinelwani inkomo zenyama?

Kulezizatho ezimbalwa zokugcina inkomo. Ezinye yilezi yikuthi inkomo:

- Zinika umninizo isizotha.
- Zingathengiswa umuntu azuze imali, kukanti zingathengwa zigcinwe endaweni yokugcinisa imali ebhang.
- Ziyasiza ekulimeni lasekudonseni izikotshikala.
- Zipha ukudla okugoqela inyama lochago.
- Zililifa ebantwini abagcina inkomo bezigcinela ukuphila.
- Ziyaphathisa ekukhipheni amalobolo.
- Ziyasetshenziswa emadilini atshiyeneyo.

2.2 Imihlolo yenkomono evamileyo eZimbabwe

2.2.1 Imashona



Umfanekiso wenkuzi lenkomo ensikazi yomhlobo weMashona.

Imbalu yomhlobo wenkomono iMashona

Imashona yazakala ngamabizo agoqela la: Makalanga, Kalanga, Makaranga, Ngombenga Vakaranga, Shona Mashuk, le Mashukulumbwe. Inkomo ezazifuywa ngamaShona iMakalanga ihambelana lalezi ezifuywa ngamaTonga kathesi. Ngokuswelakala kwenhlanhla, lezinkomo zaqedwa ngumkhuhlane omkhulu wenkomono ngemnyaka ka 1896-98 langemnyaka ka 1900-06. Ngakhoke inkomo ezazisele (iMakalanga) zahlanganiswa lomhlobo weAngoni. Inkomo ezilesimo esihle yizo ezazivame ukuthengwa, ngakhoke ngemva kwesikhathi, kwanda inkomo ezingumhlobo omuhle oqinileyo. Lowu mhlobo yiwo owabizwa ngokuthi yiMashona. Lowumhlobo wande empumalanga, lasenkabazwe yeZimbabwe kusiya entshonalanga endaweni zeMidlands, Matebeleland North(Lupane leTsholotsho), kusiya kumngcele weMozambique, lase zindaweni zeMatebeleland South, ikakhulu eMatopo Hills.

Umhlobo weMashona ngamafitshane

IMashona ngumhlobo wenkomono olesimo esincinyane, olomzimba obumbeke kahle njalo uqinile, ulesikhumba esixubaniswe umbala omnyama lobomvu. Ezinye inkomo zilombala ongumthubi, olithanga lomhlophe, ezinye ziyimbala le ixubanisiwe. Umbala omnyama uhangene lomthubi yiwo ojayelekileyo. Abafuya iMashona bona bathakazelela ikakhulu imbala ejiyileyo, ikakhulu omnyama. Inkomo zalumhlobo zandise ukuba lesisindo esingange 275-350kg.

Ingxoxo

- Kumhlambi yethu yenkomono silawona lowumhlobo wenkomono na?
- Nxa silawo, lowumhlobo siwufuya kahle endaweni ezilomumo womkhathi onjani?

Okugqamileyo ngomhlobo wenkomo iMashona

- Lezinkomo zikhula kahle lanxa zifuywe endaweni etshisayo, elempukane lemikhaza.
- Ziyanelisa ukuzalana lasendaweni elomkhathi omileyo njenga seAfrica.
- Ezinsikazi zizala okwebanga elide mpela, lamathole azelweyo akhula kahle.
- Akudingakali imali enengi ukugcina lezinkomo njalo ziyanelisa ukuphila kuhle endaweni ezinengi ezilomumo otshiyeneyo.
- Zidla utshani kanye lamahlamvu lapha lalapha.
- Zikhula ngesikhatsana nje, njalozienyama enengi lapho sezihlatshelwe ukudla.
- Ukudla ezikudlayo kulutshwana lapho siqathanisa lenyama etholakala kizo, ngakho ziletha imali enengi ukwedlula imihlobo iTuli, iAfrikaner leBrahman.

2.2.2 Ituli



Umfanekiso otshengisa inkunzi lenkomo ensikazi ezingumhlobo weTuli.

Imbali yeTuli

Umhlobo wenkomo iTuli uphuma kumhlobo iSanga oweza ezansi yeAfrica ngeminyaka ezinkulungwane ezimbili edlulileyo. iTuli iphuma kumihlambi eyanelisa ukwejayela umkhathi omileyo weningizimu Zimbabwe. Lona ibizo elithi Tuli livela kubala elithi “thuli”, liveza umumo womkhathi omileyo olothuli olunengi lapho lezinkomo ezivame khona. iTuli itholakala emazweni amanengi aweAfrica, ikakhulu iBotswana leSouth Africa.

Ukuchaza ngamafitshane iTuli

Ituli zinkomo ezilomzimba ophakathi nje ezitholakala eAfrica. Zilethambo elilesindo mpela, impondo ezinde ezichayayo lenyawo ezinde eziqinileyo. Zizalana lula, zanelise njalo ukujayela lula imumo etshiyatshiyeneyo, kukanti zipha inyama enhle kakhulu. Izikhumba zazo zivame ukuba ngezombala obomvu, oluthuli lomhlophe. Inkunzi ziba lesisindo esingange 750-1000kg, ezinsikazi zona ziyi 450-550kg.

Ingxoxo njengeqembu

- Emhlambini yethu ukhona lumhlobo wenkomo na?
- Nxa ukhona, ufuywa kuhle endaweni elomumo womkhathi onjani?

Impawu zomhlobo wenkomo iTuli

- Zizalana ngobunengi ziphinde zikhule kahle, lanxa zingekho emadlelweni amahle okuyangaphi.
- Amathole kandisanga ukuba lohlupho lokufa lula, kukanti zona ezinsikazi zikhulisa kahle amathole azo.
- Azibambi lula imikhuhlane yenkomo.
- Ziyanisa ukuzidingela amadlelo, ngakhoke zifuywa lula endaweni ezomileyo.
- Zipha inyama enhle mpela.

2.2.3 Inkone

INkone ngumhlobo wenkomo ongabe waveleta enyakatho Africa iminyaka eyi8000 eyedlulayo. Lezinkomo labaninizo bahamba beqonde ezansi, bachapha umfula uZambezi ngeminyaka 590-700AD. EZimbabwe, iNkone(Manguni) yiwo umhlobo osunanzelwe ungumhlobo owawusazakala ngokuthi "iMatebele". Abalimi abalima ngokwebanga elincinyane, labalimi abakhulu abalimela ukuthengisa bayazifuya lezinkomo ezansi yeZimbabwe.

Ukuchaza ngamafitshane iNkone



INkone ilesimo somzimba ophakathi lembala eyahlukeneyo. Loba imbala etshiyeneyo ivamile, ejayelekileyo ngemnyama, emhlophe, eluthuli, ebomvu, lehlanganisa imbala le etshiyeneyo. Amakhala, amehlo lendlebe yikho okwande ukuba lembala egqamileyo, umsila ubusiba lamatshathatshatha. Ikhanda libanzi phezulu kwamehlo, isiphaqa sibengani lugebhezi oluolangana lapho okuqala impondo. Impondo zichayile, ezenkuzi ziphinde ziphothane, indlebe zincinyane. Inkunzi zilesisindo se 600-800kg, ezinsikazi zibe yi 350-500kg.

Impawu zeNkone

- Zizalana lula emumeni womkhathi ohlukuluzayo.
- Zikhula masinyane ziphange lokulungela ukuzalana.
- Zidinga ukudla lula, zisidla utshani lamahlamvu ezihlahla lapho zihambahamba.
- Azihlukuluzwa yimkhaza lemikhuhlane ebangelwa yimkhaza.

- Azihlukuluzwa ngumumo womkhathi otshisayo.
- Ziba lamathole lula, agcinwe kahle lawomathole; ngakho zihlanganiseka lula lenkuzi zemihlobo emikhulu epha inyama.
- Zithambile nje, azila laka.
- Inyama eziyiphayo inhle, njalo zilochago olunengi.
- Zilesikhumba esihle esisebenziseka lula ukwenza impahla zesikhumba.

Ingxoxo yeqembu

- Silawo na lowumhlobo wenkomu emihlambini yethu?
- Nxa silawo, ufuywa lula endaweni ezinjani?

2.2.4 Iafricander

Imbali yomhlobo weAfricander

IAfricander ivelela eSouth Africa. Lowu mhlobo wavezwa eZimbabwe ngesikhathi sombangazwe ngabalimi belungu ababehamba hamba eAfrica. Kucatshangwa ukuthi lowumhlobo waqalwa yikuxubanisa amaHottentots leAlentejana yesiPhuthukesi.



UKuchaza iAfricander ngamafitshane

Lowumhlobo uphawulwa yingemuva ethambemeyo. Ipha inyama enhle ekhangelekayo. Inkomo ensikazi ilesisindo se 630kg, inkunzi zona ziyi 900kg. Umbala ovamileyo ngobomvu. Elithanga lengumthubi ikhona njalo. Impondo zichaya zisiya emaceleni, ziqala ziqondile, ziphethe seziphothene. Inkunzi zona zilamalunda agqamileyo.

Impawu zeAfricander

- Zilochago olunganeli ukuthengisa, lwanela kuphela amathole.
- Ezinsikazi azizali okuyangaphi.
- Zipha inyama enengi.

Umumo olungele iAfricander

IAfricander yejayele umumo womkhathi wezansi Africa. Lumhlobo uvamile eZimbabwe kubalimi abafuyela ukuthengisa.

Inkunzi ilesisindo esingange 745kg

ensikazi yona iyi 525kg

Amathole ande ukuzalwa eyi 33 kusiya ku 35kg

Amathole alumulwa eyi 270kg anduna, kuthi ansikazi eyi 255kg.

Ingxoxo yeqembu

- Mingaki imihlobo oyaziyo kuleyi exoxiweyo.
- Yiyiphi ejayelekileyo esigabeni sakho?
- Qamba imihlobo oyigcinayo.
- Leyimhlobo iyahambelana na loyaziyo?



Ubuciko bokugcina lokukhulisa izifuyo



Injongo yemfundo.

- Ukuzwisia ukuqakatheka kogcina kahle izifuyo, lokwenza umhlobo wenkomo ube lempawu ezinhle.
- Ukuzwisa okumqoka lapho kukhethwa inkunzi lenkomo ezinsikazi.
- Ukuzwisia okumqoka lapho kuqunywa impondo zenkomo.
- Umfundu kumele athole ulwazi lokufuywa kahle inkomo, lesikhathi somnyaka esilungele ukufuya.



Ingxoxo

- Xoxani ngamafitshane indlela zokwenza umhlobo wenkomo ubelesimo esihle.
- Bhalani indlela ezisetshenziswa ngabalimi ukuhloza inkomo ukuze benze imihlobo yenkomo engcono.
- Inkunzi zikhethwa njani?
- Ezinsikazi zona zikhethwa njani?
- Kukhanelwani nxa kukhethwa inkomo zokubulala ukuze umhlambi uphunguke?
- Qathanisani impendulo zenu njengamalunga eqembu.
- Xoxani ngendalela ezipajekileyo, liqathanisa lalezi elizibhalileyo.

3.1 Indlela zokwenza imihlobo egcono eZimbabwe

Abalimi bathanda ukugcina inkomo ezinhle ukuze bazihloze bathole umhlobo omuhle wenkomo zenyama. Lokhu kutsho ukuthi ikhona indlela abayisebenzisayo ukukhetha zona kanye inkomo ezinhle. Kuqakathekile njalo ukuthi abalimi babelendlela yokuphungula inkomo ezingakhuli kuhle.

Ukukhethwa kwenkunzi lenkomo ensikazi

Ukukhethwa kwenkuzi lenkomo ezinsikazi kwenzelwa ukuthi umlimi asale lenkomo ezinhle esibayeni. Nxa kukhethwa inkomo, yilokhu okukhanelwayo:

- Inkomo ezikhathwayo kumele zibeempawu ezinhle ukwedlula amaphutha azo, njalo zibe lenyama elungele imakethe.
- Ukuthi amathole azelweyo akhula kanjani, ukuthi ayafika isisindo esikhangelelweyo lapho ekhitshwa embeleni.
- Amathole kumele agcine umbala womhlambi ukuze kungabi lembala etshiyatshiyeneyo emhlambini.
- Impawu zomhlambi ezikhangelelwe ngabathenga lezinkomo kumele zihlale zikhona.
- Inkunzi akumelanga kube ngezibalamathole amakhulu kakhulu enza ukuzala kwezinsikazi kubenzima.

- Isimo kumele sibe ngesihle esibukekayo, inkomo ibe lenyama nje enengi, ibengenelisa ukuzala lula njalo ibelempondo nxa kukhngelwelwe ukuthi umhlambi owenzwayo ubelempondo.

Nxa kukhethwa inkomo, imiqondo yonke le exoxiweyo kumele ikhangelwe.

Ukukhetha inkomo zokubulala ukuze umhlambi uphunguke

Ukukhetha kwande ukubanzima kubalimi abalima ngebang elincinyane kalokhu besibalohlupho lwenkomo ezingazaliyo. Banengi abalimi abagcina inkomo ezala ngemva kweminyaka efika emine, le nkunzi ezingazakaliyo lokuthi ziyamithisa na ngoba sezilesikhathi zingela nzalo. Inkomo zenyama zandise ukubulawa nxa amadlelo engasaneli, nxa kulamadili thize loba izimfa, kumbe umdeni usudinga imali yezinto thize ezinjengo kubhadalela abantwana imali yesikolo.

Kungakhathalekile izizatho zokuphungula inkomo, bulala zonke inkomo:

- Ezandise ukuswela.
- Inkunzi zonke ezingamithisiyo. Inkunzi ezinje zidla imali enengi kalokhu zigciniwe kodwa zingakhulisi isibaya.
- Amathokazi azalo angamaphahla ngesikati.
- Ezinsikazi esezigugile lanxa zizala ithole umnyaka ngomnyaka. Lokhu kungenxa yokuthi lamathole avame ukuzalwa elesisindo esincinyane, aphinde ehluleke ukukhula okuyangaphi.
- Inkomo ezibonakala zilolaka kalokhu zandise ukwehluleka ukukhulisa kuhle amathola njalo zisiba ludubo kubelusi.
- Inkomo ezileTB leminye imikhuhlane engathelelwa ezinye inkomo emhlambini.

3.2 Indlela lezikhathi zokuhloza inkomo ukuze zibe ngumhlobo omuhle

Ingxoxo njengeqembu

- Ndlela bani eziisetshenziswa esigaben sakho zokuhloza inkomo, zisiba lempumela yiphi imihle lemibi?

Isiqalo / Isingeniso

Abalimi abanengi babalohlupho lokukhetha indlela lesikhathi sokuhloza inkomo kalokhu inkunzi lezinsikazi zisidla emadlelwani manye ngesikhathi sinye umnyaka wonke.

Lanxa kunjalo, umlimi kumele akhethe indlela yokuhloza inkomo zakhe ukuze athole umhlobo omuhle ozamlethela imali enengi. Injongo enkulu kaloba yiwuphi umlimi yikufuya inkomo ezilempawu ezibukekayo, ezipha inyama esuthisa lowo ozayithenga. Njengabalimi bebanga elincinyane, injongo yenu enkulu yikugcina inkomo ezikhula okumangalisayo, ezikhula lula kumumo lapho ezifuyelwa khona. Nanzi indlela ezijayelekileyo zokuhloza inkomo eZimbabwe.

Ukuzalisana imihlobo ehlukeneyo (Cross breeding)

Lokhu yikuuhlanganisa inkomo zemihlobo etshiyeneyo, njengo kuhlanganisa inkunzi yeBrahman lensikazi eyiNkone. Injongo yalokhu yokuthi amathole abeempawu ezinhle ezivela kubazali bobabili.

Ukuzalisana inkomo zomhlobo munye (Inbreeding)

Lokhu yikuuhlanganisa inkomo ezilobuhlobo obukhulu, kungabe kungubaba lomntwana, umama lomntwana, loba inkomo ezivela kubazali banye. Kuleyindlela akudingakali inkunzi kalokhu yonale ekhona ingasetshenziswa ukumithisa inzalo yayo ensikazi. Lokhu kusiza ukugcina impawu ezinhle eziphakathi komhlambi. Leyindlela ayikhuthazwa kubalimi abalima ngebunga elincinyane kalokhu ibangela ukuvama kwenkomo ezincinyane ezipha inyama enlutshwana, njalo kusandisa ukumemetheka kwemikhuhlante ephakathi komhlambi egacina ingaselapheki.

Ukuzalisana komhlobo otshiyeneyo emhlambini munye

Kuhlanganiswa inkomo ezingela buhlobo ngitsho kodwa zingezomhlambi munye. Lokhu kuqakatheke ekutheni kugcina impawu ezinhle lombala ofanayo kulowomhlobo wenkomo.

Indlela zokumithisa inkomo

Ukuhlangana kwenkunzi lenkomo ensikazi (Natural Breeding)

Lokhu yikuuhlanganisa inkomo ensikazi esilungele ukumitha, eyanelisa ukuba lenzalo lenkunzi ukuze kuzalwe amathole. Leyi yiyo indlela yakade yokuzalwa kwamathole njalo yiyo evame ukusetshenziswa ngabalimi bebanga elincinyane eZimbabwe. Leyindlela idinga ukuthi konke inkunzi lensikazi kubesesigaben Sokwanelisa ukuba lenzalo. Lokhu kwaneliseka kuperhela nxa inkomo zisidla kahle njalo zikhethwe kahle lezinkomo ezihlanganiswayo. Kudingeka njalo ukuthi inkunzi ifinylele iloba yiphi inkomokazi elungele ukuzala.

Ukusetshenziswa kwenhlanyelo yenkenzi (Artificial insemination)

Inhlanyelo yenkenzi iyathathwa ilungiswe igcinwe phakathi kwemihlanga ehlonywa kusibeletho senkomokazi nxa isilungele, ithelwe inhlanyelwe ukuze imithe inkomokazi. Leyindlela idinga umuntu olobuciko bokubutha inhlanyelo lokuyibeka kwensikazi ngezikathi eziqondileyo ukuze imithe inkomokazi. Lanxa ilempumela emihle, ibanzima ukusebenzisa leyindlela kubalimi bebanga elincinyane.

Kuyakhuthazwa kodwa ke ukuthi lapho uguqukela ekubeni ngumlimi webanga elikhulu usebenzise leyindlela kalokhu iletha amathole ngokuphangisa. Ukusebenzisa leyindlela kuyadingeka ulwazi lokugcina inhlanyelo endaweni eqanda mo, okungange -196 degrees celcius. Kudingeka njalo imitshina ezasetshenziswa ngulo ozabeka inhlanyelo.

3.3 Izikhathi zokuzalisa

Lesi khathi sikhethwa ngumlimi ukuze inkunzi lenkomokazi kuhlangane ngenjongo yokuthola amathole. Inkomokazi ibasesikhathini kanye emalangeni ayi21, lapho eyamukela lula inkomo enduna. Ngalesosikhathi inkomokazi iyaveza impawu thize, umlimi abesekhetha lapho afisa khona inkomo zakhe zimithe. Kungaba yisikhathi somqando, sokutshisa, iloba yisiphi isikhathi somnyaka.

Ukuzalisa umnyaka wonke

Ingxoxo njengeqembu

- Okubi lokuhle ukuzalisa inkomo umnyakawonke?

Lokhu kuvame kubalimi bebang elincinyane kalokhu kubapha amathuba okwenza eminye imisebenzi lapho inkomo zikhokhelele khathana emadlelweni. Imvama yikutshiya inkunzi lenkomokazi umnyaka wonke. Inkomokazi ezingakaze zizale lazo zihlanganiswa lomhlambi ozalayolapho sezilungele lazo ukuzala. Inkomokazi ezitshiywe lenkunzi zingamitha ngaloba yisiphi isikhathi somnyaka. Leyindlela ilokungathakazelelwayo ukwedlula okuthakazelelwayo kalokhu amathole ezalwa ngaloba yisiphi isigaba somnyaka. Amathole azelwe ngesikhathi esomileyo ayadinga okunye ukudla kalokhu amadlelo ayabe engasela tshani obuya angaphi. Khumbula ukuthi zinkomokazi lamajongosi kuphela ahamba lenkunzi umnyaka wonke, hatshi umhlambi wonke.

Okuhle ngale indlela:

- Umlimi ofisa ukuba lochago umnyaka wonke jikelele uyakwanelisa lokhu nxa ezalisa umnyaka wonke.
- Ukugcina inkunzi emhlambini kuyehlisa izinga lokulwa phakathi kwenkunzi. Lapho kugcinwa inkunzi zodwa ngesikhathi amathole engakafunakali, ziyalwa inkunzi zigcineke nzima, ziqamule intango ziphinde zilimazane.
- Kalokhu inkomokazi zingena esikhathini ngezikkhathi ezitshiyeneyo, zizinlutshwana ngesikhathi sinye ngasinye, akudingeki inkunzi ezinengi.
- Amathokazi ahle amithiswe lapho afika isisindo esiqondileyo.
- Ukuthengiswa kwenkomo kungenziwa umnyaka wonke jikelele.

Okubi ngale indlela:

- Kudingakala ukudla okunengi ikakhulu ngesikhathi somqando ukuze zizale kahle inkomo.
- Imisebenzi enjengokuqunywa kwempondo, ukuthena lokudibha kudingeka kwensiwe umnyaka wonke.

Ukuzalisa ngesikhathi sezulu

Ingoxo yeqembu

- Okubi lokuhle kokuzalisa inkomo ngesikhathi sehlobo / sezulu?
- Okubi ngoluhle ukuzalisa inkomo ngesikhathi?

Leyi yiyo indlela ekhuthazwayo kalokhu kulenyanga ezine kuphela zokuzalisa, kuqala kuLwezi kusiya kuMbimbitho:

- Lesi yiso isikhathi kulotshani obunengi obuluhlaza obungadliwa zinkomo ezifuyelwa inyama. Lokhu kuhle kalokhu lokubili inkunzi lenkomokazi kuyabe kusidla kunona ukuze lapho ezihlangana khona zikhipe amathole aqinileyo.
- Lesi sikhathi sivame ukuba lamathole amanengi.
- Ngenyanga lezi ezine inkomokazi zingena esikhathini kane, ngakhoke ezingamithanga ngethuba lakuqala zisala zilokhu zilamathuba amanye amathathu.
- Inkunzi eyodwa ingamithisa inkomokazi ezifika 25-30 ngalezinyanga ezine.
- Umhlabeni ukhangelwa lula njalo kanengi ukuze inkunzi engasebenziyo ikhitshwe kufakwe eyinye.
- Amathole kazalwa ngesikhathi umkhathi ungamuhle, ngakhoke ukudla kubakhona lula. Kalokhu amathole engazalwa umnyaka wonke jikelele, umlimi ubale thuba lokulungiselela imisebenzi enjengo kuthena, ukudibhisa ukulumula lokuquma impondo.

Inkomo ibamithi okwamalanga ayi286-290. Ngakhoke inkomo ingamitha ngoMpakazi, amathole ayazalwa ngenyanga zabo Mfumfu. Amathole azalwa ngalesisikhathi angcono ngoba:

- Umkhathi uyakhudumala njalo womile. Lamathole katholi mikhuhlane ebangelwa ngumqando.
- Izibungwana ezihlasela inkomo azivamanga ngalesisikhathi kalokhu kungela zulu ngalesisikhathi.
- Amathole ayamunya kubonina okwenyanga ezimbalwa, ezingabantathu, kodwa lapho zikhitshwa embeleni, kulotshani obunengi obuhle bokudla.

Qedani lesisibanga ngokuxoxa ngemibuzo elandelayo.

Ingoxo yeqembu

- Ufundeni kulesisigaba?
- Uzasebenzisa njani izinto owazifundayo epulazini lakho.

Ukugcinwa kwamathole



Injongo yemfundo

- Zwsisa ukuzalwa kwamathole.
- Zwsisa ukuqakatheka kokumunyisa ithole uchago lukanina lokuqala.
- Yazi amanyathelo okugcina amathole kusukela kuzalweni kusiya ekulumulweni.



Ingxoxo

- Yiziphi indlela ozaziyo zokugcinwa kwamathole ozaziyo.
- Bhala pharisi lezindlela ngokuqakatheka kwazo.

4.1 Isiqalo

Ukufa kwamathole kubangela ukulahlekelwa yimali enengi.Ukugcinwa kwamathole kudinga ubuciko obukhulu.Kuqakathekile ukudinga umuntu ololwazi nxa wena njengomlimi usuuhlangane lohlupho onganelisi ukuluqondisa.Singakafiki isikhathi sokuthi inkomokazi zizale, lungiselela indawo yamathole yokuhlala, ukudla lamanzi kubekhona ngobunengi. Lokhu kuyavikela ukufa kwamathole okuyikho okubangela ukulahleka kwemali enengi.

4.2 Ukulungiselela ukuzalwa kwamathole.

Ingxoxo

- Mikhuba bani oyaziyo eyokukhangelwa kwenkomokazi lapho zizala?
- Malungiselelo bani aindingeko?

Ulwazi luyadingeka ukuze wazi nxa inkomokazi izadinga ukuphathiswa lapho izala. Izibonakaliso ezivamileyo lapho inkomokazi isisele lamaviki ayisithupha isizazala yilezi:

- Ingaphansi ibonakala ivuvukile;
- Imbele ibankulu.

Ukuzala kuyinito engalula.Ukuzala okungela hlupho kwenzakala kanye, kodwa kwande ukwehlukaniswa ngezigaba ezintathu lapho sekuchazwa.

- Isigaba sakuqala, inkomo idinga indawo ethuleyo lapho enganelisa ukuba yodwa. Inkomokazi ibonakala isebuhlungwini, kukanti ingaphansi ibonakala ichinca.
- Isigaba sesibili, umkhandlo wokuzala uvuleka ithole liqale ukuphuma, kubangele ukuthi isibeletho sibophane ngamandla ukuze ithole liphume, kuphethe seliselwe ithole.
- Isigaba sesithathu, Obekugoqele othole kuphuma ngemva kwamahola angabayi 8-12.

Nxa inkomokazi ingazali kahle, ungayiphathise, kodwa uqaphele ukuthi ulalokhu okulandelayo:

- Isepa lamaglovisi.
- Intambo zokudonsa ithole.
- Imithi edingakalayo oyiphiwe ndudokotela wezifuyo zakho, kunye lenalithi zokuhlabu inkomo.
- Hlala ulocingo lukadokotela ukuze uphange umdinge ungahlangana lohlupho.

Ungabalobunzima lapho uphathisathisa inkomokazi ukubeletha, phngisa udinge udokotela wezifuyo osesigabeni sakho.

4.3 Ukugcinwa kwamathole kusukela kusikhathi sokuzalwa kusiya kwesokulumulwa

Ingxoxo yeqembu

- Nhlupho bani ohlangana lazo ekugcineni amathole emhlambini wakho?
- Mikhuhlane bani evame ukuhlasela amathole?
- Ngenxa yani amathole efuze emnyiswe esanda ukuzalwa.

Isigaba sakuqala: Isikhathi inkomokazi imithe

Okwenyanga ezimbili ezandulela ukubeletha, inkomokazi iyehlisi, ukuze lungiselele isikhathi sokumunyisa. Kuqakathekile ukuthi inkomokazi igcinwe kahle, iphiwe ukudla okuqondileyo ukuze ithole likhule kahle, uchago lubelunengi lapho isincelisa, lokuzala kube lula kungabi lenhlupho ezinengi.

Inkomokazi nxa sisondele isikhathini sokubeletha, kayigcinwe endaweni ehlanzekileyo, lapho engakhangekhangela khona lula ukuze usizo lutholakale nxa ludingeka, lapho isizala.

Isigaba sesibili: Isikhathi kusukela ithole libeletiwe, kusiya lapho lilumulwa

Ithole liyakhothwa ngunina lapho lisanda kuzalwa. Lokhu kusiza ukuhlamba amakhala alo ukuthi ahlanzeke, ukuze impompi zomoya zivuleke. Inkomo zenyama zandise ukuzalela eguswini, ngakhoke abelusi kumele baqaphele ukuthi inkomokazi ithola ithuba elihle lokwana lonina ngokulekela unina alikhothe.



Ukupha ithole uchago lwakuqala (*colostrum*)

Lapho ithole lizalwa, amasotsha omzimba awakabikhona. Uchago lwakuqala lukanina lulamasotsha angalivikela ithole kuze kufike ithuba lapho selingazenzela awalo. Uchago lolu luljiyile, lulombala olithanga. Isikhathi lapho ithole elithola khona lesisivikelamzimba siqakathekile, kalokhu kuzakhombisa ukuthi lamasotsha azakwamukelwa na ngumzimba. Uchago lolu kalunathwe imzuzu eyi15 ingakadluli. Ngemva kwamahola ayi12, ithole alisanelisi ukusebenzisa lamasotsha.

Ukukhangela impilakahle yethole

Lokhu kuqakathekile ekugcinweni kwethole:

- Hlabisa amathole akho ukuze uwavikele emikhuhlaneni evamileyo esigabenini sakho.
- Lapho ithole selinyaanga ezintathu, lihlabisele *iBrucellosis Blackleg*.

Isihudo

Amathole avame ukuhlaselwa yisihudo. Imbangela ingaba yikupha amathole uchago olunengi kakhulu, loba ukungabikhona kochago lwakuqala olulamasotsha omzimba. Ukwenqabela isihudo, nanzelela okulandelayo:

- Ithole kalimunye uchago lwakuqala.
- Qaphela ukuthi ithole kalihlukuluzeki ngaloba yiphi indlela.
- Xoxisana lodokotela wezifuyo lapho kuluvilibana okudingeka ukwenze ukunakekela amathole.

Okulandelayo kumqoka ukuze amathole akhule kahle:

- Amathole kafakwe impawu lapho ezalwa ukuze nanzeleleke lula.
- Amathole kahle elamanzi ahlanzekileyo.
- Qaphela imikhuhlane engahlasela amathole, uphange uwelaphise.
- Anduna kathenwe engakafiki amalanga ayi30.
- Imondo kaziqunywe inyanga ezimbili zingakapheli.
- Hlabisa inkomo zakho uzivikele emikhuhlaneni evamileyo esigabeni sakho.

Ingxoxo yeqembu

- Kungani kuqakathekile ukupha ithole uchago lwakuqala ihola lingakedluli?
- Isihudo sibangelwa yini ematholeni?
- Ungenzani ukuvikela amathole ezinambuzaneni ezingabangela isihudo?

Ukukhangela kwenkomo mihla ngemihla



Injongo yemfundo

- Ukuzwisia imikhuba yokukhangela inkomo edingeka emihlambini yenkomo zenyama.
- Ukuzwisia ubuhle bokuquma imondo zenkomo.
- Ukuzwisia ukuqakatheka lendlela zokulumula amathole enkomo zenyama.
- Ukuzwisia ukuqakatheka kokudibhisa lemithi esetshenziswa edibheni.
- Ukwazi izibungwana ezihlasela inkomo ngaphakathi lendlela yokuziqeda lezi zibungwana.
- Yabela abanye abamini benkomo olwazi lokukhangela kwenkomo mihla ngemihla.

5.1 Isiqalo

Umsebenzi weqembu

- Xoxani ngendlela ezisetshenziswayo ukunakekela inkomo ezisemhlambini.
- Bhalani ngamafitshane ngale mikhuba, libhale liqale ngeqakatheke kakhulu.

Ukukhangela inkomo mihla ngemihla kujonge ukuthi inkomo zibe ngeziphile kahle.Nxa kunakekelwa inkomo, kukhangela iminyaka yayo, ubukhulu bomzimba lesigaba sokukhula ekiso.Imikhuba ejayelekileyo yikuqunywa kwempondo, ukuthena, ukulumula, ukuhlabisu ukupha izifuyo ukudla lokubulala ezinye ukuze umhlambi uphunguke.

Kulokhu ebelixoce ngakho, qathanisani lalemisebenzi ebhaliweyo:ukuthena, ukuquma imondo, ukulumula, ukuhlabisu, ukupha ukudla lokuphungula umhlambi.

5.2 Ukuthena.

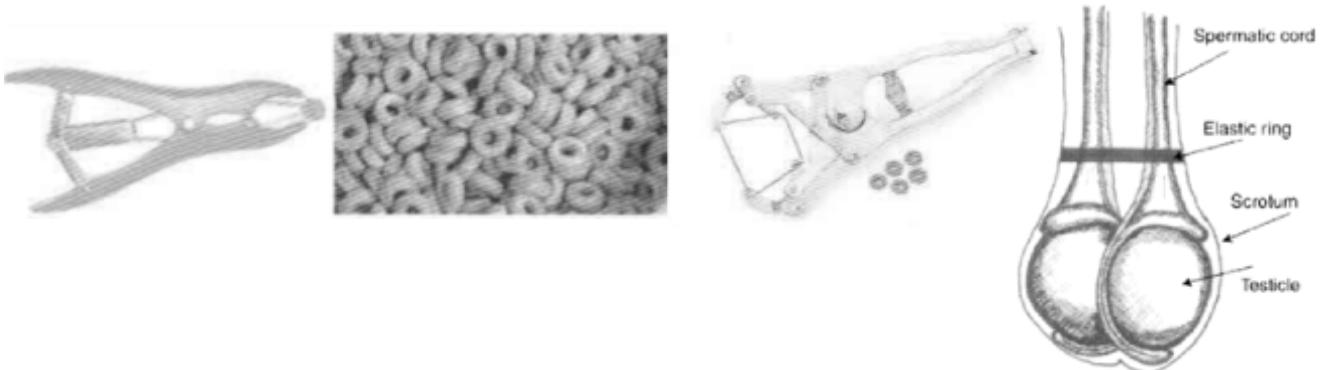
Ingxoxo yeqembu

- Kuyini ukuthena?
- Uwathena kanjani amathole akho?
- Wazi ndlela bani zokuthena, njalo usebenzisa yiphi?
- Kuqakatheke ngani ukuthena amathole anyiduna?

Ukuthena yikukhipha izitho zokwandisa umhlambi enkomeni enduna.Zonke inkomo zenyama ezingasoze zisetshenziswe ukwandisa umhlambi kumele zithenwe. Amathole athenwa ukuze agcineke lula, kungabi lokuhlanga kwawo lezinsikazi lapho kungadingeki. Umsebenzi wokuthena ungenziwa ubelula ngokuthena inkomo zisasencane.

Indlela zokuthena

Zinengi indlela ezingasetshenziswa kumlimi ezokuthena. Lezi yi *Rubber Ring Elastration* le *Buddizzo*.



IRubber Ring Elastration

Kule indlela isaka lesende ligoqelwa ngerekeni entanyeni yalo. Ksetshenziswa into enjengesigelo ukuzeisitho sonke sigoqeleke. Kuqakathekile ukuthi leyi rekeni yakhe umkhandlo phakathi kwamasende lalapho isaka lesende elithinta umzimba. Yekela irekeni izihlalele ngikunjalo. Lokhu kuquma imithambo yegazi eyakulezizitho zomzimba, besezikhithika ngemva kwsikhathi esingangamaviki amathathu. Kuthazwa ukuthi lokhu kwenziwe ematholeni amacane kulenyanga eyodwa.

Ibuddizzo

Kule indlela, ithole lilaliswa phansi umsila ikhwezwe emhlane. Fuqela isende phakathi kwsaka lalo, ubambe intambo ethwala inhlanyelo. IBurdizzo ifakwa incindezele leyintambo okomzuzu owodwa. Lokhu kwenziwa kabili kuntambo yinye ngayinye. Ukuncitshisa kwemithambo yegazi kwanele ukulibulala isende. Nanzelela ukuthi uncinderezela intambo yenhlanyelo yodwa, ungabulali ezinye izitho. Kuqakathekile ukthi lesiskhali esisetshenziswayo, iBurdizzo, sibesesimeni esihle ukuze umsebenzi uphumele.



Buddizzo



5.3 Ukuquma imondo

Imondo kudingeka ziqunywe inkomo ingaka fiki inyanga ezimbili, lapho zingakanamatheli inhloko. Lokhu kumele kwensiwe ngenyanga zabo Nhlangua kuqanda ukuze inkomo ziphange ziphole, njalo zingabambi imikhuhlane etshiyatshiyeneyo.

Ingxoxo

- Kungani inkomo kumele ziunywe imondo?
- Kusetshenziswa ndlela bani?

Izizatho zokuqum a imondo

- Ukwenqabela ukuhlabana lokulimazana kwenkomo.
- Ukwenqabela ukuhleka kwemali lapho inkomo sezihlabene zafa ngesikhathi zihanjiswa lapho ezithengiselwa khona.
- Inkomo ezingela mpondo zidla lula ziznengi njengoba zingadingi indawo enkulu edingekayo lapho zilempondo.
- Abasebenza ukugcina lezinkomo labo bayavikeleka ekuhlatshweni zimpondo.

Izinga lokuquma imondo

Kuyakhuthazwa ukuthi inkomo ziunywe imondo zingakafiki inyanga ezimbili ukuze lumsebenzi ubelula.

Isikhathi sokuquma imondo

Kaziqunywe imondo ngenyanga kuqanqada (Nhlangua) ukuze ubuhlungu bubebulutshwana, lokuphola kwesilonda kuphange.

Indlela zokuquma imondo

- Ukusebenzisa imithi thize.
- Ukusebenzisa insimbi etshisayo.

Ukusebenzisa imithi

Imithi etshisayo ivikela ukukhula kwempondo okwamaviki amabili. Sebenzisa amaglovisi lapho ufaka lomuthi, unanzelele umuthi ungafiki emehlwani enkomo. Imithi le kayingasetshenziswa kusina. Bala iziqondiso ezibhalwe emuthini ngonanzelelo.



Okuhle ngokusebenzisa lindlela

- Akulagazi elichithekayo.
- Kwenziwa inkomo isasencinyane, ngakhoke umsebenzi awubinzima kakhulu. Okubi ngalindlela.
- Imithi ingalimaza abantu abawusebenzisayo.
- Inkomo ingezwa ubuhlu, ngakho kudingeka imithi izenza ingezwa buhlungu.
- Nxa umsebenzi ungaqhutshwanga kahle, inkomo iba lezibavu ezingaphumiyo.

Ukusetshenziswa kwensimbi etshisayo

Lindlela yiyo evamileyo. Insimbi esetshenziswayo iyatshiswa igombolozele impande zempondo, itshise sona kanye isikhumba esenza imondo. Lindlela kudingekaisetshenziswe inkomo ingakedluli amaviki ayi12.



Indlela yokutshisa imondo

- Tshisa insimbi ize ibebomvu.
- Gqoka amaglovisi.
- Beka insimbi phezu kwempondo zenkomodo, uqaphele ungatshisi indlebe zenkomodo
- Yenza lokhu okwemizuzu eyi15.
- Ngemva kwamaviki ayisithupha kumele imondo zikhithike.

Okuhle lokubi ngale indlela

Indlela le ayila kuchitheka kwegazi, njalo ingasetshenziswa iloba yisiphi isikhathi somnyaka. Kodwake kudingeka kube lomuntu olobuciko ekwenzeni lumsebenzi.

Ngemva kokuquma impondo, qaphela mhlawumbe kubelokopha.Nxa kulegazi elichithekayo, limise ngensimbi etshisayo. Ngemva kwamalanga ayi10, yelaphisa inkomo nxa kubelemikhuhlane ebanjiweyo ngenxa yalesisilonda.

5.4 Ukulumula

Ingxoxo yenqembu

- Ukhangelani okumqoka lapho ulumula amathole akho, njalo usebenzisa ndlela bani?
- Emhlambini wakho, usebenzisa ndlela bani zokulumula?

Kuqakathekile ukukhetha kahle isikhathi sokulumula amathole, indlela yokwenza lokhu ukuze amathole akhitshwe embeleni elesisindo esiyiso esifunekayo.

Isikhathi sokulumula

Injongo enkulu ekugcineni inkomo zenyama yikuba lamathole amanengi.Injongo ke yokulumula yikuvumela ikomokazi ukuthi imithe mnyaka munye ngamunye.Amathole andise ukulunyulwa nxa elenyanga eziyisithupha kusiyakweziyisitshiyagalo mbili.Hlolisia isimo senkomu ukuze ingehluleki ukuzala ngomnyaka ozayo ngenxa yokuhlukuluzeka. Ngezikathathi zendlala amathole kumele alunyulwe masinyane elenyanga eziyisithupha ukuze unina aphange iqine isigaba somnyaka esomileyo singakafiki. Imbele yenkomokazi kudingeka ikhule kahle njalo ithole elilandelayo lingaka zalwa.Umsebenzi wokulumula ungathatha amalanga ayisikhombisa.

Indlela zokulumula

Nanzi indlela zokulumula:

- Valela amathole wodwa esibayeni sawo, inkomokazi zigcinwe khatshana lamathole azo.
- Amathole angathathwa asiwe endaweni khatshana labonina.
- Thatha amathole omhlambi uwatshintshanise lawomunye umhlambi, kodwa ke amathole angacina esemunya enkomeni ezingasinina.
- Yehlukanisa amathole labonina ngothango oluqinileyo ukuze zingahlukuluzeki kakhulu sezelhukanisiwe.
- Kumele kubelmanzi lomthunzi omnengi lapho okuhlala khona inkomo ezisesigabeni sokulumula lesokulunyulwa.

Ukuhlabiso inkomo

Inkomo zihlatshiswa ukuze zivikeleke emikhuhlaneni thize ethelelwana phakathi komhlambi. Inhlelo zokuhlabo kumele zilungiswe kuncediswana labodokotela benyamazana abakhona esigaben. Imithi esetshenziswayo, isikhathhi esifanele ukuhlaba lendleko ezidingekayo kumele kuhlelwe kahle.

5.5 Ukuhbisa Inkomo

Ukudijisa kwenkomo yinto eqakatheke okumangalisayo, edinga ubuciko thize. Injongo yikuvikela imikhuhlane ethwalwa yimikhaza lezinye izibungwana engamemetheka emhlambini.

Indlela zokudibhisa

Ukufafaza

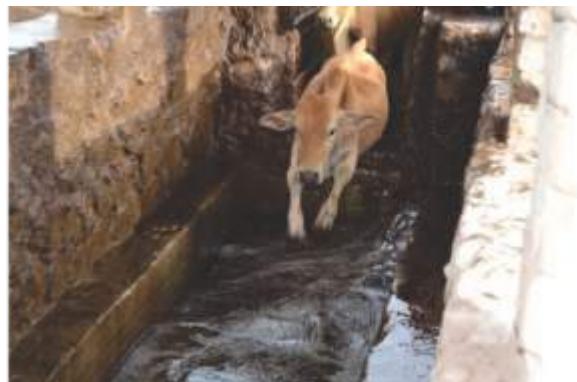
Ukufafaza yindlela esetshenzisa ngabalimi abalenkomo ezinganengi, ezingabe zilitshumi. Umuthi wokudibha uyafafazwa esikhumbeni senkomo. Kodwa ken gale indlela, akusimzimba wonke wenkomo othola umuthi, ngakhoke kumele umuthi ugcotshwe ezithweni ezingafinyelelwanga, ikakhulu ngaphansi komsila.

Ukuthela

Umuthi uyathelwa emhlane wenkomo ubesuchithekela umzimba wonke jikelele. Kumqoka ukuthi umlimi azi umuthi owaneleyo wokusebenzisa ukuze angatheli omlutshwana loba omnengi kakhulu.

5.6 Ukuhambisa inkomo edibha

Leyi yiyo indlela enhle yokusebenzisa nxa umlimi elomhlambi omkhulu, njengoba kuyindlela ephangisayo. Kudingeka abalimi abambalwa bahlangane bakhe idibha. Leyindlela iqeda zonke izibungwana kalokhu kungumzimba wonke otshona emuthini wokudibha. Lapho inkomo ziphuma edibheni zingahlolwa okutshiyatshiyeneyo, zihlatshwe zifikwe lesikalini. Umzimba wonke uyadibha, kusale kuphela ikhanda.



Okunenzelewayo ngesikhathi ndibhisa

Manzelela okulandelayo uma ndibhisa izifuyo zakho.

- Ungadibhisi inyamazana eziucane lezinkulu ngoba ezinkulu zilakho ukunyathela ezincane zigalule.
- Bana akuba nxa kutshisa inyamazana zinatwa amanzi aneluba uzidibhise ngoba zinganatha edibha zife kumbe zigule.
- Ungadibhisi inyamazana kusina kumbe kugodola.
- Bona ukuba inyamazana eseziphumile aziphumi anduba sezigize idibha lonke ngoba zingafaka idibha ekudhleni kwazo.
- Inyamazana kazidibhe zilandelana zisemzileni.
- Ungadibhisi inyamazana ezimithileyo seziseduze lokubeletha, zifafaze.
- Bona ukuba isigodo sokuncedisa inyamazana ezingabe sezigalala siseduze.

Izinto okumele zazakale nxa ufunu ukudibhisa

Kumele ubelonanzelelo dukhulu nxa ndibhisa inkomo. Bala okulandelayo:

- Ungadibhisi inyamazana ezigalayo.
- Ungasebenzisi imithi eminengi ukwedlula evumelekileyo.
- Ugoba eminye imithi enjengomuthi wokubulala izibungu (insecticides) ulukho ukuganeka echagweni kumbe ematatheni, kuqakathekile ukuba unanzelele, ulandele isikhathi esivunyelwa ukuthengisa kumbe ukubulala inkomo onduba idibhisiwe.
- Ungasebenzisi imithi wezibungu (insecticides) ezifuyweni, ulakho ukuwusebenzisa nxa uvumelekile kuphela.
- Ungasebenzisi i insecticides edibha nxa kungavunyelwanga.
- Nxa uthe wasebenzisa i insecticides ezifunyweni zakho zakho ungavumeli lezi ezibalekayo ukuthi ziye ezizibeni kumbe emtuleni.

5.7 Ukubulawa kwezibungwana ezingaphakathi kwenkomo

Lokhu kuyindingeko kalokhu izifuyo zisidla okutshiyatshiyeneyo, lokungabe kulezibungwana. Amadlelo alenkomo eminengi yiwo andise ukuthwala izibungu ezinengi. Inkomo ezihlala endaweni eyomileyo azivamanga ukuhlaselwa yizibungu zamadlelo. Inkomo ezincinyane zandise ukuhlaselwa ukwedlula ezindala. Ngakhoke indlela zokubulala lezizibungu ziya ngomumo wendawo lapho inkomo ezigcinwa khona.

Ukwanda kwezibungwana ngezigaba zomnyaka ezitshiyeneyo

Ukuvama kwezibungu emadlelweni kuyangesigaba somnyaka langokunakekelwa kwawo amadlelo. Izibungu zanda ngesikhathi sezulu, zihle ngezikhathi ezomileyo ezitshisayo. Nxa impilakahle yomhlambi ikhangelwa kahle, zibalutshwana izibungu ezihsela inkomo. Imithi yokubulala lezi zibungu zangaphakathi kumele iphiwe inkomo kathathu ngesikhathi sezulu.

Indlela zokunciphisa izibungwana emadlelweni

Kulendlela ezimbili ezisetshenziswayo ezibizwa ngokuthi pasture management le anthelmintics (de-worming). Ukunanzelela amadlelo kuyanceda ukwehlisa umthwalo ezituyweni. Indlela ezilandelayo ziyanceda uku naphisa ukwanda kwezibungwana.

- Faka inkomo ezincane emadlelweni amahle, angazange adliwe okwenyanga ezilitshumi lambili.
- Bona ukuba inkomo zakho zivikelelale kumawemusi loba zisidla emadlelweni amahle ngoba amadlelo alakho ukuphambaniseka.
- Faka inkomo esezikhulile emadleneweni angavikelekanga. Bona ukuthi amadlelo enkomo kadliwa kakhulu zidla duze lomhlabathi besezidobha okuyizibungwana.
- Uku tshitshanisa amadlelo (Rotational grazing) ayenelisi ukuvikela amadlelo ukuba angaphambaniseki. Kodwa ingahlanganiswa lenhlanganiso nokubulala amawemusi ilakho ukunceda.

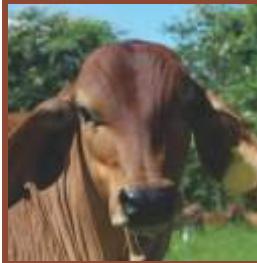
Ukuvikelia izibungwana zangaphakathi

Indlela zokubulala amawemusi ziluncedo olkhulu ekuqedeni izibungwana (parasites). Ama de-wormers akumelanga asetshenziswe ekwelapheni inkomo ezitshengisa ukuba ziyagula kuphela. Kodwa isebezise ezikhathini ezinengi ukuzivikela.

Ingxoxo yeqembu

- Yikuphi okutihlakeleyo ekunciphiseni lokulwisa okuyizibungwana okugulisa inkomo zenyama?
- Yiziphi izibungwana eziqakathekileyo ezitholokala kwelase Zimbabwe?

Ukunakekela inkomokazi ezingakazali



Injongo yemfundo

- Ukuzwisia ukuqakatheka kokugcinwa kamathokazi.
- Ukuzwisia ubuhle bokuba lohlelo lokukhetha inkomozinhle.
- Ukuzwisia ukuqakatheka kokuba lomhlambi omkhulu okwaneleyo.



Ingxoxo yeqembu

- Xoxani ngendlela zokubisela amathokazi emhlambini, litsho ukuthi yiziphi indlela eziqakathekileyo.
- Ngozi bani zokufuya inkomozungela hlelo lokubisela amathokazi.

6.1 Isiqalo

Ukukhulisa inkomokazi ezizazala amathole amahle kuyasiza kakhulu kofuya inkomozu. Nxa kukhethwa lelothokazi, ofuyayo uthemba ukuthi lizabe lingelizalayo, ezazala ithole umnyaka ngomnyaka. Ngesikhathi kukhethwa amathokazi, elingela mpawu zokuzala amathole aqinileyo ziyabulawa.

Imigomo ekhangelelwego emathokazini:

- Kumele abesekhulile ngenyanga eziyi36.
- Kumele zibelezinga eliphezulu lokuzala.
- Kumele libe lomzimba omkhulu, ongasoze ubelobunzima lapho isizala.

Okunye kokukhangela lapho ukhulisa amathokazi azala yilokhu:

- Umumo wokhathi esigabeni sakho.
- Intengo zenkomokazi lezi emakethe.
- Ubukhona bamadlelo amahle.
- Ubukhona bezisebenzi zokukhangela lezinkomo.
- Izinga lempoilakahle emhlambini ovele ukhona.

Okokuqala kokukhangela yibukhulu bomhlambi. Ukuze umhlambi uhlale ulenani lenkomo thize, kudingeka i30% yomhlambi une zinkomokazi. Ukukhulisa inkomokazi zokwandisa umhlambi kuyinto elethela umlimi imali.

Amadlelo.

Ukunakekelwa kwamathokazi kusebangenieliphezulu kulelokunakekela inkomokazi eseziqhulile. Anakekelwa kusukela ekulumuleni kusiya phambili. Kudingeka agcinwe wodwa ukuze angabambi imikhuhlane eminengenengi. Indingeko zokudla zitshiyene njalo, amadlelo

kudingeka abemahle.Qaphela ukuthi kuyadingeka ubelenkomokazi ezilinani elidlula lezo ofisa ukuba lazo, kalokhu ezinye zingabulawa ngenxa yokunga zali lemikhuhlane etshiyeneyo.

Thebuli 1

Ukuchaza (Description)	Unit Cost (K)/Kg	Weight (Kg)	Total Cost (K)
Intengo iyethokazi ekukhutshweni ebele	5,800	227	1 , 3 1 6,000
Isisindo sethokazi ekukhutshwaeni ebele lokungezelela komzimba, ukubeni	2,610	132	344,520
Ithokazi isisiba yinkosikazi	Lump sum/season		290,000
Imali esetshenjiswa ukuthola inkhuzi inzuko	Lump sum		1 74,000
Imali ekhangele ukutshenjiswa lombimi ukubona umhlambi wake	Lump sum		290,000
Imali yamadlelo kusukelwa izalwa kuze ibe ngebele	Lump sum		870,000
Imali ehlosane labe vethinari	Lump sum		1 16,000
Imali ekhangele inkomo ebazingela msebenzi lumbe ezafayo	Lump sum		435,000
Intengo lonke (Total)			3,836,120

Ukwenza isinqumo sokuthenga inkomokazi, kumbe ukukhulisa awakho

Ukwenza lesinqumo kukhangela inzuko ebakhona kundlela zombili. Ukukhulisa inkomokazi kubalendingeko zemali eztshiyeneyo. Kumele kunanzelelwe ubukhulu bomhlambi, ubukhona bamadlelo, lendleko ezidingekayo. Bhala indleko zonke ezidingekayo, uveza lapho ezizasebenza khona.

Ezempilakahle

Abafuyi bagcina ezabo inkomo ezinsika ukuze bavikele imikhuhlane engatholakala enkomeni ezithengiweyo. Ukuvikela imikhuhlane, qaphela lokhu:

- Thenga kuphela inkomo ezingela mbali yokugula.
- Inkomo ezithengiweyo kazihlalezodwa okwamalanga ayi21.
- Hlabisa inkomo.

Cow Genetic Base

Indawo ethengiswa inyama yenkomu kwelase Zimbabwetshintshe ngendlela evusa amehlo emunyake elitshumi lambuli nyelo iziqubeka isenzenyalo ukuze ingwalise izindingelo zabathengi izonyama anihle kakhulu. Endaweni ezithengiswa inyama yenkomu (beef indush) kuqala ngokukhangela umhlabo wenkomu ngoba ulakho ukwehlisa inotho okweminyaka elitshumi lansiya kuminyaka elitshumi lanhlani.

Ukukhulisa inkomo ezinsikazi ezingakazala kuvumela umlimi ukuba akhethe inkomo ngomhlobo wazo ukuze ukutholakala kwenyama enhle kubengcono. Ubuhle kumatokazi azelwe emalangeni okuqala angamatshumi ayisithupha okuzwalwa lalesindo ekulumalweni. Amatholela alakho ukutiloisa isisindo esitanela nxa sekhunhle. Amatude aseklinhle ayande wamela endaweni ezilamadamu amahle.

Ukukhulisa lezinkomokazi ezincane kuvumela umlimisi ukukhetha inkomokazi ezehluleka ukuzala. Lokhu akutsho akuthi ukuthenga inkomokazi ezinge endaweni yalezi umlimi akamelanga akhethe ezinhle ezizala masinga.

6.2 Ukuhlanganisa inkomo ukuze kutholakale umhlobo omhle wenkomokazi.

Ukuhlanganisa inkomo kwenza inkomo ezizalwayo zibengeziqinileyo. Kudingeka luhlanganiswe inkomo ezizabala lenzalo eyanelisa ukuphila emkhathini okhona kuleyo ndawo. Endaweni ezitshisayo njenge Zimbabwe, amaBrahman alungile. Inkomokazi ezizalwayo kudingeka zibe ngeziqinileyo nxa zizasebenza kuhle emhlambini, zizale amathole mnyaka ngomnyaka. Ngakhoke umlimi ukhangela indleko kunye lendlela zokugcina lezinkomo kahle lapho edimga inkomokazi zokukhulisa.

Ingxoxo yeqembu

- Sizatho bani olaso sokugcina inkomokazi zokwandisa umhlambi?
- Miqondo bani edinga ikhangelwe nxa kukhuliswa lezi nkomo? Phana izizatho.
- Yiyiphi indhlela enhle yokuhlanganisa inkomo engasetshenziswa ngumlimi amncane eZimbabwe? Xoxa unika izizatu.

Ukudla kwenkomo



Injongo yemfundo

- Ukuzwisia inkomo zenyama zidla njani/
- Ukuzwisia indingeko zenkomo lapho zisidla.
- Ukuxoxisana ngenkambo ekukhuliseni inkomo.



Umsebenzi.

- Inkomo zenyama zilendingeko bani?
- Kuqakattheke ngani ukuthi inkomo ibe ikhangeleka kahle.

7.1 Isiqalo

Uhlupho abalimi abebanga elincinyane abahlangana lalo ngolokudla okufaneleyo okwenkomo. Ukudla lokhu kuyadula, intengo zenkomo ziphinde zibephansi. Loba kunjalo, kuqakathekile ukuthi abalimi bazi ukuthi kufanele babelenkomo ezikhangeleka zithakazelewa emakethe ukuze bathole imali ethe qaqa. Lokhu kwaneliseka ngokupha inkomo ukudla okufaneleyo.

7.2 Ziphawa kudla bani inkomo?

Ngemvelo, inkomo zidla utshani, zidle kuphela amahlamu nxa utshani bungabuhle njalo bungatholakali. Lobutshani buyaginywa, benthiswe ukwengezelela amathe, buginywe njalo ukuze izinanakazana ezisesiswini zigaye lokhu kudla. Ukuze inkomo ithole amandla ewadingayo, kumqoka ukuthi ziphewe ukudla kokwengezela okunjenge *molasses* nxa zisendaweni ezomileyo ezinjenge Zambia.

7.3 Indingeko ekudleni

Ukudinga ukudla kwenkomo ezinlutshwana kuyadula, nxa uqathanisa lokwenkomo ezinengi. Kubanzima ke kubalimi abancane ukudinga ukudla kwenkomo, zicine zisekelwa inkomo zidle emadlelweni kuphela. Kodwake kudingeka ukuhleleka ukuze ukudla okufaneleyo kutholakale ukuze inkomo zibe ngezesindo esifaneleyo. Ukwengezela ukudla, inkomo zingaphiwa amahlanga omumbu.

Ukuphiwa ukudla kwenkomo zenyama kumele kube ngokunemelekuleyo sikhathi. Kubalimi abancane, ulanike inkom o, umumba, isinkuba lokunge kungatakwu ekudhleni kwazo kodwa ukupha inkomo ukudla okojunyelekileyo kuxwayiselale.

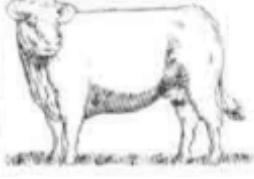
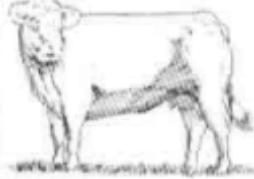
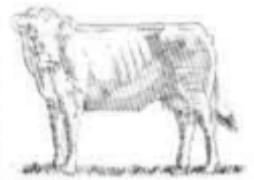
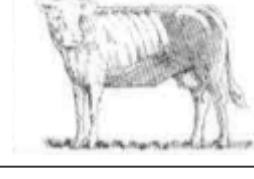
7.4 Ziphawa kanjani ukudla inkomo?

Ukuze inkomo zakho uziphe ukudla okufaneleyo, kudingeka wazi okulandelayo:

- Ibanga inkomo zakho ezikilo.
- Ukukhangeleka kwenkomo zakho.
- Amandla okubalenzalo enkunzi zakho.

Ungazi indingeko zenkomo zakho, kuba lula ukuzipha ukudla okulingeneyo malangs onke. Kuqakathekile ukuzipha lamaminerali amqoka ekukhuleni. Abathengisa ukudla kwenkomo balakho ukudla okulalamanerali angabe engekho emhlabathi.

Thebuli 2 : Imiklomelo yokubonakala komzimba wenkomo

	<p>Imiklomelo eyisithupha (6) yokubonakalakomzimba: Inkomo enone kakhulu Inkomo enonileyo kakhulu, elenhlangothi ezilingeneyo eqolo, ilamahwaha amanengi alengileyo ekhanda lomsila njalo ilenhlangothi ezilingeneyo ekubonakaleni ngenxa yokuthi ilamafutha amanengi. Intamo yenkomo iqatha njalo imfitshane.</p>
	<p>Imiklomelo emihlanu (5) yokubonakala komzimba: Inkomo enonileyo Inkomo ilenyama enhle kakhulu engela mathambo njalo lenyama yebele egeweleyo. Ikhanda lomsila lile zigaqa zamahwaha njalo iqolo libonakala lilenhlangothi ezilingeneyo ngenxa yamahwaha. Imbambo zibonakala zitshelela.</p>
	<p>Imiklomelo emine (4) yokubonakala komzimba: Inkomo ethakazelelwayo Inkomo ibonakala inhle njalo itshelela umzimba wonke. Ilamahwaha njalo esifubeni kumbe ngaphansi kwebele lalapho okuqualisela khona umsila. Imbambo zayo kazibonakali. Ukwenzela isikhathi esihle sokuhula kwamathole lesikhathi sokumitha, inkomo kumele izale ilesimo somzimba esikusibanga lesi njalo singekho ngaphansi mbijana kwalesi sibanga ngesikhathi sokumitha. Kwesinye isikhathi ekuguqukeni kwempilo yayo, inkomo ingaba lesimo somzimba esingaphansi kwaleso esichasisiweyo ngenxa yokungadli okulingeneyo.</p>
	<p>Imiklomelo emithathu (3) yokubonakala komzimba: Inkomo ephakathi laphakathi Inkomo elesimo somzimba ophakathi laphakathi iyabe icakile. Imbambo ezimbili kumbe ezintathu ziyabe zibonakala sobala. Akula sekelo lokubonakala kwamahwaha ebeleni, phezulu kwembambo kumbe ekuqualiseni komsila wayo. Inkomo kodwa iyabe isase lenyama ehломbe lenyaweni zangamuva. Inkomo ezilesimo somzimba esiphakathi laphakathi azikhaphi chago olweneleyo ngokunjalo amathole azo ayabe elezisindo eziphansi lapho esekeliswa ukumunya.</p>
	<p>Imiklomelo emibili (2) yokubonakala komzimba: Inkomo ecakileyo Inkomo elesimo somzimba esikulesi sibanga iyabe icakile kakhulu lembambo zonke zisegcekeni. Umgogodla uyabe usegcekeni. Inyama phezulu kwamahlombe lenyawo zemuva incane kuleyesimo somzimba esilemiklomelo emithathu. Isimo somzimba esile miklomelo emithathu kumbe emibili siphetha ngokukhipha uchago lwethole olulutshwana, amathole amancane ngesikhathi sokutshiya ukumunya, ukuphuza ukumitha lenkomo ezilutshwane ezizakuba lamathole ngomnyaka olandelayo.</p>
	<p>Umuklomelo omunye (1) wokubonakala komzimba: Inkomo ecake kakhulu Inkomo iyabe icakile kakhulu, ingela mahwaha esifubeni kumbe ebeleni. Inkomo ilenyama eyabe isabonakala, njalo umgogodla ubonakala okusegcekeni.</p>

Isibonelo 1: Inkomo ingakazali

Nxa inkomo yakho isisele lamalanga ayi60-90 ukuthi izale njalo ikhangeleka kahle (Imiklome 4, ibanga eliphezulu), kungabe kungadingakali ukwengezela ukudla ngoba:

- Inkomo zidla kanengenengi, ngakhoke zithola ukudla okufaneleyo.
- Ukudla kusebenza kahle emzimbeni ngoba kudliwa ngeziqephu ezincinyane ezinengi.
- Ubukhona botshani obuhle obunengi.

Isibonelo 2: Ngemva kokuzala

Ngemva kokuzala, indingeko zokudla zinganda kancinyane, amaminerali kudingeka andiswe njalo. Ukupha ukudla inkomo ezilingeneyo (3)a nde ukubanzima. Nxa wenkomo ezikala kakhulu umakutengisela kumbe ababona ngezo kiyo balancedise.

Ibanga lokukhula kwenkomo

Inkomokazi ithwala ithole okwamalanga ayi280-290. Sekusele amalanga ayi60-90 ukuthi izale, indingeko zokudla ziyanda ngenxa yethole eselikhula ngesiqubu. Ngemva kokuzala, indingeko ziqhube ka ziphezulu ngoba inkomokazi isimunyisa. Lthole lingaswela uchagoolwaneleyo, alisoze likhule kahle.

Umumo womzimba

Umumo womzimba uzakutsho uchago olungakhitshwa yinkomo. Inkomo ephile kahle ikhipha 1kg yochago ngelanga, ithole layo ngakhoke likhule kahle. Umumo womzimba uzakutsho njalo ukwanelisa kwayo ukumitha okwesibili. Nanzi indlela zokulinganisa umumo womzimba wenkomo:

- Zingaki imbambo ezikhanyayo?
- Umgogodla uyakhanya na?
- Ilamafutha emsileni na inkomo?
- Ingaphansi ikhangeleka njani?

Izigaba zokukhula kotshani, lokudla okutholakala kubo lobutshani

Utshani obuncinyane obukhula masinyane

Lobu buluhlaza, njalo bulamanzi amanengi. Utshani bukhula masinyane ngesibanga sawo sokukhula, lanxa bungaqunywa, lanxa kulamanzi amanengi. Lobutshani bulungele inkomo.

Ibanga lokukhula

Kubalesikhathi lapho utshani bungela mahlamvu amanengi, kodwa intaga zodwa. Lobu abubuhle enkomeni.

Utshani osobukhulile

Utshani nxa sebufike esigabeni esiphezulu sokukhula, abulamahlamvu amanengi. Kwanda intanga, bungasabi buhle enkomeni. Lanxa buluhlaza, abusakhuli kangako.



Umfanekiso wenkomo isidla utshani obukulayo



Umfanekiso wenkomo isidla usthani osobukilile

Ingxoxo

- Uzwisisani ngendingeko zenkomo.?
- Ungasebenzisani ukwengezelela ukudla kwenkomo?
- Nhlupho bani ezivamileyo elihlangana lazo ekudleni kwenkomo esigabeni sakho?

Ukudla kwenkomo okungasetshenziswa ngabalimi bebangal elincinyane



Injongo yemfundo

- Ukuzwisia ubudlelwano phakathi kwezibungwana ezisemathunjini lokugaywa kokudla.
- Xoxo ngokudla okuvamileyo okukhona okwenkomo.
- Chasisa ukuqakatheka kokwengezelala ukudla kwenkomo.
- Ukwazi izibonakaliso kokuswelakala kweziq zokudla thize enkomani.



Ingxoxo yeqembu

- Bhalani imikhuhlane evamileyo enkomani.
- Nhlupho bani ezibonakala ngokugcina inkomo ungela hlelo oluqondileyo lokudla okufaneleyo?
- Xoxani ngempendulo zenu.

8.1 Isiqalo

Inkomo zehlukene lezinye inyamazana ngenxa yezibungwana ezisesiswini ezanelisa ukugaya utshani, ziphe inkomo iziqu zokudla ezinjengama *protein*. Zonz lezi zibungwana zihle zithole ukudla kwazo lapho. Lokhu kutholakala enkomani ezentshisayo. Inkomo ngakhoke zingaophila kahle lanxa ukudla kwazo kungela ma-protein. Ngenxa yalezi zibungwana, inkomo zilakho ukusebenzisa utshani obomileyo, zithole ukudla kibo.

Ukudla kwenkomo busezigabeni ezilandelayo:

Okomileyo: lokhu yikho okupha inkomo amandla amanengi. Kugoqela:

- Amahlanga omumbu.
- Izihlahla zamazambane, indlubu lendumba.
- Umumbu ngokwawo lesiqu.

Ukudla okulungisiwego: lokhu kwandise ukuthengwa ngumlimi. Kugoqela:

- Impuphu yomumbu
- Impuphu yendumba
- Okuphekwe ngentanga zekhothoni.

Inkomo ziyaphiwa njalo okungabekusele kuphekwa utshwala.

8.2 Ukudla kokwengezela

Ukwengezela amaminerali enkomeni ezidla emadlelwini

IPhosphorus iqakathike kakhulu ngakhoke kuyadingeka yengezelwe ekudleni, ikakhulu ngesikhathi inkomo zilochago. Amaminerali aqakathe okufana lotshani, amanzi lomoya. Ayadingeka nxa inkomo izakhula kuhle.

Thebuli 3: Izibonakaliso zokuswelakala kokudya okwakha umzimba

	P	Ca	NaCl	Mg	K	S	Fe	Cu	Co	I	Zn	Mn	Se
Ukungazali	-	-								-	-		
Amathole amalutshwani	-			-	-		-		-				
Uchago olulutshwane	-	-	-		-		-		-	-			
Umkhuhlane wenyawo kumbe ukuoma komzimba		-		-		-		-			-	-	
Ukuphuza ukungezelela umzimbaloba isisindo	-		-			-		-	-	-			
Ukuba lesisingo esingaphansi muva kokukhitshwa ebeleni	-			-	-	-	-	-			-		
Amathole alemzimba emincane njalo engaqinanga	-	-			-	-	-	-			-	-	
Umhlambi wonke awula mpila kahle njekelele	-	-	-		-	-	-	-	-	-			-
Ukuoma komzimba okwesikhathi eside		-		-									
Ukusalela komncwatshi ngemva kokuzala	-												
Umkhuhlane woquqo		-											
Ukuntshintsha kwasikhumba									-				
Inkomothatha amalanga amanengi ukubona ifike esikhathini sokukwelwa yinkuzi	-							-			-		

Key: P=Phosphorus, Ca=Calcium, NaCl=Sodium Chloride, Mg=Magnesium, K=Potassium, S=Sulfur, Fe=Iron, Cu=Copper, Co=Cobalt, I=Iodine, Zn=Zinc, Mn=Manganese, Se=Selenium.

Ukudla okufanele inkomokazi lenkunzi

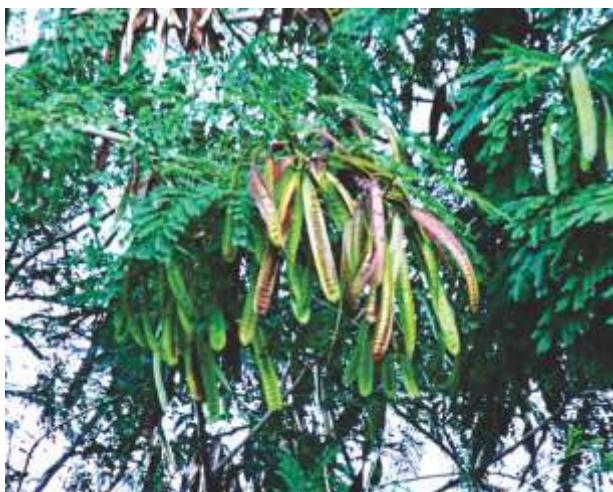
Ukudla kumele kube ngokufanele indingeko zesifuyo. Ukudla okupha Amandla okunjengomumbu kuqakathekile. Kumele zikhangelwe kodwa izifuyo ukuze zidle kuphela okwaneleyo. Ama-protein atholakala endumbeni lasentangeni zekhothoni. Ukudla okuvikela ukuqumba kuqakathekile lakho, kugoqela amahlanga.

Izihlahla ezidhliwa zinkomo

Akula kudla o kukodwa nje okungakhulisa inkomo, kudingakala izinto ezitshinyeneyo. Inkomo zidinga ukudla okwaneleyo, okulama protein, ama vitamins lokwakha umzimba okutshiyeneyo. Sebenza lama livestock extension officer esigabeni sakho, nxa ufunu ukunzwisia ngandaba zama nutrients alungele inkomo kuqakathekile ukuthi ube lohlelo lwamadlelo enkomo.

Kuqakathekeleni ukuhlanyela izihlahla endaweni lapho ogcina khona zifuyo?

Ngesikhathi kungela zulu, utshani bomile njalo abutholakali lula. Utshami luyabe lulama protein, lama vitamins amalutshwane . Akula njalo iziqu ezimqoka ekukhuleni kwenkomo. Okungenziwa yikuhlanyela izihlahla ezizakupha ukudla enkomeni zakho ngesikhathi kungela zulu ngoba izihlahla azilahlekelwa ngama protein okwomunyaka wonke ngasiphi isikhathi.



Trees for fodder

Ngingathola ngaphi ama protein?

Izihlahla ezinengi ezitholakala kuleli ezingavelanga phetsheya, zilokudla okufanele inkomo. Izihlahla ezinjenge Pigeon pea, Mulberry, Sesbania sesban, Acacia angustissima, Calliandra calothrysus, Gliricidia sepium, Albizia lebbeck le Leucaena leucocephala zifa ama-protein amanengi. Njalo izihlahla lezi ziba lamanhlamvu ngesi ichathi kungela zulu.

Indhlela ongahlanyela ngayo izihlahla lezi

Kule ndhlela ezitshiyeneyo ongahlanyela ngazo izihlahla lezi ukuze zakho zingaphelelwa ngamadhlelo.

Ukusebenzisa izihlahla njengokudla

Ingxoxo

- Kuqakatheke ngani ukwengezelu ukudla ngesikhathi kungela zulu?
- Kubangelwa yini ukungazali kwenkomo?
- Inkomo ezimithi zilungiselelwa kanjani ngesikhathi kungela zulu?
- Nanzelelo bani oludingekayo lapho kuphiwa inkomo ukudla okulama - potein?

Ingxoxo

- Izihlahla zesigaba sakho zingaba yikudla kwenkomo na?
- Ungazihlanyela lezizihlahla na?
- Ungazihlanyela ngaphi?
- Kulezihlahla esigabeni sekho ezingadhliwa yenkomona? yiziphi ngesikhathi siph?

a) Ukuhlanyela izihlahla

Nxa izihlahla sezinlutshwana esigabeni sakho, dinga intanga uhlanyele lapho kulezulu. Ungazihlanyela ndawonye lezilimo zakho. Nxa uhlanyele lezilimo, izihlahla zingehlukaniswa nge 25-50cm. Nxa uhlanyele ugombolozela izilimo umkhandlo ophakathi kwezihlahla awuqakathekanga kangako. Ungaba lendawo njalo ekhethelwe ukuhlanyela izihlahla engbe iyi 50cm ubude lobubanzi.

b) Hlanyela izihlahla kanyelamabele

Nxa uhlanyela kunyelamabele faka izihlahla ngamaqembu atshiyene nge 3 to 10m ububanzi. Usungahlanyelo izilimo pakathi kwesikhala esitshiyewe yizihlahla lezi.

c) Ukuhlanyela ekucineni kwengimu

Nxa uhlanyela ekucineni kwengimu akula sidingo so kutshiya isakhala ezingaphezu kwe 3m.

d) Hlanyela ku fodder bank

Ungahlanyela izihlahla zibambene ku fodder bank. Njengemali egcinwa ku fodder bank. Indawo ele 50m by 50 m ilakho ukupha amadhlalelo awenela inkomo ezine. kungcono ukulima izihlahla ezitshiyeneyo kufodder bank yakho. Ungalima imihlobo emine etshinyeneyo.

Zisetshenziswa njani lezizihlahla?

Ungekela inkomo zizidlele. Lokhukuvuma nxa izihlahla zikhathshana lezilimo. Ungaquma ingatsha zezihlahla amaviki ngamaviki uphe inkomo amahlamvu omileyo loba

aluhlaza.Quma izihlahla ezilobude obungange 50-70cm. endaweni enhle, izihlahla zingaqunywa ngemva kwamaviki ayi6-8. Endaweni embi eyomileyo ungama okwamariku angu 12. Ukuhlangamisa izihlahla kelentengo ephansi kulo kutenga ama concentrated livestock feeds. Nangu umzekelisophansi

Imixture ye grain and tree pods for cattle fattening

Ingredients	Isizindo [Weight] (kg)
Maize stover	250
Maize grain	200
Sorghum grain	200
Sunflower seed chaff	100
Pods from Piliostigma thorningii	200
Pods from Acacia erioloba	50
Total	1000

Ingxoxo

- Yizihlahla ziphi ezilokudla okuhle esigabeni sakho?
- Lanxa kulomsebenzi omnengi ukuquma izihlahla kulokwekela inkomo zizidlele, kulemivuzo bani ukuquma izihlahla?
- Kulungeleni ukwenza lokhu?

Ukugcina amadlelo



Injongo yesifundo

- Ukuzwisia ukuqakatheka kokugcina amagusu angaba ngamadlelo.
- Ukuwazi izihlahla ezikhula emadlelweni lasendle.
- Ukuzwisia ubudlelwano phakathi kwezihlahla, inhlabathi lezifuyo.
- Ukuzwisia undlela zokukudla emadlelweni.
- Ukwenza izihlahla ezisemadlelweni zibengcono.



Ingxoxo

- Chaza ukuzisisago ngebala elithu indle.
- Chaza ukuthi amadlelo yini.
- Qamba izihlahla ezitholakala endle endaweni ohlala kiyo.
- Indle lamadlelo kutshiyana njani.
- Bhala phansi uladla aokutholaka le endle.

9.1 Isiqalo

Zikhona indawo ezingasetshenzisa ukulima, ukwemba ngitsho lokwakha. Lezindawo zingabangamagusu amakhulu laba inkangala, loba indawo elamadwala. Amadlelo ayafana lalezindawo, kodwa wona ungaba ngawokulima.

9.2 Ukuqakatheka kwendle kumlimi

Indawo lezi zingasetshenzisa njengamadlelo. Ziqakathekile ngoba yizo indawo ezingela ntengo lapho inkomo ezingadla khona. EZambia ukufuyela endle sokusanda. Ngakhoke kukhona okumbalwa okuyamela luqatshelwe ukuze indle olondolozwe.

Indle ingasetshenziselwa okwehlukeneoyo okugoqela:

- Ukugcinwa kwenyamazana zeganga.
- Amadlelo enkomo.
- Ukuzingela.
- Ukulondolozwa kwezifula ezingabe zikuleyindawo.
- Ukupha kumbe ukunika inyamazana zokuganwa lezegangeni amanzi.

EZimbabwe inkomo zenyama ezinengi zidla endle. Indle ipha indawo yokuhlala enyamazaneni ezigoqela inyon, inhlanzi. Izibungu kunye lenyamazana zeganga.

Ingxoxo

- Amanzi aqakatheke ngani ekugcineni indle?
- Endaweni ohlala kiyo akhona lamagusu na?

9.3 Imihlobo yezihlahla

Endle kutholakala utshani. Kuyatholakala njalo izihlahla ezingamahlamvu wodwa, lalezi ezile ngatsha lamahlamvu amakhulu. Ezinye ngezilentanga ezingadliwa zinkomo.

9.4 Umumo wendle / Kwamadlelo amancane

Ingxoxo

- Yikuphi okungenziwa ukuthuthukisa indle?
- Ndubo bani ezingabakhona ngokugcina inkomo ungaqaphelanga ukulondoloza indle?
- Kunceda ngani ukusebenzisa amadlelo atshiyeneyo ngezikkhathi ezitshiyeneyo?

Ukuqedu ukhula

Ukhula luyehlisa ubunengi botshani emadlelwenu, luhinde lubangele inkomo imikhuhlane. Ukuze ukhula lunga tholi ithuba, amadlelo kudingeka agcinwe kuhle, inkomo zingadli utshani amadlelo aze asale eze. Lapho sekukhule ukhula, imithi yokulubulala kudingeka ithengwe. Kuqakathekile ukuthola ithuba lokuhlola amadlelo ukuze kubonakale ukuthi angabe ehlaselwe lukhula na. lokhu kwenza kubelula ukwenqabela ukumemetheka kwalo emadlelweni.

Iziyu zokudla

Inkomo ibisela ukudla okunengi emhlabathi ngobulongwe; Nitrogen 79%, Phosphorus 66%, Potassium 92%. Lobubulongwe kodwa akuvamanga ukubasemadlelwani. Kuyadingeka ke ukuthi umlimi athele ifethiliza emadlelwani ukuze ahlale elokudla okunengi.

Indingeko zamanzi emadlelwani

Inkomo zinatha amanzi amanengi. Umlimi kumele ananzelele inkomo zingagugudi umhlaba lapho zisiyanatha amanzi. Kuyakhuthazwa ukuthi kwakhwi amadamu amanzi duze lamadlelo ukuze inkomo zingahambi immango emide zisiya emanzini.

9.5 Ukugcinwa kwendle / Kwamadlelo amanza

Lokhu yikulondoloza indle ukuzi abantu behlale besuthisekile. Uhlupho kodwa ke yikuthi ukusuthisa uluntu kunzima, kalokhu izifiso zitshintsha. Inkomo bezivele ziqaqathekile, kodwa kukhanya inkomo zendle seziqakatheka ngamandla.

Izifuyo lenyamazana zeganga kungahlala konke kusuthiseke na?

Lokhu kokubili kuyanelisa ukuhlalisana kuhle ngoba kuyimvama ukuthi indingeko zokudla zitshiyene. Kungabakhona kodwa impikiswano lapho indingeko sezifana. Udubo lubakhona

njalo lapho izifuyo sezithelelwa imikhuhlane enjengo mkhuhlane womlomo lamasondo ngamabhalabhalala.

Indle kazulu wonke kumbe eyomdeni

Indle phose zonke eZimbabwe zivulelwwe uzulu wonke. Lokhu kusitsho ukuthi abakhokheli belizwe yibo abakhangele lezindawo. Indle zikahulumende azithuthukanga kangako. Umuntu lomuntu uyazidingela amanzi enkomo, itswayi lencingo zokuvikela izifuyo. Endaweni ezingasizikahulumende umninindawo nguye odinga lezizinto.

Endaweni zikahulumende abakhokheli yibo abafaka imuthetho ngendlela inkomo ezingadla ngayo. Lokhu kwenzelwa ukuthi wonke umuntu ofisa ukwelusela lapho abeletshuba elihle lokugcina ezakhe.

9.6 Amadlelo

Ukutshintshanisa amadlelo

Lokhu kuchaza indawo ezechlukeneyo zokuthi inkomo zidle. Lokhu kuqakathike ekuthini utshani banelise ukukhula kahle. Utshani bukhula kahle nxo inkomo zitshintshwa kanengi, zigcinwe emadleweni manye okwamalanga amahlanu kuphela, kalokhu utshani buthatha amalanga ayi5-8 ukukhula. Qaphela inani lenkomo olazo ukuze amadlelo engandelwa.

Okumqoka

- Umhlabathi kudingeka ubo muhle emadlelweni.
- Lapho okulamanzi utshani buyakhula kuhle.



Inkomo isidla utshani obonuleyo

Ukusetshenziswa kwamadlelo okwedlula amalawulo

Inkomo zingadla kakhulu endaweni thize kakhulu, utshani baphela. Amadlelo lawo andise ukugcwala ukhula. Kunzima kodwa ukthi indawo thize isiphele utshani, kalokhu indawo ngendawo zikhula izihlahla ngezikhathi ezitshiyeneyo.

9.7 Imikhuba emadlelweni

- Yehlissa inani lenkomo.
- Hlela indlela zokudla zenkomo.
- Yakha amadamu amanzi ukuze inkomo zinathe.
- Hlanyela izihlahla zokudla kwenkomo.
- Qhubeka ngokutungamela okukhova.

Uthango

Intango zinceda ukwenqabela inkomo ukuthi zidle emadlelweni angasiwo. Inani lenkomo lingehliswa loba likhwezwe, kusiya ngamadlelo akhona. Umhlobo ophiwa ukudla kumele unanjelelwe, kalokhu umhlobo ngomhlobo usedla ukudla thize.

Ukutshisa:

Umlilo okhangelweyo ungasetshenziswa endle ukubulala izihlahla ezinjenge *lantana camara*, lokuvumela ukuthi utshani bukhule katsha ngesikhathi sezulu. Indlela lezi njalo zehlisa ukukhula kokhula zivimele imvelo eyiyo ukuba ilande.



Ingxoxo

- Udinga amaphadoki amangaki omhlambi olawo wenkomo zenyama?
- Mqondo bani oyikhangelayo nxa ulungisa amadlelo enkomo okutshintshanisa?
- Ungafisa ukuhlanganisa lawa madlelo lakamakhelwane nxa indawo yamadlelo incane?
- Yikuphi okuyindingeko abantu bengaka hlanganisi inkomo zabo emadlelweni?

ISIQU 10

Ukunakekela impilakahle yenkomu zenyama



Injongo yemfundo

- Ukuzwisia ubuhle boholelo lokunakekela impilakahle yomhlambi.
- Ukuzwisia okumqoka ekubambeni loluhlelo.

10.1 Isiqalo

Umsebenzi

- Bhalani indlela ezipajayelekileyo zokunakakela imihlambi yenkomu.
- Xoxani ngobuhle bokugcina kahle inkomo.

10.2 Okumqoka ekubambeni uhlelo lokugcina kahle inkomo

Okulandelayo kuqakathekile ekugcineni impilakahle yomhlambi:

- Indawo ehlanzekileyo.
- Inkomo ezintsha emhlambini lezigulayo kudingeka zigcinwe zodwa.
- Ukudla okuhle okulungele inkomo.
- Ukuhlabiso ngesikhathi esiqondileyo.
- Ukugcina kuphela inkomo eziqinileyo ezingaguliyo.
- Ukudinga usizo lwamadokotela enyamazana ngesikhathi imikhuhlane ingaka memetheki.
- Ukugcina imibhalo eqondileyo ngokukhula kwenkomu.

Lokhu kuyazwa esigabeni lesi esilandelayo.

a) Indawo ehlanzekileyo

Lapho okuhlala inkomo kumele kuhlanzeke, kuhlale kuthelwe imithi youbulala izibungwana. Izibaya kudingeka zihlale zomile zihlanzekile, zilamanzi ahlanzekileyo okunatha ukuvikela ukumemetheka kwemikhuhlane.

b) Inkomo ezintsha emhlambini lezigulayo kudingeka zigcinwe zodwa

Inkomo ezintsha kazihlale zodwa okwamalanga ayi10-21. Ezigulayo kazihlale zodwa zihlolisiwe ukuze imikhuhlane ingamemetheki. Ezifileyo kaziphange zilahlwe.

c) Ukudla okuhle okulungele inkomo

Ukupha inkomo ukudla okufaneleyo kuzenza zivikeleke emikhuhlaneni, ngakhoke izifuyo kudingeka ziphiwe ukudla okuqondileyo ngesikhathi esifaneleyo.

d) Ukuhlabiso inkomo ngesikhathi esiqondileyo

Hlabisa inyamazana zakho ngendlela ekhuthazwayo esigabeni sakho. Imithi esetshenziswa ukuhlaba inkomo iya ngemikhuhlane evamileyo esigabeni. Kuqakathekile ukuthi abalimi badinage usizo kubodokotela benyamazana esigabeni mayelana lemikhuhlane ehlasela inkomo.

e) Ukugcina kuphela inkomo eziqinileyo ezingaguliyo

Gcina kuphela inyamazana ezingela mikhuhlane. Ukugcina ezigulayo kuyadla imali kalokhu zizadinga ukwelatshiswa.

f) Ukudinga usizo lwamadokotela enyamazana ngesikhathi imikhuhlane ingaka memetheki

Inkomo ingafa loba ingagula, biza udkotela wenyamazana ayihlole. Zonke ezinye inkomo kaziphiwe umuthi ofanele umkhuhlane otholakeleyo ukuze umkhuhlane ungamemetheki. Umuthi ungakaphiwa inyamazana ezigulayo, kazihlosiswe wazakale wona kanye umkhuhlane eziwugulayo. Lokhu kwenqabela uzama imithi ehlukeneyo okungacina kuqedo imali enengi.

g) Ukugcina imibhalo eqondileyo ngokukhula kwenkomo

Ukugcina imibhalo eqondileyo kumqoka ekuvikeleni ukumemetheka kwemikhuhlane. Kunceda njalo ukunakekela indingeko zesifuyo sinye sinye.

10.3 Ukuphawula izifuyo ezigulayo

Ukunakekela impilakahle yomhlambi kudinga ukuthi inkomo yinye ngayinye iphawulwe. Lokhu kuqakatheke ikakhulu ekutheni inkomo ezigulayo zibonakale lula. Umlimi sengathatha amanyathelo aqondileyo okwelaphisa lesi sifuyo lokusipha ukudla okufaneleyo.

10.4 Izibonakaliso zempilakahle

Ingxoxo yeqembu

- Yabela abanye imiqondo yakho ngezibonakaliso zesifuyo esiphile kahle.

Thebuli 4: Izibonakaliso zenkomo eziphile kahle.

Inyamazana eyodwa	Umhlambi
<ul style="list-style-type: none"> ● Isikhumba esibutshelezi sicazimula ● Indlebe zime ziqondile ● Amehlo ayakhanya njalo ayahamba hamba lapho inkomo ikhangela into ezitshiyeneyo. ● Amakhala ahlanzekile njalo amanzana ● Ukwentshisa lapho inkomo iphumula ● Ukuphefumula kulula ● Umsila uphatheka ekuxotsheni impukane ● Ukulangazelela ukudla 	<ul style="list-style-type: none"> ● Zonke inyamazana zimile njalo zikhangeleka ziphapheme ● Lapho izifuyo zingaphazanyiswa zitsheda zonke njengomhlambi ● Isimo sezifuyo simikahle, imizimba mihle ● Amathole ahamaba labonina, njalo ayamunya lapha lapha ● Izifuyo ezindala zincedinedisa lezi ezincinyane ukuze zikhule kahle

Thebuli 5: Izibonakaliso zenkomo ezingaphilanga kahle

Inyamazana eyodwa	Umhlambi
<ul style="list-style-type: none"> ● Isikhumba asicazimulo ● Indlebe zime zigobhe ● Amehlo akakhanyi njalo akahambi hambi lapho inkomo ikhangela into ezitshiyeneyo ● Amakhala agcolile njalo awamule ● Ukungentshisi lapho inkomo iphumula ● Ukuphefumula nzima ● Umsila uwuphathela ekuxotsheni impukane ● Ukulangalangazeli 	<ul style="list-style-type: none"> ● Zonke inyamazana zilele njalo azikhangelela ziphapheme ● Lapho izifuyo zingaphazanyiswa zitsheda zingaso mhlambi ● Isimo sezifuyo simi kabi, imizimba mib ● Amathole akahambi labenuna, njalo akamunyi lapha lapha ● Izifuyo ezindala azincedisa lezi ezincinyane ukuze zikhule kahle

Izibonakaliso zemikhuhlane enkomeni

Umkhuhlane yikuba sesimeni esibi sesitho somzimba loba ukungasebenzi kahle komzimba. Lanxa imikhuhlane ilembangela ehlukenyeyo, njenge zilonda lezibungwana ezitshiyeneyo ezibangela imikhuhlane, yonke ivela ngezibonakaliso thize ezifanayo. Izibonakaliso ezimqoka yikutshisa komzimba, ukuphefumula lokutshaya kwenhliziyo. Abalimi akumelanga banelise ukubona kuphela inguquko ezifuyweni zabo lapho zigula, kodwa basebenzise lezi zibonakaliso ezintathu ukuchaza imikhuhlane. Izibonakaliso zemikhuhlane zakuqala zingakhuthwa ngumlimi ngoba zizncinyane. Ngakhoke, ukuhlolisia izifuyo kusiza ekunanzeleni imikhuhlane masinyane ukuze ukwelatshwa kuqale.

**Injongo yesifundo**

- Ukwazi imikhuhlane ethelwanayo phakathi kwenkomo.
- Ukuzwisa imikhuhlane le.
- Ukwazi indlela zokunanzelela lemikhuhlane.
- Ukwazi umehluko phakathi kwenkomo efe ngenxa yomkhuhlane othelelwanayo lefe ngesizatho esingazakaliyo.

11.1 Isiqalo

Imikhuhlane ememethekayo ibangelwa yizibungwana ezingabonakali ngamehlo ezinjengamaBacteria, amaVirus lamaFungi. Inkomo elomkhuhlane ibonakala:

- Ngokuqansa kokutshisa komzimba.
- Ukungatshayi kahle kwenhliziyo.
- Amakhovula alegazi.
- Ukuphefumula nzima.
- Ukungalangazeleli ukudla.
- Isifuyo siyazikhetha sizihambele sodwa.
- Azihlaliseki izifuyo.

Nansi imikhuhlane ethelwanayo ejayelekileyo:

11.2 Umkhuhlane wamasondo lomlomo

Umkhuhlane wamasondo lomlomo uhlasela izifuyo ezilamasondo, uzibonakalise ngezilonda emlonyeni. Uvame eMatebeleland,eMasvingo laseManicaland. Umkhuhlane lo umememtheka lula ngokuphefumulelana kwezfuyo lokudla. Ubukhona balomkhuhlane benza amadokotela enyamazana enqabele ukuhambahamba kwezfuyo lokuthengiswa kwenyama engahlolwanga.

Izibonakaliso

Ezivamileyongamathumba emlonyeni, avuleka ukutshiya izilonda ezibuhlangu.Ziqala ukuphuma udenda inkomo, zihlafume nzima.Isikhumba esiduze lamasondo siphuma izilonda ezibangela ubunzima lapho inkomo ihamba.Imbele layo iba lezilonda ezingabangela ukoma kochago. Umzimba uyatshisa lokudla kubenzima. Lumkhuhlane ulula ukubona kalokhu uphangalumkhuhlane umemethike uhlasele izifuyo ezinengi ngesikhathi sinye.Amathole yiwo avame uhlaselwa kakulu, afe engatshengisanga ngitsho lesisodwa isibonakaliso sokugula.

Ukwelapha lokwenqabela

Ingxoxo yeqembu

- Ndlela bani oyisebenzisayo ukwelapha lumkhuhlane?

Lumkhuhlane ungabangela ukulahleka kwezfuyo ezinengi ezingalethela ilizwe imali. Phanga wazise odokotela bezifuyo nxa zihlaselwe izifuyo zakho. Kudingakala welatshwe masinyane ungakamemetheki ukuze wena kunye loHulumende lingalahlekelwa yimali enengi sokulezifuyo ezinengi ezigulayo. Ezigulayo kazingekelwa zihambahambe kalokhu zizathelela ezinye umkhuhlane.

11.3 Ianthrax

Umkhuhlane lo wazakala ngokubangela ukufa kwesifuyo kunye labantu abadle inyama elomkhuhlane ngesikhhatshana nje. Uvame lapho kube lotshintshatshintsha okukhulu emkhathini, njenganxa kuphela izulu elinengi, loba kube lendlala. IBacteria ewabangelayo itholakala emhlabathini. IZimbabwe ilomkhathi wona kanye othandwa yizibungwana ezibangela iAnthrax, kalokhu kuvame ukukhudumala. Umkhuhlane lo uvame endaweni ezithize, kukanti ungathwalelwu endaweni ezintsha ngokuthengiswa kwenyama elomkhuhlane.

Izibonakaliso

Ekuqaleni komkhuhlane, izifuyo zitholakala zifile isizatho singaziwa. Ngokuhlolisa umhlambi, ezinengi zitholakala zilomzimba otshisayo, zingahlaliseki njalo ziphefumula nzima. Iyawela phansi inkomo, iqale ukuqhatsha ibisisifa. Lapho isifile, iyopha ezikhaliyi zonke zomzimba. Igazi leli alandanga ukoma, kuthi imbala yayo ingomi njengenjayelo lapho inkomo sifile. Phangisa ubize udokotela wezifuyo akusize ngokuhlola izifuyo zakho. Ngokuqhuba komkhuhlane, inkomo zithatha amalanga angabamabili besezisifa, kunanzeleleka lokhu kizo:

- Ukutshisa komzimba.
- Ubunzima bokuphefumula.
- Ukwehluleka ukudla.
- Ezimithi ziyalahlekelwa.
- Isihudo esilegazi.
- Ukugcwala kwamanzi elimini lakwezinye izitho zomzimba.
- Ukugcwalelana emakhaliyi izibonakaliso lezi enyamazaneni zitshengisa ukaba iyabe sile anthrax.

Inkomo ingafa ngenxa yeAnthrax, umzimba uyaphanga ukhunte.

Ukwenqabelo lokwelapha

Ungakabizi udokotela wezifuyo, sebenzisa iOxytetracycline kumbe iPenicillin. Inyama lochago lwenkomo ezugulayo kakungadliwa, ngitsho layizinja. Isidumbu sonke kasigqitshelwe kumbe sitshiswe, ezsaphila zingahambahambi. Inkomo kazihlatshwe umnyaka ngomnyaka.

Ibrucellosis

Lo ngumkhuhlane ohlasela izitho zokuzala zenkomo. Isibonakaliso esikhulu salomkhuhlane yikuswela, lokungamithi kwezfuyo. Abantu labo bangahlaselwa yilo mkhuhlane ngokunatha

uchago lwalezi nkomo, loba ukubamba izidumbu zenkomo ebezigula. Abalimi balahlekelwa yimali ngenxa yalomkhuhlane ngalezi indlela:

- Uchago olulutshwana enkomeni eziswelayo.
- Ukuswelakala kwamathole.
- Ukulahlekelwa zinkomo ezinengi ngenxa yokuzibulala.

Loba yiphi inkomo ingahlaselwa, kodwa lumkhuhlane uvame kulezi ezisebangeni lokuzala. Unina angathelela ithole. Ungathelelwanan njalo ngokuhlangana kwenkunzi lenkomo ensikazi. Ungamemetheka njalo umkhuhlane uye kweminye imihlambi.

Izibonakaliso

Esijayelekileyo yikuswela ngemva kwenyanga ezinhlanu inkomo imithi. Isibeletho sande ukwehluleka ukuphuma, kubasela ukuhuhlane njalo. Ingaba yinyumba inkomo ingekela ukwelatshwa. Inkunzi ezigulayo ziba lamasende avuvukileyo, njalo zingabi lenzalo. Udokotela wezifuyo angapha isiqiniselo sobukhona balomkhuhlane ngokuhlolisa uchago loba igazi lenkomo.

Ukwelapha lokwenqabela

Akula muthi owazakalayo wekwelapha, kodwa-ke lumkhuhlane uyaphela wodwa. Ukuhlabisa inkomo kuyasiza lakho ukuvikela ubukhona bomkhuhlane. Inkunzi ezilomkhuhlane lo kumele zithengiselwe ukuhlatshwa kalokhu zingaba lohlupho lokumithisa.

11.4 Ubhova

Lumkhuhlane ubangelwa yiVirus. Umemetheka lula lapho inkomo egulayo ingaluma ephilileyo, njalo wandise ukubulala izifuyo. Umkhuhlane wandise ukuvela enyamazaneni zasendle. Isifuyo esigulayo sibonakala sengathi siyahlanya, kuthi umhlobo thize wobhova ubangele ulaka ubangela ukuthi ihlasele ezinye, kumbe iphethe iyisilima.

Izibonakaliso.

Ngemva kokulunywa yinja, ikhanka, umangoye loba yiphi inyamazana elobhova, iyaqala ukugula inkomo ngemva kwamaviki amathathu. Mibili imihlobo yobhova, njalo ibonakala ngalokhu:

Umhlobo obangela ubulima.

- Inyawo zithwala nzima ukuhamba.
- Ukulahla ubulongwe kuba nzima.
- Udenda.
- Ibonakala ibongolela inkomo kodwa izwi lingazwakali.
- Ubulima obenza yehluleke ukuma loba ukuhamba inkomo.

- Ifa ngemva kwamalanga amabili inkomo.

Umhlobo ololaka.

- Ayihlalisekanga inkomo, ifise ukuhlasela iloba yini okuyiphazamisayo.
- Ihamba nzima inkomo.
- Zibongolela okolaka inkomo.
- Inkunzi zibala lomdlozela omkhulu*

Ingxoxo yeqembu

Uvamile na lumkhuhlane esigabeni sakho, njalo ungenqabelwa njani?

Ukwelapha lokwenqabela

Hlabisa zonke izinja lemangoye, ungavumeli ukuhambahamba kwazo njalo.

Isihlabo (Pnemonia)

Lo ngumkhuhlane wamaphaphu. Ungabangelwa yizibungwana ezitshiyatshiyeneyo. Kodwake amaBacteria yiwo avamileyo, ngakhoke iTetracycline yandise ukusetshenziswa ekwelapheni.

Kalokhu lo kungumkhuhlane wamaphaphu, ubonakala ngalokhu:

- Amakhovula ajiyileyo alombala olithanga.
- Ubunzima ekuphefumuleni.
- Ukutshisa komzimba.
- Ibonakala idiniwe nje inkomo.

Inkomo efe ngesihlabo ilamaphaphu omileyo, lamazi amanengi empompini zokuphefumula.

Ukwelapha lokwenqabela

Sebenzisa iTetracycline masinyane, uphe umuthi ofanayo ngelanga elilandelayo.

11.5 Unyawo olumnyama

Longumkhuhlane omemetheka phakathi kwezfuyo obangela ukuvuvuka kwenyawo, ubangelwa yiBacteria iClostridia. Inkomo ibalezilonda. Inkomo ezincinyane yizo ezihsaselwayo, ezincane kuleminyaka emibili. Inyawo lolimi yizo indawo ezandise ukuhlaselwa. Lomkhuhlane wanda ngoZibandlela kusiya kuNhlolanja, lango Mpandula kusiya kuMfumfu.

Izibonakaliso

Ngamahola amabili nje umzimba uyatshisa, inkomo yome ingasafisi kuhamba.Nxa ikhanda lalo lihlaselwe, igazi liphuma ngamakhala.Isifuyo siphetha sifile ngemva kokungadli okwesikhathi eside.

Ukwenqabela lokwelapha

Ingxoxo yeqembu

Ungenqabela kanjani inkomo zakhoekubambeni lomkhuhlane?

Hlabisa inkom zakho, yiyo indlela ekhuthazwayo.Hlabisa inkom ezilenyanga eziyisithupha kusiya kuminyaka emithathu.Sebenzelana lodokotela wezifuyo osesigabeni uthole usizo lapho uhlabiso inkom zakho.

11.6 Umkhuhlane wamehlo

Uhlupho lolu lwandise ukubangelwa yikuhsatshwa butshani lapho inkom isidla.Inkom ibonakala iliziqephu zotshani emehlwani.Ukuvikela lokhu, abalimi bangaquma utshani bubebufitshane ukuze bungafinyeleli amehlo ezifuyo.

Izibonakaliso

Amehlo aphuma inyembezi, ahlale evaliwe ngenxa yokungathakazeleli ukukhanya.Imehlo abomvu gebhu. Amehlo angabalokumhlotshana, phangisa udinge usizo kalokhu isifuyo singabe sesisezingeni eliphezulu lokugula.

Ukwenqabela lokwelapha

Hlaba inkom ngeTetracycline lapho kubonakala izibonakaliso zomkhuhlane. Ukubola konyawo.Lokhu kubangelwa yiBacteria, kubangele ukuvuvukakwamasondo. Ibonakala iyisilima inkom, ingafisi ukusebenzisa uyawo oluhselweyo ngoba lubuhlungu.

11.7 Izibonakaliso

Ukungafisi ukuhamba, lobuhlungu bonyawo oluhselweyo lapho isithi iyahamba inkom.

Ukwenqabela lokwelapha

Sebenzisa iTetracycline, uhlabe inkom njalo ngemva kwamalanga amabii kusiya kwamane, kusiya ngobungcono besifuyo sakho. Umkhulane lo ungamiswa ukumemetheka ngokuhambisa inkom phakathi kwamanzi alomuthi obulala izinambuzane zingakangeni esibayeni kumbe edibheni, Ukuvikela, gcina inkom endaweni ewomileyo njalo ihlanzkile.

11.8 Ukuqumbelana

Isisu senkomo sibasikhulu ngenxa yokwanda komoya phakathi kwaso. Inkomo zilama Bacteria esiswini aphathisa ukugaya ukudla. Lapho egaya, akhipha umoya okumele ulahlwe. Ungekela ukuphuma lumoya, iyaqunjelwa inkomo. Ukupha indumba lomumbu inkomo kwandise ukuziqumbisa.

Izibonakaliso

Isisu, ikakhulu kwesokhohlo, sivuvukile, njalo iphefumula nzima inkomo. Ukutshisa khona ngokujayelekileyo. Amehlo angaba luhlaza kancinyane ngaphakathi.

Ukwenqabela lokwelapha

Sebenzisa inalithi ehlanganiswe lokuyimpompi ukuncedisa ukukhipha umoya. Ingaqunjelwa njalo inkomo, dinga udokotela wenyamazana ahlole ukuthi impompi ezehlisela ukudla eiswini zingabe zivalekile na. Ukuvikela lumkhuhlane ungaphi inkomo zakho indumba lomumbu kakhuu.

11.9 Isihudo

Sande emathole asanda kuzalwa. Sibangela ukulahleka kwamanzi okungabangela ukufa kwesifuyo ngemva kwamahola ayi12.

Isihudo singabangelwa:

- Ukungamunyiswa kwamathole amahola ayisithupha ngemva kokuzalwa.
- Ukuhlukuluzwa ngumumo womkhathi otshisa loba oqanda kakhulu.
- Ukukhulela endaweni engcolileyo.
- Ukumunya uchago olunengi kakhulu.

Izibonakaliso

- Isihudo ematholeni alamatanga amahlanu ezelwe.
- Ukuhlekelwa ngamanzi amanengi, okubonakala ngamehlo atshonileyo.
- Ukutshisa kungabe kungaphansi kokujayelekileyo.
- Amaviruses abangela isihundo kumathole alamatanga amahlanu ukusiya amalanga alitshumi lahlanu okuzalwa.
- Isihudo esibonakala ngemva kwamatanga ayi14 sinzima ukwelapha, njalo imithi ayisebenzi lula lanxa iphiwa inkomo.

Ukwelapha lokwenqabela

Phana inkomo amanzi amanengi alesawudo letshukela. Hlanganisa umumbu lefulawa elamanzi ukuze ukudla kuhlale isikhatsana esiswini. Ungasebenzisa ama Sulphonamide le Tetracycline.

Ukuvikela isihudo gcina amathole endaweni ehlanzekileyo, ugcine wodwa amathole agukayo, engahlangani laphilileyo.

11.10 Amaqhubuqhubu esikhumbeni

Lokhu ngumkhuhlane othelelwana lula, kodwa awubangeli ukufa. Kodwa-ke uchago lubalulutshwana lesikhumba singakhangeleki. Iloba yiphi inkomo ingahlaselwa, ikakhulu ngemva kweminyaka engabamihlanu inkomo zingahlatshwanga.



Izibonakaliso

Amaqhubu esikhumbeni. Inyawo, intamo lexisu kungagcwala amanzi ngaphakathi. Umzimba uyatshisa, ingahlaliseki inkomo.

Ukwelapha lokuvikela

Hlabisa inkomo mnyaka ngomnyaka. Kungasetshenziswa ama Sulphonamide le Oxytetracycline.

ISIQU 12

Imikhuhlane ethwalwa yimikhaza



Injongo yesifundo

- Xoxani ngemihlobo yemikhaza.
- Yazi ngamafitshane ngemikhaza etholakala eZimbabwe.
- Zwisisa imikhuhlane evamileyo ethwalwa yimikhaza.
- Zwisisa imbangela yemikhuhlane ethwalwa yimikhaza eZimbabwe.



Ingxoxo yeqembu

- Bhala imihlobo yemikhaza osuhlangane layo esigabeni sakho
- Dubo bani olubangelwa yimikhaza emhlambini wenkomo zakho?

12.1 Isiqalo

Imikhaza yizibungwana ezitholakala ezihumbeni zenkomo, ziphila ngokumunya igazi lazo. Umkhaza ulekanda elivalwe ngensika ethiwa yisikuthami(*scutum*), lomzimba.Umkhaza onduna ulensika le enkulu, kuthi ensikazi belensika encinyane.Imikhaza ibangela ukumemetheka kwemikhuhlane eminengi ebangela ukubhidlikwa kwezfuyo.Imikhaza iletha udubo olukhulu okudlula zonke izibungwana ezihlasela inkomo.Ngaphandle kwemikhuhlane ethwalwa yimikhaza, imikhaza ngokwayo ilimaza inkomo lapho iluma.Imikhaza ngakhoke ibangela abalimi uhlupho olukhulu.

12.2 Ukuphawulwa kwemikhaza

Ingxoxo yeqembu

- Imikhaza yemihlobo etshiyeneyo yehlukaniswa njani?

Qathanisa impendulo zakho lalezi:

a) Insika(Scutum)

Insika yenduna lensikazi yehlukene.Zingaba lembala etshiyeneyoeyiyo eyehlukanisa imihlobo lemihlobo.

b) Amehlo

Amehlo andise ukuba sensikeni kumbe ngemva kwenyawo zaphambili.

c) Festoons

Lokhukutholaka ekhaneni susiya ekhande kungaba kumbe langabi khona ngokuhlobo wo mlehavan.

d) Umbala wenyawo

Umbala ungaba ngowodwa kumbe etshiyeneyo ixutshanisiwe.

e) Izitho zomlomo

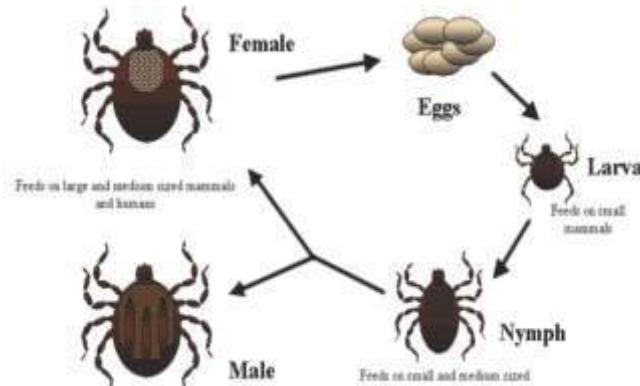
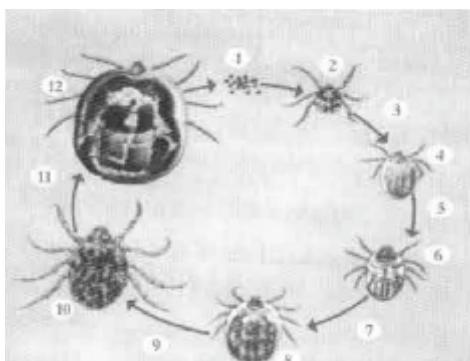
Umlomo ungaba mude loba ubemfitshane njalo uqondile.

f) Izitho zomzimba ezihlaselwa yimikhaza kakhulu

Umhlobo lomhlobo womkhaza uthakazelela ukumunya igazi endaweni thize, lokhu kusiza ukunanzeleka kwemikhaza. Imihlobo yemikhaza evamileyo eZimbabwe yile:

- IBrown Tick(*Rhipicephalus*);
 - IBlue Tick(*Boophilus*);
 - IBontlegged tick (*Hyalomma*);
 - IBont tick(*Amblyoma*).

Impilo yomkhaza



Umtanelaso

Amaqanda (1) abekelwa ngumkhaza onsikazi acacade abe yimikhaza(2) ibisikhula(2) ibesesigabeni sakuqala(4) ngemva kokumunya igazi. Isigaba sakuqala(4) siqhube(5)phezu kwenyamazana siye esigabeni sesibili lapho umkhaza usukhulile(6),uphinde umunye igazi(7) usuthe nti(8). Ukyakhula umkhaza uye esigabeni sokucina(9). Ensikazi ihlangana lenduna, idle ukudla kokucina(11) igcwale igazi(12), iwele phansi endaweni evikelekileyo, emanzi, emhlabathini lapho ebekelela amaqanda.

12.3 Imikhaza ejayelekileyo eZimbabwe

IBrown Ear Tick (Rhipicephalus)

IBrown ear yiwo wodwa umkhaza obangela ukumemetheka komkhuhlane weCorridor le East Coast enkomeni. Iyathwala leRed Water(Babesiosis). Itholakala ekhanda lenkomono, endlebeni langaphansi komsila.



Umkhaza oyibrawuni wendlebe uyamunya ubeye ungamunyi

Ukuphawulwa kweBrown Ear

Umkhaza wonke ubomvu, insika kunye lenyawo.Umlomo umfitshane njalo ubanzi, ulamacele asiyisithupha.Umkhaza lo ukhula phezulu kwenyamazana ezintanthu ingakakhithiki ukuthi ibekele amaqanda.

IBlue Tick(Boophilus)

IBoophilus ithwala umkhuhlane iRed water(Babesiosis) le Gall Sickness(Anaplasmosis) enyamazaneni. Itholakala entanyeni, emzimbeni, lasenyaweni.



Igeikwane lokhaza iboophilus entanyeni ekhanda lamahlombe

Ukuphawulwa kweBlue Boophilus

IBoophilus ingumthubi, kodwa insika ayila mbala.Enduna incinyane njalo ilomsila.Amehlo aphezulu kwensika.

IBont legged(Hyalomma)

IBont legged ibangela iTick Paralysis(Umkhuhlane wokuginqa) leRed Water(Babesiosis) enyamazaneni. Lowu mkhaza utholakala emsileni, lasenyaweni.



Hyalomma tick



Amblyomma

I Bont legged ilenyawo ezilembala etshiyatshiyeneyo. Umlomo mude, amehlo aphezulu kwensika. Iphila phezulu kwenyamaza ezintathu ingakafi.

12.4 Imbangela yemikhuhlane ethwalwa yimikhaza

- Yiyiphi imikhazi esesigabeni sakho?
- Mikhuhlane bani ethwalwa yilemikhaza?
- Mizamo bani eyenziwayo ukwenqabela leyimikhuhlane?

Imikhuhlane ethwalwa yimikhaza iyaphela nxa imizamo yokuyiqeda ingenziwa. Ukwehluleka ukuqedala leyimikhuhlane kungabangelwa yilokhu:

- Ukuswelakala kolwazi lwembangela yomkhuhlane.
- Ukuswelakala kwemali.
- Ukufuya endaweni yinye njengesigaba.
- Imikhuba

Ukuswelakala kolwazi lwembangela yomkhuhlane

Abalimi abanengi abala lwazi olunengi, lalabo abalutholayo ababelani labanye, kumbe izakhamizi azifisi ukulwamukela lolu lwazi.

Ukuswelakala kwemali

Abalimi abebanga elincane baswela imali yokwakha amadibha abo, amadamu lokutshiyeneyo okunakekela inkomo. Inkomo zabo ngakho zihamba imango emide ukuze zithole amanzi. Endleleni, izifuyo zihlangana lezinyezibesezithelelana.

Ukufuya endaweni yinye njengesigaba

Abalimi bebanga elincinyane bafuywa endaweni yinye njengamaqembu esigabeni. Intango azikho, ngakho inkomo ziyahlangana nje, ngitsho lalezoo ezithwele imikhaza. Abaninizo balendlela ezitshiyeneyo zokunakekela inkomo zabo, ngakho kuba nzima ukusebenzelana ukuze iqedwe imikhaza.

Imikhuba

Ngenxa yomsebenzi wenkomo obanzi ogoqela ukusetshenziswa emadilini, ukubhadala amalobolo lokupha ukudla ngesikhathi sendlala, abalimi abanengi bakhetha ukugcina inkomo ezinengi ezinga philanga, kulokugcina ezinlutshwana eziphilileyo. Abanye ngabacabanga ukuthi ukudinga imithi yenkomu ngumlandu kaHulumende, ngakhoke abazihluphi bezama ukwenqabela imikhaza.

Umsebenzi

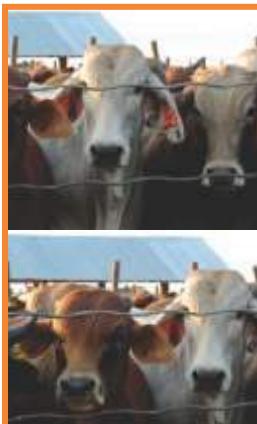
Bhala phansi imihlobo yemikhaza esesigabeni sakho.

Imikhuhlane ethwalwa yimikhaza evamileyo eZimbabwe



Injongo yesifundo

- Ukuzwisia imikhuhlaneithwalwa yimikhaza.
- Ukwazi izibonakaliso zemikhuhlane ethwalwa yimikhaza.



Ingxoxo yeqembu

- Xoxani ngemikhuhlani ethwalwa yimikhaza eyahlasela isigaba sakho.
- Ibonakala njani leyimikhuhlane?
- Zingaki inyamazana ezahlaselwayo?
- Mizamo bani eyenziwayo ukuvikela ukumemetheka kwalemikhuhlane?
- Mithi bani eyasetshenziswayo?
- Ukuzwisia indlela zokunanzelela inyamazana ezigulayo.

13.1 Isiqalo

Imikhuhlane evamileyo yemikhaza evamileyo eZimbabwe

- IEast Coast Fever (Corridor);
- IGall Sickness;
- Iheartwater (Cowdriosis);
- IRed Water (Babesiosis)
- leSweating Sickness (Tick toxicosis)

13.2 IEast Coast Fever (Corridor)

Lowu mkhuhlane uthwalwa ngumkhaza iBrown tick. Izibonakiliso zomkhuhlane zibonakala ngemva kwamaviki amathathu.

Izibonakaliso:

- Ukutshisa komzimba.
- Ubukhulu bembilaphi
- Ukuphela Amandla.
- Isisndo esincinyane.
- Isihudo.
- Ukubhudla amagwebu lapho inkomo sisifa.
- Inkomo ziyata izinengi.

Udokotela wenyamazana kumele adingwe ukuze ahlole inyamazana.

Ukwelapha izifuyo

Ukuvikela ukumemetheka komkhuhlane kudinga ukudibhisa, ukuhlabisa lokwenqabela ukuhambahamba kwenkomo. Ukwelapha kusetshenziswa iButalex leParvexon.

13.3 IGall Sickness(Anaplasmosis)

Lowumkhuhlane uhlasela inkomo, imbuzi lezimvu. Izibonakaliso kodwa zibaluleke enkomeni kuphela. Lowu uthwalwa yiBlue Tick.

Izibonakaliso

- Ukutshisa komzimba.
- Isisindo esincinyane.
- Ukuphefumulela phezulu.
- Amakhala omileyo.
- Ukuqumbelana.
- Amakhovula alithanga
- Ezimithi zandise ukuswela.
- Umkhuhlane lo ungaphazanyiswa leRed Water le Heartwater.

Inkomo elawo umkhuhlane ibonakala ngalokhu:

- Igazi elingamanzi.
- Ijondisi.
- Ukucaka.
- Ukulahleka kwegazi emithanjeni yenhliziyo lezinso.
- Isibindi esikhulu.
- Umbendeni obuthakathaka.
- Ulusu lomile.

Ukwenqabela lokulapha

Yehlukanisa ezigulayo lezisaphila. Hlabo ezigulayo nge Tetracycline, iOxytetracycline isetshenziswe kanye ngemva kwamalanga ayi28. Qaphela ungasebenzisi nalithi yinje kalokhu kuzabangela ukumemetheka komkhuhlane. Dibhisa njalo izifuyo.

Iheartwater (Cowdriasis)

Izibonakaliso

- Ukutshisa komzimba.
- Ukungahlaliseki.
- Isihudo.

Asizo zonke zibonakaliso ezivela sikhathi sinye, kodwake iloba yiphi einyamazana ebonakala ilengitsho esisodwa isibonakaliso kayicatshanelwe ukuthi ingabe igula. Inkomo ebulawa yilumkhuhlane ngokugcwala kwamanzi emzimbeni. Imbilaphi lombendeni kubakukhulu.

Ukwenqabela lokwelapha

- Hlaba inkomo nge Tetracycline.
- Dibhisa inkomo.

13.4 IRed Water (Babesiosis)

Lowumkhuhlane uyathelelwana phakathi kwemkhaza ngokwayo, ubususiya enkomeni. Uvamile eBinga leHwange. Uthwalwa yimikhaza iBont leBlue. Igazi lingabonakala selihlangene lomthambiso.

Izibonakaliso

- Ukutshisa komzimba.
- Ukungalangazeleli ukudla.
- Ukwentshisa lokugaywa kokudla akuhanbi kahle.
- Uchago luba lulutshwana.
- Iphefumula nzima inyamazana.
- Igazi elinengi liyalahleka kutshengiswa ngumthambiso obomvu.
- Ezimithi zingaswela.
- Inkomo zingaqala ukutwhwala nzima ukuhamba.

Lapho umkhuhlane usukhona ngempela, lokhu kuyabonakala:

- Umkhuhlane iGall Sickness ungaqala, kunye lejondisi.
- IHeart water layo ingaqala ukuhlaselwa umhlambi.

Ukuthumezu igazi kweseqitsi zokulatshwa kwenkomo izita ngomkhuhlane weRed water. Inkomo zangilohona zibonakhala nge:

- Umzimba oyo yellow.
- Amanyaka iyibrawuni khanye ngokukhala.
- Inso esikhuliliyo zimnyama.
- Umcamo obomvu.

Ukwenqabela lokuvikela

Dinga udukotela wenyamazana akuphathise, kodwa ke ungahlaba inkom ezigulayo nge Imizol loba iBerenil.

Umkhahlane wokuginqa (Sweating Sickness) (Tick Toxicosis)

Lowumkhuhlane uthwalwa yimikhaza iBont legged. Inyamazana ezincinyane yizo ezivame ukuhlaselwa.

Izibonakaliso

- Ukutshisa komzimba.
- Ukungalangazeleli ukudla.
- Ubomvu emakhaleni lasemehleni.
- Ukubuthana kwesikhumba.
- Ukuvuvuka.
- Amathumba.
- Udenda olunengi olubangela ukulahleka kwamanzi amanengi emzimbeni.

Ukuvikela lokwenqabela.

- Imithi ayazakali kahle. Ukwenqabela ukwanda kwekhaza yiyo yodwa indlela.



Injongo yesifundo

- Ukwazi ngokuqakathika kwezibungwana ezihlasela inkomo phakathi.
- Ukwazi imihlobo yazo.
- Ukwazi izibonakaliso zazo.
- Ukwazi ukuzenqabela lokuzelaoha.



Ingxoxo yeqembu

- Yiziphi izibungwana ezivamileyo esigabeni sakho?
- Inyamazana ezihlaselwe yizibungwana lezi zibonakala njani?
- Zingaki ezahlaselwayo?
- Xoxani ngenhlelo elilazo zokwenqabela inkomo zenu ekuhlaselweni yilezi zibungwana.

14.1 Isiqalo

Zikhona izibungwana eziphila ngokuhlasela izifuyo ziphila esikhumbeni loba phakathi kwazo ngokumunya igazi lalezi zifuyo. Izibungwana lezi zenza inkomo zinga phili kahle, okungeza umlimi alahlekelwe yimali enengi. Ngakhoke umlimi ufanele azazi lezi zibungwana ukuzeavikele izifuyo zakhe.

AmaRoundworm lamaLiver fluke yizibungwana ezivamileyo eZimbabwe. AmaTapeworm lawo akhonyana, loba ehlasi inkomo kangako nxa silinganisa lalezi eziqanjwe phambilini. Ukwenqabela ubukhona balezizibungwana kudinga ulwazi ngokuphila kwazo langa kuthwalwa kwazo zisiya ezifuyweni. Ukuqedu du lezi zibungwana kunzima, kodwa ngokusetshenziswa kwemithi eyehlukenezo zingaphungulwa.

14.2 Izibungwana ezihlala ngaphakathi kwesifuyo

Mithathu imihlobo, iRound worm, iTapeworm lamaFlukes.

14.3 Ukwelapha

Imithi engasetshenziswa ifana leIvermectin, Avermectin, Dormectin, Eprinomectin leMoxidectin kunye lama Benzimidazole. AmaAvermectin asiza ngokubulala ngitsho lezibungwana ezihlala ngaphandle kwenkomo, njalo asebenza okwamalanga kusiya kumaviki ngemva kokwelatshwa kwesifuyo.

AmaRoundworm

Lawa ngamawemusi ahlala esiswini lasemathunjini:

- Ahlasela isisu lamathumbu loba amunye igazi kulezizitho.
- Ukuhlaselwa lokhu kungabangela ukufa kwesifuyo.
- Ayabekela amaqanda alahlwa etshanini kunye lobulongwe benkomo. Amaqanda la ayacacada, adliwe zinkomo njalo lapho zisemadlelweni.

Amanye ahlala ngaphansi kwesikhumba, abizwa ngokuthi ngama Filarial Worms. Abekela amaqanda ezikhadlaneni zesikhumba abesethwalwa zimpukane esiya kwezinye inkomo.



Iraundi wenu lihlala esiswini lamathunjini

AmaTape Worm

Lawa alomzimba omude ocakileyo oyintanjana. Alekhanda elilamawuka lokokumunyisa, lomzimba omude oyintanjana oyiziqephuqephu. Iziqephuqephu zingaqamuka zibonakala ebulongweni.



*Umzimba wethemu wemu
ingalunga ambalwa*



*Isibindi esihlaselwe
ngamathephu wemu*

AmaFluke

Lesi sibungwana siyisiqephu sinye, sihlala esibindini. Ziphila ngokumunya igazi lokubulala iziqu zesibindi. Izifuyo ezihlaselweyo zingafa. Indawo ze Zimbabwe ezivame lezizibungwana ngezilamanzi amanengi, okulamadlelo ahlala emanzi amileyo.



Ifulathi wemu. Ililunga elilodwa elikhanda lomsila

14.4 Ukuqakatheka kwezibungwana ezihlala phakathi enkomeni

Izibungwana ziyejhisa izinga lokuphumelela kwezfuyo ngoku:

- Hlasela amathumbu azo.
- Ngokuhlasela amaphaphu azo.
- Ngokuhlasela isibindi.
- Ngokubangela ukulahlekwa kwegazi ezifuyweni.

Ezinye zalezizibungwana zingathwalelwaa lasebantwini ngokudliwa kwenyama ehlaselwe yilezizibungwana.



Internal worm damage in the abomasum

Izibonakaliso zesifuyo esihlaselweyo:

- Ukungakhuli kahle kwesifuyo.
- Isikhumba esilamaqhubuqhu.
- Isisisndo esincinyane, ukungalangazeleli ukudla lokulahlekwa kwamanzi emzimbeni.
- Ukwelhuleka ukukhula lasemadlelweni amahle.
- Ukulahlekwa ligazi.
- Ukkukhukhumala kwesisu.
- Isihudo.

Ukwenqabela lokuvikela

Ubulongwe benkomo bumele buhlolle ukuze nxa bulezibungwana ziphiwe imithi inkomo. Imithi igoqela iRifoxinide, Nitroxynil, Triclabendazole, Thiabendazole, Piperazine lePhenthiazine. Udokotela wezifuyo kumele acelwe usizo ngemithi efaneleyo. Uhlelo lokukhipha izibungwana enkomeni kumele lumphathwe. Uhlelo olunje ligoqela:

- Ukwehlukanisa amathole lenkomo ezikhulileyo.
- Ukupha inkomo ukudla okufaneleyo ukuze zanelise ukuzivikela.
- Emadlelweni, amathole labonina kumele kudle kuqala, kulandela inkomo ezilomnyaka, kucinele ezindala.
- Ukulungiswa kwamadamu amanzi ukuze inkomo zinganathanathi Emfuleni.
- Ukusetshenziswa kwemithi, kunye lale ethelwa emanzini okunatha.

14.5 Indlela enhle yokwehlisa ukuvama kwezibungwana

Ibala elithi **FIGHT** lingachazwa lisetshenziswe ekuphunguleni izibungwana.

F=Full dose - Phana isifuyo umuthi oqondileyo ofanele isisindo saso, kunye lomuthi owaneleyo lapho zidijiswa.

I=Ideal thinking - Yazi ubude besikhathi umuthi wokudiba esiwuhlalayo ukuze wazi isikhathi esilandelayo sokudibhisa. Yazi ukuphila kwazo izibungwana ikuze uzihlasele ngesikhathi esiyiso, nengokuthi ngesikhathi sokutshisa amaqanda ayatsha anphange afe, kodwake kwezinye izikhathi, ukuhlasela izibungwana eseziqhulile sezibekela amaqanda kungehlisa inani lazo.

G=Give it a break - Ukusetshenziswa komuthi ofanayo isikhathi eside kwenza izibungwana zicine zingasafi, ngakhoke ngemva kwesikhatshana, tshintsha imithi oyisebenzisayo.

H=Hold and treat - lapho ulezifuyo ezitsha, mana ukuzihlanganisa lezinye(HOLD) uqale wazihlola imikhuhlane ubesuzelapha(TREAT). Lokhu kuzakwenqabela ukumemetheka kwezibungwana emhlambini wakho.

T=TEST - Hlola ukuthi umuthi owusebenzisayo wenza wona kanye umsebenzi ofaneleyo na, nxa kungasikho lokhu, tshintsha umuthi.

Ingxoxo yeqembu

- Ngawakho amazwi chaza ukuthi amabala **FIGHT** akukhumbuzani ngokuhlasela izibungwana ezitshiyeneyo ezigoqela lemikhaza.
- Usebenzisa ndlela bani ukwehlisa ubukhona bezibungwanz ezihlasela inkomo ngaphakathi?
- Inkomo zakho ezelapha ezibungwaneni lezi kangaki ngomnyaka?

Izilonda enkomeni



Injongo yesifundo

- Yazi ukuqakatheka kwezilonda enkomeni.
- Yanelisa ukuwazi lapho inkomo zilezilonda.
- Zingavikelwa njani izilonda.



Ingxoxo yeqembu

- Xoxa ngobubi bezilonda emhlambini wakho.
- Izibonakaliso zezilonda.
- Ukwenzabelwa kwezilonda.
- Ukwelatshwa kwazo.

15.1 Isiqalo

Izilonda zilemhlobo emibili. Kulalezi ezihlasela isikhumba sodwa, lalezi ezitshonayo ezidinga ukukhangelwa ngudokotela wenyamazana. Inkomo ingalinyazwa yisipikili loba ameva lamazenge.

Ukuvimbela ukulahlekwa kwegazi enkomeni elesilonda

Izilonda ezitshonayo zingabangela ukulimala kwemithambo yegazi. Nxa kuyimthambo ethwala igazi livela enhliziyweni, igazi elinengi lingalahlekwa inkomo ilimale. Nxa kulimele imthambo eya enhliziyweni, igazi alilahlekwi lilinengi, ngakhoke akuvamanga ukuthi inkomo ibesehlutsheni.

15.2 Ukuqakatheka kokwelapha izilonda

Inkomo kuqakathekile ukuthi ziphile kahle nxa zizathengiseka lula. Kudingeka kusebenze indlela zonke zokuvikela inkomo. Inkomo ezilimeleyo azilimisi kahle, ziphinde zehluleke ukwehlisa ngoba zingasadli kuhle. Izilonda zingabangela imikhuhlane etshiyeneyo ethwalwa yizinambuzane. Inkomo ezilimeleyo azamukeleki lapho sezithengiswa emakethe.

Izibonakaliso zenkomo elimeleyo:

- Ukopha.
- Ubunzima bokuhamba.
- Ukweluleka ukudla.
- Ukuba sebuhlungwini.
- Isilonda esibonakalayo esikhumbeni.

15.3 Izilonda ezintsha

Okumqoka yikuvikela ukopha. Fithizela isilonda, igazi kumele lome. Ukusivala lesisilolnda ngelembu kuyasiza ukwehlisa izinga lokopha. Lokhu kungabanzima kodwa emthanjeni evela enhliziyweni, lapho lilamandla amanengi. Ungabopha ngentambo ngaphezudlwana kwesilonda ukuze umise igazi. Hambisa isifuyo kudokotela wenkomo.



Isilonda esitsha

15.4 Izilonda ezindala

Izilonda ezindala zingaba lempethu. Kuyadingeka ke ukuzihlanza lezilonda. Ungasebenzisa itswayi loba umuthi onjenge *Dettol*. Hlikihla isilonda ngelenjana elihlanzekileyo kuze khanye inyama ephilayo. Sebenzisa isawudo njalo, ubesugcoba ngamafutha vala isilonda sihlale sihlanzekile.

Ukwelapha lokuvikela

Ukuvikela kungenziwa okulandelayo:

- Quma impondo zenkomu ukuze zingahlabani zisilwa,
- Khiphakonke okungahlaba esibayeni.
- Gcina inkomo zivikelekile ezibungwini ezilumayo ezunjengemikhaza.

Ukwelapha:

- Gezisa izilonda ngesawudo loba umuthi onjenge *Dettol* loba iPotassium Permanganate.
- Sebenzisa imithi ebulala izibangela-mkhuhlane.
- Sebenzisa njalo izihlahla zokwelapha ezingabe zisesigaben iezinjenge *Aloe Vera*.

Ingxoxo yeqembu

Ungavuka ngolunye usuku uthole inkunzi yakho isopha, ubesuyihlolisia uthole ilesilonda esitshonayo.

- Chasisa ukuthi ungayelapha njani inkomo yakho usebenzisa imithi yakathesi loba izihlahla.
- Kuyini, ngombono wakho, okuboi nguthi izifuyo zibelezilonda?
- Mbangela ziphi zezilonda ezivamileyo emhlambini wakho?
- Ukhangelele ukwenqabelu njani izilonda emhlambini wakho?

Iowa Beef centre, (2001), *Animal Science*, Leaflet R1753.

Cleere I., *Raising Vs Buying Replacement Heifers*, Agri-Life Extension, Cooper Research Organisation, Cattle tick control. Texas A & M Systems.

Cundiff L. V., (2004). *Implications of Breed Type Evaluations*. Proceedings, 49th Annual Texas A & M University Beef Cattle Short Course. M-7-M-24.

FAO (1997), *Recognising CBPP*, A field manual for recognition: Rome

FAO. (2003). *Community Based Management of Animal Genetic resources*, proceedings of the workshop held in Mbabane Swaziland 7-11 may 2001.

Fell L.R., Wells R. and Shutt D.A., (1986). Stress in calves castrated surgically or by the application of rubber rings. *Australian Veterinay Journal*, Volume 63, pages 16-18.

Fisher A. D., Knight T. W., Cosgrove G. P., Death A. F., Anderson C. 8., Duganzich D. M., and Matthews L. R., (2001). *Effects of surgical or banding castration on stress responses and behaviour of bulls*. Australian Veterinary Journal, Volume 79, pages 279-284.

FAO. (1979). *A Zambian handbook of pasture and fodder Crops*, pages 52-99.

Gadberry S. and Troxel T.R. *Selection and management of replacement heifers* FSA 3076-PD-12-05R, University of Arkansas, division of agriculture cooperative extension services. web site at: <http://www.uaex.edu/pdf>.

Gadberry S., Pemington I., and Powell I. *Internal Parasites in Beef and Dairy Cattle*, University of Arkansas division of Agriculture, cooperative extension services agriculture and natural resources.

Grierson D.S. and Afolayan A.J. (1999) *An Ethnobotanical Study of Plants used for the Treatment of Wounds in the Eastern Cape*, South Africa, *Journal of Ethnopharmacology*, 67:327-332.

Harris F. (1998). *Nutrient management strategies of small-holder farmers in a short-fallow farming system in North-east Nigeria*.

Hasler R., (1996). *Agriculture, Foraging and Wildlife Resource Use in Africa: Cultural and Political Dynamics in the Zambezi Valley*. London and New York: Kegan Paul International and Columbia University Press.

Hove L., Chakoma C. and Nyathi P., (1999). *The potential of tree legume leaves as supplements in diets for ruminants in Zimbabwe*. In: Holness D. H. (editor), *Strategies for Dry Season Feeding of Animals in Central and Southern Africa*. Proceedings of a joint ZSAP/ FAO workshop, Harare, Zimbabwe.

Kasisi Agricultural Training Centre and Swedish Cooperative Centre (2010), *Agroforestry Study Circle material, 3rd Edition*, Lusaka, Zambia.

Loxton I.D., Toleman M.A. and Holmes A.E., (1982). *The effects of dehorning Brahman crossbred animals of four ages on subsequent bodyweight gain*. Australian Veterinay Journal, Volume 58, pages 191-193.

Lawrence I. D., *Profiting from the Cattle Cycle: Alternative Cow Herd Investment Strategies*. Iowa State University Beef Research Report.

Makala L.H., et al, (2003), *The Current Status of Major Tick Borne Diseases in Zambia, Journal of Veterinary Research*, vol. 34, no.1, pp. 27-45.

Mapiye C., Mupangwa I.F., Mugabe P.H., Chikumba N., Poshiwa X. and Foti R., (2006). A review of forage legume research for rangeland improvement in Zimbabwe. Tropical Grasslands Volume 40, 145-149

Moyo B. and Masika P.J., (2009) *Tick Control Methods Used by Resource limited Farmers and the Effect of Ticks on Cattle in the Rural Areas of the Eastern Cape Province*, South Africa. *Tropical Animal Health and Production*, 41:517-523.

Mtonga Y., (2000). *Genetic parameters for production traits of Zambia Holstein - Friesian dairy cattle*. A Thesis submitted to the University of Zimbabwe in Partial fulfillment of the requirements for Master of Science (MJc) in animal science degree. Department of Animal Science, faculty of Agriculture, University of Zimbabwe.

Phiri G.B.M. and F.A. Zulu., (2000). *A field guide on farm animal breeds of Zambia. Ministry of Agriculture, Food and Fisheries*, Department of Research and Specialist Services.

Ritchie H. D. and Anderson P. T., *Calving Difficulty In Beef Cattle: Part I - Factors Affecting Dystocia*. Beef Improvement Federation. <http://www.beefimprovement.org/BIFfactcalving1>.

Sprott L. R.; (2000). *Reproductive Performance in Replacement Heifers has Long-Term Consequences on the Cow Herd*. Texas A and M University Department of Animal Science Publication ASWeb-100. <http://animalscience.tamu.edu/ansc/index.htm>.

Soyelu O.T., and Masika P.J., (2009), *Traditional Remedies Used for the Treatment of Cattle Wounds and Myiasis in Amatola Basin, Eastern Cape Province*, South Africa, Onderstepoort Journal of Veterinary Research, 76:393-397.

Swedish Cooperative Centre and AGROMISA Foundation (2010), *Goat Keeping for Small Scale Farmers: Study Circle Material Book 2*

Tapson D., (1993) 'Biological sustainability in pastoral systems: the Kwazulu case' in Behnke Jr. R.H., Scoones I. and Kerven C., (eds.) *Range ecology at disequilibrium. New models of natural variability and pastoral adaptation in African Savannas*, pp. 118-135. London: Overseas Development Institute.

The Merck Veterinary Manual, Sixth edition.

ZNFU, *Smallholder Cattle Management: Health and Disease Management*, A Handbook for ZNFU Study Circle Programme.