

ENNIMA NDAYI Y'EBIMERA BIRIIBWA EMISI N'OBUMWO

*ENGERI CHIKABUKHAANE ECHEKHOLA
MU KHULIMA EBIMERA BYERYA EBYA
BULI LUDAALO N'OKHUSIKHOLA BULAYI.*



FOOD PLANT SOLUTIONS
ROTARY ACTION GROUP
Solutions to Malnutrition and Food Security



A project of the Rotary Club of Devonport North and
District 9830

www.foodplantsolutions.org



Good gardening and growing root and grain crops in Uganda



FOOD PLANT SOLUTIONS
ROTARY ACTION GROUP
Solutions to Malnutrition and Food Security

Esitongole sya food plant solution situsa ebyandiko by'okhwekeserakho okhunyalisa abandu okhumanya ebiriisa biri mu bimera byerya bya buli ludaalo khandi n'okhwingiya obumanyi khu bimera biliibwa ebiri n'ebiriisa muno nga byanaliira embeera ch'ebifwo mu biri. Bilala khu bimera bino nibyo embya chitakhoseswa muno ng'ebyakhulya khandi nga ebikhira obungi bikhira ebyakhulya bikhutusa erwanyi w'esyalo. Esitangole sya "food plant solution" situsa ebyandiko bino khulwokhuba buli dadika ya buli ludaalo abaana bataanu abali asi w'obukhulundu bw'emiika chitaanu bafwa khulwobutalya bulayi.

Khukhusangaalira khandu khusaaya obukhoonyi bwawo.

Esitongole sya "**food plant solution**"-Tekekha y'omukanda kwa Rotary club of development north nende Rotary district 9830

Akhatabo khano khema khu mboosi okhutula mu mbikhiro y'esitongole sya food plants International (FPI) eyatekekekehwa nende Tasmanian agricultural scientist, Bruce French, AO

Version 1, Dec 2025 (Samia)

Endiisa ndayi nnyangu

Lima khandi olye ebimera biriibwa ebikabukhaane.
Mu ngeri mbwe esiriisa silala nisiwumamo, esiriisa sindi,
sinaba mu bimera bindi khukhube n'ebiriisa mu
khwakaakana.



Small-leaved white raisin



Amabbwoni

Ebiriisa by'obulamu bulayi

Abandu boosi, khandi muno muno abaana, bakhoya okhulya ebimera biriibwa bikabukhaane basikale nibali abali n'obulamu bulayi. Muno mukhoya okhubaamo ebimera okhutula mu mbya ch'ebyakhulya bireeta amaani, ebikhusa omubiri n'ebirinda omubiri. Bulaanu khubiriisa bidakhibwa n'emibiri cheefwe binyoolwe makanakana.

Ebyakhulya bireeta amaani



Amabere

Ebyakhulya birinda omubiri



Amapeera

Ebyakhulya bikhusa omubiri



Soya

Ebimera bya buli nnyanga bituba ebyakhulya buli ludaalo

Khosesa ebimera bikabukhaane ebyanaliilira embeera okhufuna ebyakhulya buli ludaalo.



Kholwokhuba nabuli syasilala siba syanaliilira mbeera mbi n'ebibuukha n'ebinyaasa ebrime.

Nabuli syasilala siri n'engeri yisibaawo mu mbeera mbi oba emikimbo mibi.



Ennima ndayi

Ennima ndayi yinyala okhukhoonyera okhulima ebimera khandi okhwekaya ebibuukha n'obulwaye:

- **Lima ebimera bikhoyera mu bifwo bikhoyera.**
- **Lima embya cha buli ludaalo khandi echigumira embeera.**
- **Birime bilayi bisikale nibilamu.**
- **Khosesa embya saase ch'ebirime.**
- **Wekaye okhukhosesa ebirime bilwaye koti emwo yokhutaaka.**
- **Yongesa esiriisa mu loba ng'okhosesa embolera, n'ebirime bwikha khu birime n'ebiriisa.**

Agro ecology - okhulima ebimera mu ngeri y'obulonge bwabyo



**Okhulima ebyakhulya masaasa mu ndalo
n'engeri ndayi khandi ennyangu
okhukhedeesa ebibuukha n'obulwaye.**



Agroecology - engeri yibimera bikhula mu bulonge bwabyo.

Ebimera khasi bikhulira mu layini mu bulonge bwabyo.

Okhulima esimera silala khasi ngeri y'obulonge.

Embya ennyingi ch'ebimera cherindira mu bulonge.

Mu bulonge, ebimera bikhoyera bikhulira mu bifwo bikhoyera.

Mu bulonge, ebyamo byengera mu mukimbo kikhoyera.

Ebiriisa by'eloba bikaluswa buyaakha mu bulonge.

Ekhola ch'obulonge cherinda echeene.

Mu bulonge, eloba lisikala elamu khandi lebaamo embolera yimala.

Okhulima masaasa ebirime silayi

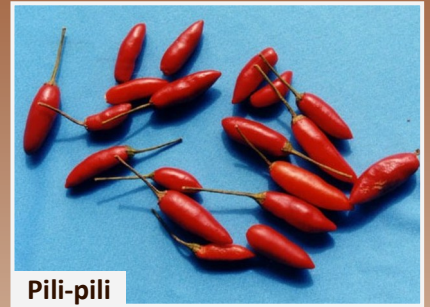
**Okhusaasa emboka/dodo
n'amadiimwa.**



**Amayuuni, amatemwa n'elyani
ly'amasafu.**

Ebimera by'okhutaaka mu ndalo

Omutere kwa bbania



Pili-pili



Amabbwoni



Bbiringanya

Ebimera by'okhutaaka khu lwakho

Ebimera bikhongo binyala okhutaakwa
khu ndulo w'endalo/ khu lwakho.

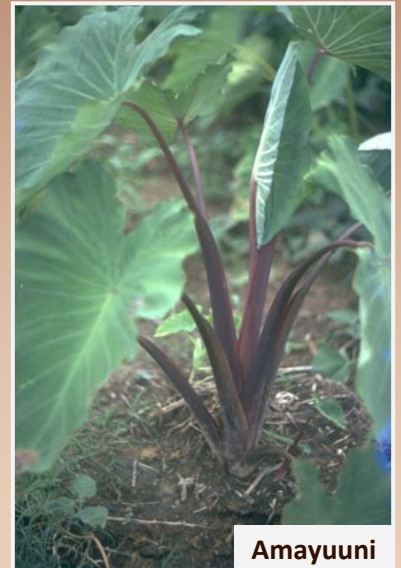
Omutere musaacha



Soya



Namulwa



Amayuuni

Ebyamo n'emisaala chaama amayido bitaakwe mebudokhania ennyumba

Ebyamo bikheerwa n'abandu abangi.

Ebindi bitaakwa khulw'endaalo cho mu mmoni.

Ebyamo bindi byama mu mikimbo lebe. Ebindi
bikhula bwangu.



Ebimera biniina khu ngaka

Ebimera ebingi binyala okhulimwa khu ngaka okhwebodokhania ennyumba oba endalo.



Eyido lya mulekhula



Python climber



Ebbuka ly'oluwo



Esyangu

Emboosi chidiira khu khulima



Okhuwuma ebiriisa

**Fwesi khudakha khwekera
alala khandi khwakabana
bikhumanyire.**



Okhubiikha emwo



Ebibuukha

Obulwaye



Ebimera byawo bilamu?

Ebimera byekesa obubonero lebe nibitaali okhukhula bilayi.

Esaafu ly'ediimwa lino lyekesa liti esimera siwuma esilungo sya nayituregeni. Syekesa esaafu lyefumbire koti "V "okhwika asi akatikaati wa masaafu makhulundu.

Ebimera bindi ebyembya ch'obunyaasi byekesa obubonero nasilala.

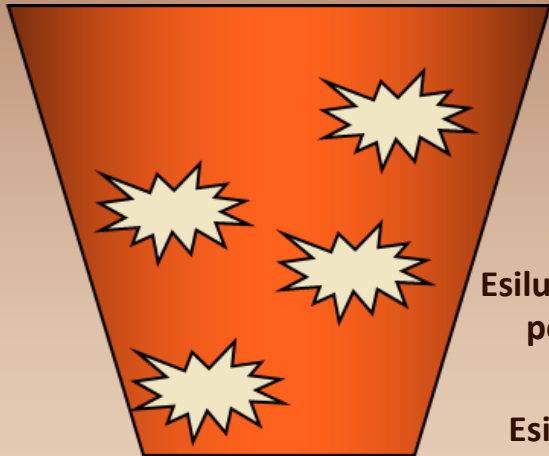
Nayitrogeni yiri mu mbowo, naye ebimera khasi binyala Okhuyikhosesa, okhumalakho obubuukha bwa bbakiteeria obuli mu loba nende khu misi ch'ebimera biri mu mbya ch'ebijajaalo chiyikalukhania yaaba yibimera binyala byakhosesa.



Esikono sy'ebiriisa by'eloba

Khakhwekadyekho khuti eloba liri koti esikono sy'ebirisa, bulaanu khukhoya okhwikala eliina oba okhwongesa esiriisa esikhederere mu sikono sinyale okhukinga ebikhirawo.

Khunyala okhweka okhumanya siriisa siina esikhenderere nga khwekhaliilisa esimera bulayi.



Esilungo sya fosiforaasi

Esilungo sya potasi

Esilungo sya nayiturogeni



Ebimera bikabukhaane bimera khu loba likabukhaane



Amayuuni kadakha eloba kimu.



Enduumwa chidakha eloba layi.



Enduumwa cho khu daala chidakha eloba lya katikaati mu bukimu.



Amabbwoni kakhola bulayi khu loba kata.



Amoogo kaama bulayi khu loba kata muno



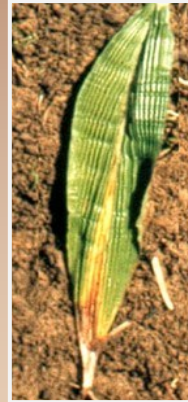
Ebimera bikhira obungi ebiriibwa emisi byama bulayi eloba niririmo esilungo sya potasi okhutula mu kokhe.

Nayiturogeni nikhendeefu...



**Ebimera by'enanaasi
bikalukhana
byafwana ranjaayi.**

**Ebimera khubiteekho amasaafu malayi
bidakha Nayiturogeni.**



**Ebimera by'embya ch'obunyaasi biba n'amasaafu
kakwire kaba mu fwani ya "V" nikali amakofu.**



**Amasaafu
makhulundu
kakalukhana kaaba
namuki.**

Engooli n'ebijanjaalo bireeta esilungo sya poroteyini khandi byakalusa eloba buyaakha.

Engooli n'ebijanjaalo biri n'obubuukha khu misi obufukiirira engooli n'ebijanjaalo okhwingisa niturogeni okhutusa mu mbowo okhuta mu loba ebimera bikhosese. Yino mbolera yabukhaya.



Ebijanjaalo

bilanda binyala byaniina khu bisina by'amadiimwa khandi amadiimwa kanyala okhwamira alala n'amanjaalo.

Okhusamba esiino khukhendeesa ebilungo mu loba khandi khunyaasa eloba.

Okhusamba khunyala khwaba engira nnyangu okhwikula endalo, nisinyalikha ebimera binyala byalekhwa okhubolero mu ndalo/mu loba.

Sino siberesa/ sileeta ebilungo khandi sikhoonyera ebibuukha bya bbakiteeria n'ebindu biri n'obulamu mu loba ebiri n'obukhoonyi khu khukhula khw'ebimera.

Eloba liri n'embolera oba ebimera byabola khasi liwaamo ebilungo mu bikha by'efula.

Ebilungo bya nayituregeni nende salifwa bikotera mu mbowo ebitundu by'ebimera nibisambwa.

Ebilungo bindi nga potasi bisikala ng'ekokhe.



Okhukhola embolera



**Embolera ndayi
okhuyikhosesa mu ndaalo
ndiidi awambi n'edaala.**

Otasamba ebikokha- bikhole embolera.



Engeri y'okhukhola embolera

Amalako k'okhulonda n'okhola embolera:

- **Yombakha ebbokisi eliri n'olwande lwakhaakha okhukayira ebisolo okhwingira.**
- **Yongesamo ebindu bibola okhwanjisa ekhola y'okhubola.**
- **Saasamo amasaafu kasisiiri majaani n'ebitundu by'ebimera.**
- **Fukiiri embowo okhwingira mu mbolera.**
- **Bona oti olwalo lw'eriina ly'embolera lusikala nilunyifu**
- **Yongesamo ebindu byali n'obulamu byafwa.**
- **Nisinyalikha, kalukhania etuumo yibale yinyale okhubola bulayi.**

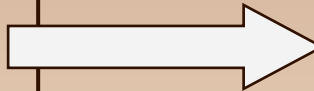
Ngeri yimbolera yekholamo

Obubuukha bwa bbakiteeria n'ebindu bindi biri n'obulamu bibola omulimo kw'okhukhalaka n'okhubosa ebimera n'ebindu bindi biri n'obulamu okhubosa ebimera.



Khulwokhuba bbakiteeria bindu biri n'obulamu, bindakha embowo n'amaachi n'esiriisa situla mu bikokha ng'obunyaasi bwa majaani n'obwomu

Ebindu biri n'obulamu biri n'ebiriisa mu bungu bukoyera khu khukhula khw'ebimera. Bulaanu embolera ndayi.



Okhusikala nilamu, eloba lidakha embolera n'ebindu bilamu okhukhola emirimo chino choosi ekehokhokha mu loba nikhutabona.

Embolera yikhoya okhubala yinyale okhwita esiino n'ebibuukha birya ebimera.

Okhwaliilira emisi

Okhwaliilira emisi n'engeri y'okhwibusa emisi.

Tema eliina ndiidi khu saga nirisisiiri khu musaala. Boya eloba n'obunyaasi khu butemere buno obwikhekho ekarataasi lya nayiloni, mu bikha ebimbikiti emisi chitula bulaanu esaga linyala lyatemwa mani lyataakwa.



Amabbwoni, oba ebyamo oba emusaala kwama amayido, yino niyo engeri yikhira obulayi yokhutaakiramo okhutula khu saala oba okhwaliilira mani omusaala muyaakha kube ng'omukhale.

Biikha obumwo bwawo omwene

Ebimera bitaakwa okhutula khu bumwo bwabiikhwa mu madaala bikhira obutadiirwa obulwaye khulwokhuba byanaliirira esitundu.



Ebimera biriibwa emisi n'obumwo mu Uganda



**Amabere
kaneefumo**

**Ebimera biriibwa emisi n'obumwo
ebingi byanaliilira embeera y'obwire
bwa Uganda.**

**Ebyakhulya bino nibyo olugongofuma
lw'esyalo, mani khukhoya**



Amabere



Ebbwoni sungu (Amabbwoni masungu)



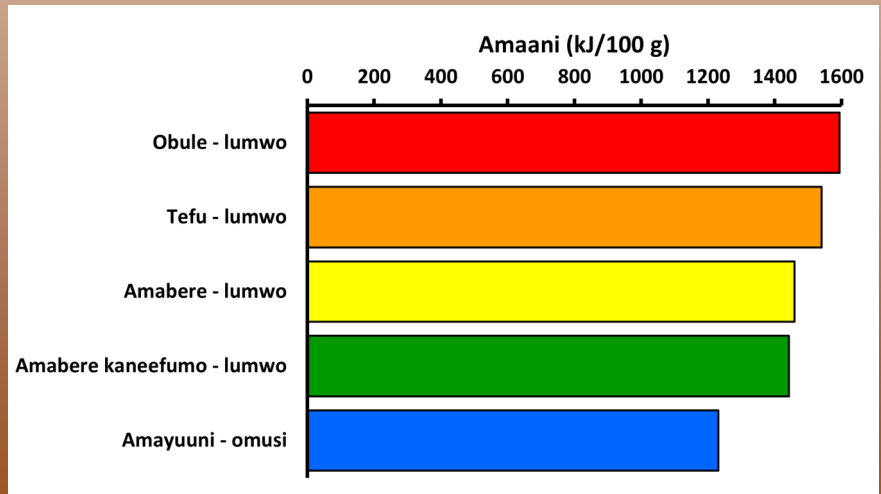
Amayuuni



Obule

Ebimera biriibwa emisi n'obumwo bituberesa amaani

Ebimera biriibwa emisi n'obumwo nibyo
ebikhira okhutuba amaani.



Obule

- Obomwo buliibwa nibukhalange oba nibusyerwemo obusye bw'obusera oba obusuma.
- Amasaafu kaliibwa.

Eleusine coracana



Tefu

- Emwo ya tefu yinyala okhusyebwamo obusye.
- Yinyala yakholebwamo esikhuyuko syokhuta khu mugaati.



Eragrostis tef



- Tefu yangalira akati w'endaalo 90-120.
Embya yicheleba yangalira akati w'endaalo 120-160.
- Obumwo bwa tefu bunyala bwabiikhwa emiika eminge.



Amabere

- Obumwo bw'amabere buliibwa koti amayengere.
- Obusye bunyala okhukhuyukwamo obusera
- Amabere khasi kalimo obulimbo.



Sorghum bicolor



Obumwo bunyala bwamera bwangu nibwakhakeswa naye bunyala okhubiikhwa ebikha ebireeyi nibubiikhwa nibwomu khandi nibukhingakiirwe okhutula khu bibuukha.



Amabere kaneefumo

- Obumwo buliibwa ng'omucheere.
- Bunnyala bwasyebwamo obusye bw'obusoma oba obusera.
- Obumwo busiiri obudoto bunyala bwakhalangwa bwaliibwa ng'emberenge.
- Ebbya chindi chiri n'ebisina binyala byanyaanywa.



Pennisetum glaucum



Omuberenyi

- Obumwo bunyala okhudeekhwa khandi yasebwamo obusisye.
- Yinyanyala okhukhula mu loba nyifu nende eloba lyomu.

Setaria sphacelata



Okhulima amayuuni



Amawuune

- Amayuuni kamera bulayi okhutula khu mbando mu loba litaali enyifu/ elitaalimo amaachi.
- Kangalira khu myosi 9. Bulaanu kanyala kaliibwa.
- Kanyala kakhula mu biinikha bitadidya.

- Enduumwa chimera bilayi okhutula khu mbaadu
- Kakhula bulayi mu maachi kakenda oba mu biinikha
- Kangalira khu myosi 6-9. Ano bulaanu kanyala okhuliibwa.



Amayuuni

Okhuhima amabbwoni

Amabbwoni kadakha:

- Eloba liri n'embowo. Kataake khu mabumbi eloba niniyifu oba elyandakanyu.
- Eloba liiri n'esiriisa, muno mono potasi (ekokhe).
- Kabe yikafunira omubasu kumala.



Yiriwo amabbwoni embya chikabukhaane akandi kakhula mangu, naye khasi kaberesa ebyakhulya bimala, kataake masaasa khukeerye bulayi.

Okhulima amoogo

Amoogo sirime syerya emisi esyangu okhulima, kanyala kabiikhwa mu loba, kamera khu loba kata khandi khasi kafwa mu bikha by'esiminyu.

Taaka esitundu sye sisina syangaale esy'obuleeyi bwa 15cm mu loba memekha.

Eloba niriri elyangu, khasi sidakhibwa okhulima mberi. Amoogo kayabwa olunyuma lw'emyosi 10-14. Khasi kaama bulayi mu loba liri nende asidi enyingi khandi mu loba liri nende khandi mu bifwo byadidya.



Amoogo kakhoya okhudeekhwa bulayi khulwokhuba kalimo obutwa bulangwa "cyanide" obunyala bweyombakha mu mubiri bwanyaasa emisi ch'obusimu bw'omubiri. Okhudeekha okhumalamo obutwa buno.

Amasaafu kadeekhwa kaliibwa.



Ebbwoni sungu; Amabbwoni masungu

- Amabbwoni n'embandu chiribwa.
- Okhuyaba khwanja olunyuma ly'emyosi 3 nikataakirwe.
Amabbwoni kasisiri okhwangala khasi kabaamo amabeere.
- Amabbwoni khasi kayabwa okhwola amasaafu lukafwa

Dioscorea bulbifera



Okhwabasa /okhusiima



Obwandike buno buwagiirwe ohuwayo ohutula mu Interact club of Kedron High school.

Esyandiiko sino khasi syakhanyaliikhe ataali okhwewaawo n’obukhoonyi bwa batume abakabana esilooto sino n’obutemana ebikha byabwe okhukhoonya etekekha yino.

Okhwiluula, Okhulambulula n’Okhuwombakha – Rick Campbell, John McPhee

Okhukalukhania – Orodi Jack, Ogot Pofuojamino, Nafula Sylvia Egondi, Kawagga Susan, Namude Aidah, Wandera Charles, Mangeni Richard Sande, Mande Olinga Yowa, Mangeni Joseph, Ojiambo Godfrey Adika, Oguttu Joseph, Sanya Robert

Omukanda kwasoma mekhaliirisa – RC Budia (Bwire James), RSatC Lumino (Oundo Francis, Barasa Godfrey)

Ebikhira ano twolerere khu sibanja : info@foodplantssolution.org, website www.foodplantsolution.org

Esitongole sya food plants solution sikhola okhuchiira khu malako ka Rotary International naye khasi sikholera, oba okhukobibwa nende Rotary International

Okhwebasa/okhusiima ab'ebifwananyi

Ebifwanayi bikhoseeswe mu syandiko sino bitula mu mbikhiro y'emoosi ya food Plants international

Okhwebasa / okhusiima khubereswa khu lw'ebifwanayi by'ebimera ebyatula khu intaneeti.

Eliti ly'abasayaasi	Eliti Iya buli ludaalo	Eliti Iya buli ludaalo
<i>Cocculus hirsutus</i>	Python climber	https://species.wikimedia.org/wiki/Cocculus_hirsutus
<i>Grewia tenax</i>	Small-leaved white raisin	http://www.southernafricanplants.net/photocollection/batch005/medium/G/TILLIACEAE_Grewia_tenax_Arandis_20090215_072_(1).jpg
<i>Hibiscus trionum</i>	Omutere musaacha	https://i.pinimg.com/originals/29/a5/c2/29a5c2c4457308d0fc36439ee5e26310.jpg
<i>Mangifera indica</i>	Omuyembe (Emiyembe)	https://th.bing.com/th/id/OIP.cLiCvFcmgNvmY7OkE_7JAQHaFj?rs=1&pid=ImgDetMain
<i>Setaria sphacelate</i>	Omuberenyi	https://noosasnativeplants.com.au/plant-details/?pId=714
<i>Telfairia occidentalis</i>	Eyido Iya mulekhula	http://tropical.theferns.info/plantimages/1/7/179df45655f8ba2d0cf9ef4c29c97cf298f55729.jpg

Obwandiike



FOOD PLANT SOLUTIONS
ROTARY ACTION GROUP
Solutions to Malnutrition and Food Security



www.foodplantsolutions.org