

IGITABO MFASHANYIGISHO K'UBUHINZI BW'IBIHUMYO BYA OYSTER



**KATEGUWE NA TIGRWA MUSHROOM COMPANY LTD IBIFASHIJWEMO NA
PATNERS IN HEALTH RWANDA**



UBUHZINZI BW'IBIHUMYO BIHINGWA MU BUTAKA

Ibihumyo bya Oyster



INTANGIRIRO:

Ubuhezizi bw'ibihumyo ni bumwe mu buryo bufasha abahinzi kurya neza no kwivana mu bukene kandi bidasabye isambu nini. Aka gatabo kazagufasha neza kukwereka uko wanoza cyangwa watangira ubuhezizi bw'ibihumyo mu buryo bworoshye ndetse no kubishoramo imari.

Ibihumyo bivugwa muri aka gatabo ni ibyo mu bwoko bwa *Pleurotus Ostreatus*, bikaba bimwe mu bihumyo biribwa kandi byoroshye guhingwa mu butaka.

Karagufasha uburyo bunononsoye kandi bworoshye bwo guhinga ibyo bihumyo mu butaka, kakagagaragaza akamaro ntungamubiri k'ibyo biribwa, kakerekana kandi n'umusaruro mpuzandengo w'ubuhezizi bw'ibihumyo.

Amakuru ari muri aka gatabo akubiyemo amakuru y'ingenzi akurikira:

- Amakuru rusange ku bihumyo
- Uburyo bwo guhinga ibihumyo bya *Pleurotus Ostreatus*
- Inzitizi mu buhezizi bw'ibihumyo n'ibisubizo byazo
- Ibyiza byo guhinga ibihumyo

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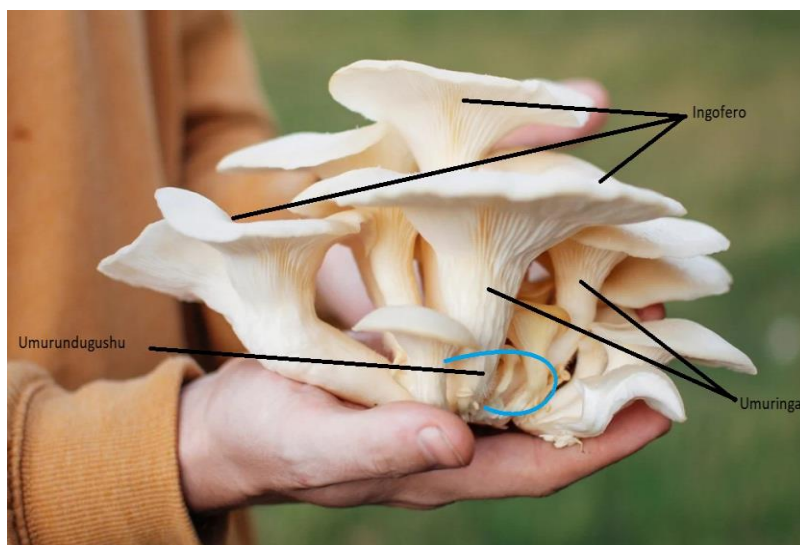
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1. AMAKURU RUSANGE KU BIHUMYO

1.1. Igihumyo ni iki?

Ibihumyo ni itsinda rya fungus cyangwa igihingwa kidasanzwe; nta ndabyo cyangwa imbuto.

Umurundugushu wacyo ntugira imizi, amashami n'amababi. Ibi bisimburwa **n'umuringa** ndetse **n'ingofero**. Uyu murundugushu niwo ufata ku mugina aho giteye ukabomamo intungamubiri.



1.2. Ni akahe kamaro k'ibihumyo mu mirire?

Mu ntungamubiri zigize ibihumyo harimo izituma ubiriye :

- Yirinda indwara z'imirire mibi,
- Yirinda indwara zijyanye no kugira amaraso make,
- Igifu, umwijima, n'amara bye bikora neza,
- Bimufasha kwituma neza,
- Yongerera umubiri ubushobozi mu kwirwanaho,
- Yirinda indwara ziterwa no kugira ibinure byinshi mu miyoboro y'amaraso,
- Agira amagufa akura neza kandi akomeye,
- Agira umubiri utoshye kandi utarwaragurika
- Ibihumyo bifasha izindi ntungamubiri gukora neza akazi kazo.

Ibihumyo bifite poroteyine, vitamine, imyunyu ngugu, na antioxydants kandi ni cholesterol kuburyo dushobora kubisimbuza inyama burundu.

1.3. Ese ibihumyo byose biraribwa?

✓ Ubushakashatsi bwagaragaje ko ku isi hari amoko menshi y'ibihumyo. Nyamara byose siko biribwa. Hari ibihumyo biribwa ariko kandi hari n'ibihumyo bitaribwa. Ni byiza rero kugenzura ibihumyo mbere yo kubikoresha.

NB: Ibihumyo byose utaziye inkomoko ujye wirinda kubisoroma ngo ubirye. Ugomba kwirinda cyane cyane ibifite amabara meza cyangwa atukura kuko biba ari uburozi.

Amafoto agaragaza bimwe mu bihumyo bitaribwa(ni ibyitwa ibiyeye bikunze kuba mu ishyamba):



1.4. Amwe mu moko y'ibihumyo biribwa biboneka mu rwanda:

Mu Rwanda hamaze kugezwa amoko menshi y'ibihumyo. Amwe yatangiye guhingwa, andi aracyari mu bushakashatsi.

Ibi bihumyo bikurikira ni Oyster Mushroom bihingwa mu Rwanda.



Ibihumyo byimeza cyane cyane mu ishyamba



Ibihumyo yo mu bwoko bwa Oyster



Ibihumyo bya Button



Ibihumyo bya Shittake

Muri ayo moko yose, *pleurotus ostreatus* cyangwa se oyster niyo ikunze guhingwa henshi mu Rwanda kuko niyo yoroshye kandi ikunwe cyane. Niyo mpamvu tugiye kwibanda ku ihingwa ry'ibihumyo bya Oyster.

2. UBURYO BWO GUHINGA IBIHUMYO BYA PLEUROTUS OSTREATUS

Umuhinzi ushaka guhinga ibihumyo agomba kuba afite imigina igeze igihe cyo guhingwa kandi akubaka umurima wo guhingaho iyo migina.

2.1. Umugina ni iki?

✓ Umugina ni uruvange rw'ibyatsi bitandukanye bipimwa mbere bigatunganywa hanyuma bigashyirwamo umurama nyuma yo gucanirwa kugirango hapfe imyanda byaba byakoranwe hanyuma ugaterekwa ahabugenewe hari isuku ihagije mu gihe cy'iminsi iri hagati ya 30 na 40 ngo were maze ugeze igihe cyo guhingwa.

✓ Mu gukora Umugina hifashishwa ibyatsi birimo urubingo, ibigorogori, ibitiritiri, ibishogoshogo by'ingano, iby'umiceri, iby'uburo, iby'ibishyimbo, ibikatsi n'ibikongorwa by'ibisheke n'ibikenyeri by'amasaka. Hifashishwa kandi ifumbire mva ruganda (urea), ishwagara, n'imashini eshatu harimo isya ibikoresho byavuzwe haruguru, ibivanga, ndetse n'ishyira imvange mu mashashi cyangwa bikavangwa ndetse bikanapakirwa hakoresheje uburyo gakondo bw'intoki ariko bwitaweho kandi bwagenzuwe neza kugirango itangirikira mu gukorwa.

Imigina tuzahinga aha ikozwe mu ipamba, son de riz n'ishwagara. Ipamba dukoresha 90%, Son de riz dukoresha 8%, naho ishwagara yo ni 2%.



2.2. Umugina mwiza uwubwirwa n'iki?

✓ Mbere yo kugira umugina, ni ngombwa kugenzura niba ari mwiza. Umugina mwiza ni uweze/wuzuye, wererana, udafite uburwayi cyangwa indi nenge.

Amafoto akurikira agaragaza umugina wuzuye neza n'undi utaruzura ubura iminsi mike ngo wuzure:



Imigina igeze igihe cyo guhingwa



Imigina itarageza igihe cyo guhingwa



Imigina irwaye (Irimo ibara ry'umukara cg icyatsi)



Icyitonderwa:

Uburwayi ku mugina bugaragazwa n'ibara ry'icyatsi cyangwa se iry'umukara. Umugina ufite aya mabara umuhinzi akwiye kuwirinda kuko unawuteye utakwera ibihumyo.

Ni byiza ko udahita utera imigina ukiyigura iyo yaturutse kure, ahubwo ugategereza iminsi ibiri kugeza kuri ine kugirango iterwe imeze neza.

2.3. Inzu yo guhingamo ibihumyo yubakwa he?

Mu rwego rwo kwirinda icyabangamira gukura neza kw'ibihumyo, ni byiza kubaka inzu kure y'ikiraro icyo ari cyo cyose, kure y'umusarani, kure y'ububiko n'ibikoresho by'imiti, kure y'ikidendezi cy'amazi na kure y'ikigega cy'imyaka; ukanamenya ko mu gisharagati hagomba guhora hahehereye.

2.4. Inzu yo guhingamo ibihumyo yubakwa gite?

Mu kubaka inzu ihingwamo ibihumyo si ngombwa gukoresha ibikoresho bikomeye cyane cyangwa se bihenze. Igikenewe ni ubuhehere, umwuka n'urumuri biringaniye. Cyakora nibyiza ko inzu yo guhingamo ibihumyo kiba kitava kugirango ibihumyo bitangirika mu gihe cy'imvura. Inzu yo guhingamo ibihumyo ishobora kuba mpande eshatu cyangwa se mpande enye.

Amafoto agaragaza uburyo wakubakamo inzu yo guhingamo ibihumyo:



2.5. Uko bakora umurima wo guhingaho imigina:

1. Ubanza gusasa isashe hasi ku murima wubatseneza ukagenzura ko isashi ikwiriye ose kandi igera no ku mpande kugirango hatabaho gukoranaho k'umugina n'igiti/urubaho, nyuma y'ibyo kandi mbere y'uko ushyiraho imigina usasa agataka byibuze gafiteho umubyimba wa cm 1 hasi nk'uko bigaragara ku mafoto akurikira:



Aya mafoto agaragaza inzu yo guhingamo ibihumyo yubakishije ibibambano by'urufunzo imbere harimo umurima wubatse mu mbaho mu buryo bwabugenewe harimo gushyirwaho agataka gake mbere yo guhagarikaho imigina.

Iyo umaze gutunganya umurima, ushyiraho imigina ihagaritse neza kandi yegeranye umwe k'uwundi nk'uko bigaragara ku mafoto akurikira:



Iyo umaze kuyihagarika neza(imigina) ku murima, uhita umena itaka ritari ryinshi hejuru hanyuma ukarisanzaho neza kuburyo rikwira hose kandi neza wita k'ukugenda kandi uryinjiza neza hagati y'umugina n'undi ahagiye harimo umwanya.



2.6. Kuvomerera

Iyo usoje gutera imigina, hakurikiraho kuyuhira ariko bikorwa ku munsu wa gatatu nyuma yo gutera imigina, hanyuma ukajya ubikora mu gihe ubona nta buhehere buri mu murima cyangwa se kubihumyo. Ntago bikorwa inshuro imwe ku munsu cyangwa izirenze imwe ahubwo biterwa n'ubuhehere bukiri ku murima bitewe n'ikirere cy'ahantu umurima uherereye.

✓ Iyo umaze kuvomerera, ushyiraho ishashi igondeye ku biti byibura kuri metero 1 ubariye aho igiti kigondeye, kugirango hagumemo ubuhehere kandi hatagira ikibazo cyo kumagara kugeza igihe bitangiye kuzamuka.

Ifoto: Kuvomerera



Icyitonderwa: Sibyiza kuhiza amazi menshi kuko bigabanya umusaruro ndetse bikica n'ibihumyo bikizamuka ku murima. Iyo amazi abaye menshi ku murima, hazaho amabara y'umukara agaragaza ko washyizemo amazi menshi bityo umugina ntube ukiri umugina ahubwo ukaba nk'ifumbire kuburyo uba utagitanze umusaruro.

2.7. Ni gute wakwita ku bihumyo mu gihe bikizamuka???

Iyo umaze gutera imigina, buri munsu:

- Utwikukurura ya shashi mbere ya saa moya za mu gitondo mu gihe cy'igice cy'isaha (iminota 30), ukavomerera, ukongera ugatwikira,
- Mu gihe izuba rirenze ukaza kongera ugatwikurura igice cy'isaha, ukavomerera.
- Ibyo bikorwa kugira ngo bizamuke neza kandi binahumeke umwuka mwiza.
- Mu gihe cy'izuba ryinshi, birashoboka ko ubutaka bwumagara, icyo gihe rero ushobora gusuka amazi ku mpande z'umutabo watewemo imigina.

NB: Nibyiza gukoresha shitingi niba hari ubushyuhe bwinshi kandi ibihumyo bimaze gukura.

3. GUSARURA IBIHUMYO

3.1. Ibihumyo bisarurwa ryari?

Ubu bwoko b'ibihumyo busarurwa ingofero ikigondeye imbere, ni ukuvuga ngi itararambuka neza. Iyo irambutse, igihumyo gita ibiro, ntikigire isura nziza kandi ntikiba gishobora kubikwa neza.

3.2. Gusarura ibihumyo bikorwa bite?

Nibyiza gusarura ibihumyo mu gitondo mbere y'uko izuba riva cyangwa se nimugoroba izuba rirenze. Ugiye gusarura abanza koza intoki ze akazumutsa, akitwaza icyuman'agatebo ka pulasitiki cyangwa ibase bisukuye neza. Hasarurwa umugina umwe umwe.

Uko bikorwa: Ufatisha ibiganza byombi ugasa n'ufungura ivisi ujjana mu ruhande rumwe ukagarura mu rundi, hanyuma ukazamura witonze wirinda kwangiza imigina kugirango izakomeza neza.

Ibihumyo bisarurwa neza bikurwa ku mugina mu bwitonzi n'isuku nyinshi mu rwego rwo kwirinda kubyanduza.



Ifoto igaragaza isarurwa ry'ibihumyo bigeze igihe cyo gusarurwa.

Umugina umwe ushobora kweraho hagati ya garama magana atatu na magana ane (300g-400g) mu gihe cy'amezi atatu bitewe n'ubuziranenge bw'umugina, n'ikirere cy'aho uhinze ndetse n'uburyo witaweho. Iyo umugina utari mwiza, ntushobora kwera inshuro zirenze ebyiri bityo ntutange umusaruro wari witezwe ahubwo ukera ikigereranyo cya garama magana abiri mirongo itanu (250gr).

Icyitonderwa:

1. Usarura ibihumyo yirinda kwinjirana mu murima intoki zanduye, imyenda avanye mu murima cyangwa se yateresheje imiti, kuko ibi byose bishobora kwanduza ibihumyo.
2. Si byiza kuvuna igihumyo kuko igice cy'umurundugushu kiramutse kigumye mu mugina, cyabura kigatuma wangirika, bityo ibindi bihumyo ntibishobore gushibuka.

3.3. Ibihumyo byiza biba bimeze bite?

- ✓ Ibihumyo byiza ni ibisarurwa bigifite itoto kuko aribyo bishimwa ku masoko kandi biryoha kurushaho.
- ✓ Iyo ibihumyo bisaruwe bigifite itoto bisigira ibizashibuka intungamubiri zihagije.
- ✓ Iyo umuhinzi ashaka kongera umusaruro atinda gusarura, ibihumyo nibyo koko byera neza bishishe, ariko ibishibuka ntibiba bimeze nk'ibyangibanjirije.
- ✓ Ibihumyo byiza biba bisukuye nta taka bifite.

Reba amafoto y'ibihumyo byasaruwe bimeze neza n'indi bishaje cyane:



Icyo wamenya: Sibyiza gutegereza ko imigina isaza ngo isarurwe.

Iyo ibihumyo bimaze gusarurwa bigomba gushyirwa muri envelope zabugenewe kandi zifite isuku ihagije mu gihe ugiye kubyohereza ahantu runaka k'umukiriya cyangwa undi wese.

Amafoto akurikira agaragaza ibihumyo bimaze gusarurwa bashyizwe muri envelope zabugenewe:



3.4. Imigina imara igihe kingana iki ku murima?

Imigina imara amezi atatu ku murima. Iyo ubonye ibihumyo bitakizamuka, upfukuraho ya shashi mu gihe cy'iminsi irindwi, nyuma ukongera ukavomerera ukanatwikira nka mbere; iyo nanone nyuma y'icyo gihe nta kizamutse, aba aruko iba yahunduye, iba igeze igihe cyo gusimbuzwa indi.

3.5. Imigina ishaje (yahunduye) imara iki?

Umugina wahunduye ushobora gukoreshwa ibintu bitandukanye: kongera ugakoreshwa indi migina(ariko ibanje gutunganywa), ifimbire y'imborera no kugaburirwa amatungo nk'ingurube, amafi n'inkoko.

4. UBURYO IBIHUMYO BIBIKWAMO

Ushobora kubika ibihumyo mu buryo butandukanye niba udashoboye kubigurisha bikiri bishya mbere yuko byangirika. Wibuke ko ibihumyo byangirika cyane, rero bigombwa kwitabwaho neza.

Hano hari uburyo butandukanye wabikamo ibihumyo kugirango ubyongerere igihe cyo kuba byakoreshwa nta kibazo bifite cyangwa ngo bitakaze ubuziranenge:

4.1. Kubyumisha



4.2. Kubikoramo ifu

Ibihumyo bishobora kumishwa bigakorwamwo ifu nyuma kugira ngo bibikwe igihe kirekire.



5. IMBOGAMIZI ZIBA MU BUHINZI BW'IBIHUMYO N'UBURYO WAZIRINDA

- **Contamination/Umugina upfuye:** Iyo uguze umugina upfuye(Ufite ibara ry'icyatsi cg umukara),ushobora gutubya uusaruro bityo ntiwere nkuko bisanzwe.

Uburyo wabirwanya: Kugura umugina wizeye neza kandi ubona ko ntakibazo na kimwe ufite: hose ari umweru dede nta bara ry'icyatsi ririmo.



- **Udukoko:** Iyo umuhinzi ahinze imigina ahantu hashobora kwatakwa n'imiswa nabyo bituma atagira umusaruro mwiza kuko umuswa umunga umugina bityo ntiwere kandi iyo bititaweho neza bishobora kwangiza umurima wose kuko bikwira umurima mu gihe gito.



Igisubizo: Nibyiza ko umuhinzi abanza akareba ahantu agiye guhinga ko nta muswa uhari cyangwa wahigeze, mu gihe awuhasanze nibyiza guhindura umurima, mu gihe kandi ntawuhari, nibyiza gukoresha vidange/imifuka cg amashashi bigakikiza umurima kuburyo hatabaho guhura kw'imigina n'imbaho zubatse umurima kandi bikaba mbere yo gushyira imigina ku murima bityo umuswa ntubone aho uzinjirira.

Menya ko niba hadafashwe ingamba zihuse ku muswa mu murima, imiswa ifite ubushobozi bwo gusenya umurima wose mugihe gito. Uyu muti ntabwo ari mwiza ku biribwa, bityo rero wibuke gusarura ibihumyo ubona ko bigeze igihe cyo gusarura mbere yo gutera imiti, ikindi kandi ntukarye cyangwa ngo ugurishe ibihumyo nyuma yo gutera umuti kuko bishobora no kwica.

- **Kuhiza amazi menshi:** Kuhiza amazi menshi nabyo ni kimwe mu byatuma umuhinzi atabona umusaruro yari yiteze.

Igisubizo: Umuhinzi agomba kwitondera kuvomerera bitewe n'ikirere cy'ahantu, kuburyo amazi agomba kuba aringaniye kandi ubuhehere bukaguma mu gitaka. Iyo mu gitaka harimo ubuhehere ariko ukabona ibihumyo bias n'ibigiye kuma, nibyiza ko whira ku bihumyo hejuru ntushyire ku murima amazi kuko amazi menshi mu gitaka si meza.

- **Ubumenyi budahagije:** Iyo nta bumenyi ufite biragora kumenya uko ukurikirana uko wakora ibintu neza, rero nibyiza ko ukora umushinga ufiteye ubumenyi.

Igisubizo: Ni byiza ko ushaka amahugurwa, ukiga neza ku mushinga ugiye gukora hanyuma ugatangira kuwukora ufite amakuru ahagije bityo ntibikugore kandi ugahora wihugura kugirango ugire amakuru ahagije.

Muri rusange rero, Ibihumyo bikura bishobora guhungabwanywa no kubura ubuhehere buhagije, kubura umwuka mwiza bikeneye ngo bikure, ubushyuhe bwinshi, cyangwa se kurwara ku mpamvu zitandukanye, cyangwa se bikangizwa n'ibyonnyi nk'imbeba, inzukira, imiswa, ibinyamujongorerwa n'uducurama.

5.1. Ni iki wakora kugira ngo ufate neza umurima w'ibihumyo???

Mu rwego rwo kwirinda ibi bibazo byavuzwe haruguru, ni ngombwa:

- Kubaka umurima no kwita ku migina wubahirije amabwiriza yatanze,
- Kugira isuku ihagije,
- Kwirinda amasazi mu murima,
- Gufunga umuryango waho bihinze mu gihe ibyahakorerwaga birangiye,
- Kugenzura uburwayi no kubukumira hakiri kare, ukamenyesha abakugurishijeho imigina cyangwa abaguhuguye mu gihe ubonye ikibazo,
- Gukubura neza ibisigazwa mu gihe umaze gusarura kugira ngo bitabore bigatera indwara.
- Gukuramo ibisigazwa by'imigina yahunduye no gutunganya neza umutabo mbere yo kongera gutera indi migina.

5.2. Amafoto abiri akurikira afite ibimenyetso bitandukanye:



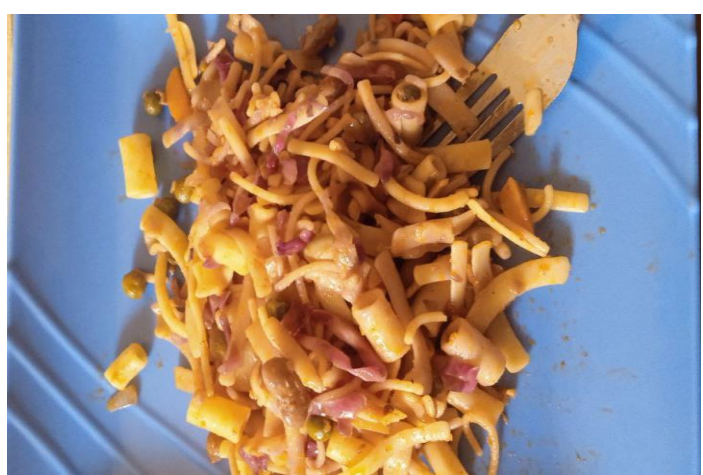
Ku ifoto ya mbere, igihumyo cyarahiye cyangwa se cyarumye kubera kubura ogisijeni hamwe na carbon dioxide ihagije bityo rero ugomba gutegura icyumba uteramo imigina yawe neza kuburyo kigeramo umwuka uhagije.

Ibihumyo ku ishusho ya kabiri birenda kuma kubera ubushyuhe cyangwa izuba ryinshi, ugomba rero kuyitera amazi neza.

6. IBYO WATEKA MU BIHUMYO

Ibihumyo bishobora gutekwamo ibiribwa bitandukanye harimo kubikoramo burrete, guteka umuceri n'ibihumyo, kubitekana n'amakaroni, kubikoramo isambusa, kubiteka isosi, kubikoramo speciale(omulete), pottage cyangwa isupu.

Aya ni amafoto agaragaza uburyo butandukanye watekamo ibihumyo:



7. IBYIZA / UMUMARO WO GUHINGA IBIHUMYO BYA OYSTER

Ibihumyo ni kimwe mu biribwa bikungahaye kuri poroteyine, vitamine, imyunyu ngugu, na antioxydants kandi ni cholesterol kuburyo dushobora kubisimbuza inyama burundu.

7.1. Kuki wahitamo guhinga *Pleurotus Ostreatus* ibihumyo?

1. Biroroshye kubihinga,
2. Bihingwa mu butaka,
3. Ntibisaba ikoranabuhanga rihambaye,
4. Ntibisaba ubutaka bunini kuko no kuri metero kare imwe hahingwa,
5. Ibikoresho bikenerwa mu kubihinga biboneka hose mu Rwanda ku buryo bworoshye,
6. Umusaruro wabyo urashimishije: ku mugina umwe hashobora kweraho hagati ya 300gr na 400gr,
7. Ibihumyo byerera igihe gito cyane: hagati y'iminsi 10-14 uba utangiye gusarura, kandi ukamara amezi 2 ukagera kuri 3 usarura mu bihe bitandukanye,
8. Gutangira kubihinga ntibisaba amafaranga menshi: umuntu ashobora guhera ku mafaranga 50,000 gusa,
9. Ntibatwara umwanya munini mu kubyitaho,
10. Ubihinze arunguka.