

JICA CUP2 Project

IMFASHANYIGISHO GUTUNGANYA KAWA

Imfashanyigisho y'uruganda
rutunganya kawa



Ibirimo

Iyi mfashanyigisho isobanura uburyo 6 butandukanye butandukanye bwo gutunganya kawa:

1. Kawa yogeje
2. Kawa yogeje (Ihugutishijwe mbere yo gutonorwa)
3. Kawa itonoye ikanikwa itogeje
4. Kawa itonoye ihugutishirijwe ahatagera umwuka ikanikwa itogeje
5. Kawa yanitswe idatonoye
6. Kawa ihugutishijwe ahatagera umwuka ikanikwa idatonoye

Ubusobanuro bw'inyito

Gukurikirana inkomoko:

Uburyo bwo gukurikirana urugendo rwa kawa kuva mu murima kugera kumuguzi wanyuma, harimo n'ibyiciro byo kuyitunganya no kuyitaho.

Ihugutisha murubuto:

Uburyo bwo guhunganya kawa aho ihuguta idakuweho Igishishwa, bigafasha ubunyabuzima gutunga gukora murubuto rwose.

Ihugutisha ntamazi :

Uburyo bwo gutunganya kawa aho ihugishwa itari mu mazi, bigafasha utunyabuzima karemano gutunganyiriza umurenda ahantu hadatose cyangwa hadaherereye cyane .

Ihugutisha ntamwuka:

Ahatagera umwuka wa ogisijeni.

Ihugutisha ahari umwuka:

Ahari umwuka wa ogisijeni.

Kubabuka:

Kwanika ku zuba ry'igikatu bigatuma kawa yuma igice cy'inyuma imbura gihe.

pH:

Igipimo kigaragaza ubusharire bw'ibisukika, kibarwa hagati ya 0 (igishaririye) na 14 (ikidashaririye).

Azoti (N):

Intungagihingwa y'ingenzi mubuhinzi bwa kawa ifasha igihingwa gukura neza no gutanga umusaruro.

P (Phosphoros):

Intungagihingwa y'ingenzi mubuhinzi bwa kawa ifasha imizi gukura neza ndetse n'uruyange rukiyongera bityo umusaruro ukaba mwiza.

K (Potassium):

Intungagihingwa y'ingenzi mubuhinzi bwa kawa ituma ibiti bigira imbaraga, bikihanganira izuba, kandi bikera kawa nziza.

Kohereza Umwuka:

Iyinjira n'isohoka ry'umwuka ahantu runaka hagamijwe kwinjiza umwuka mushya kugira ngo ubushyuhe, ubuhehere cyangwa ibyahumanya bisohoke.

Urutonde rw'ibikoresho n'imashini

Cherry paddle:

Igikoresho cyoroshye gikoreshwa mu kugenzura uko imbuto za kawa zeze cyangwa uburemere bwazo, akenshi hakoreshejwe kuzikorogoshora mu mazi kugira ngo harebwe izireremba mu gihe cyo gutoranya.



Brix meter:

Igikoresho gipima ingano y'isukari (°Brix) iri mu mbuto za kawa, umutobe cyangwa mucilage, gikoreshwa mu kumenya uko imbuto zeze n'ubushobozi bwazo bwo guhugutishwa.



Moisture meter:

Igikoresho gipima ubushuhe buri muri kawa iri mu ikawa y'amaganda (Parchment) cyangwa ikawa itonoye (green coffee), gifasha kumenya niba yumye neza kandi ishobora kubikwa neza.



pH meter:

Igikoresho gifatwa mu ntoki gipima ubukana bwa (pH) by'amazi y'umurenda, ibishishwa bya kawa cyangwa umurenda mu gihe cyo kuyitunganya.



Air-tight tank:

Ikigega gifunze neza kitinjiramo umwuka, gikoreshwa mu guhugutisha kawa mu buryo bwa butageramo umwuka (Anaerobic).



GrainPro bag:

Umufuka udacengerwa n'umwuka ukoreshwa mu guhugutisha kawa (Ibitumbwe cyangwa ikawa yatonowe) mu buryo bugabanya umwuka/oxygen kugira ngo uburyo bwa anaerobic bukore neza.



Uko n'Impamvu Dukoresha Ibi Bikoresho n'Imashini

Gukoresha ibikoresho bikwiye kuri buri cyiciro cyo gutunganya kawa bituma ubwiza bwa kawa buguma buhoraho, bigafasha gufata ibyemezo byiza kandi bikagabanya inenge. Ibikoresho bikurikira bikoreshwa mu gusuzuma neza ubuziranenge bw'imbutu za kawa (cherries), kugenzura ihugutisha (fermentation), no kurinda kawa mu gihe cyo kuyanika no kuyibika.

Cherry paddle:

IMPAMVU: Gikoreshwa mu kugenzura ubwiza bw'imbutu za kawa mu gihe cyo gutoranya.

INTAMBWE 1: Fata imbutu za kawa 100 udatoranyije mu mufuka uzishyire kurubaho (cherry paddle).

INTAMBWE 2: Hitamo ibara ry'imbutu zeze neza zemewe.

INTAMBWE 3: Bara umubare w'imbutu zeze muri izo 100 hanyuma ubone ijanisha.

INTAMBWE 4: Ijanisha ry'imbutu zeze zigomba kuba nibura riri hejuru ya 70%.

INTAMBWE 1



INTAMBWE 2



INTAMBWE 3&4



Brix meter:

IMPAMVU: Gikoreshwa mu kumenya uko imbutu zeze no kumenya ubushobozi bwo guhugutishwa hifashishijwe ingano y'isukari.

INTAMBWE 1: Koresha amazi ku regera imashini (igomba kuba iri kuri 0)

INTAMBWE 2: Fata imbutu za kawa 3 udatoranyije (Randomly).

INTAMBWE 3: Shyira umutobe uva mugitumbwe cya kawa kuri hagati kuri Brix meter.

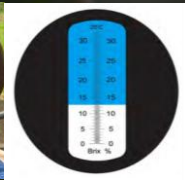
INTAMBWE 4: Soma igipimo kigaragara °Brix hanyuma ucyandike.

INTAMBWE 5: Koresha impuzandengo uhitamo uburyo bwo gutunganya n'igihe cyo guhugutisha.

INTAMBWE 1&2&3



INTAMBWE 4&5



Uko n'Impamvu Dukoresha Ibi Bikoresho n'Imashini

Gukoresha ibikoresho bikwiye kuri buri cyiciro cyo gutunganya kawa bituma ubwiza bwa kawa buguma buhoraho, bigafasha gufata ibyemezo byiza kandi bikagabanya inenge. Ibikoresho bikurikira bikoreshwa mu gusuzuma neza ubuziranenge bw'imbuto za kawa (cherries), kugenzura Ihugutisha, no kurinda kawa mu gihe cyo kuyanika no kuyibika.

Moisture meter:

IMPAMVU: Gikoreshwa mu kumenya ubuhehere bwa kawa kugira ngo hamenyekane niba yumye neza kandi ishobora kubikwa neza

INTAMBWE 1: Hitamo uburyo bwo gupima bitewe n'icyo uri gupima (parchment, dried cherry cyangwa green coffee).

INTAMBWE 2: Fata ingano nke ya kawa.

INTAMBWE 3: Pima ubuhehere ukoresheje moisture meter.

INTAMBWE 4: Soma ijanisha ry'ubuhehere hanyuma ucyandike.

INTAMBWE 5: Niba ubuhehere buri hejuru, komeza kuyanika. Niba buri mu rwego rwemewe, jya kuyibika.

INTAMBWE 1



INTAMBWE 2



INTAMBWE



pH meter:

IMPAMVU: Gikoreshwa mu kugenzura aside (pH) mu gihe cyo guhugutisha.

INTAMBWE 1: Reba niba igikoresho kiri kukigero kimwe n'amazi (kigomba kwerekana hafi ya pH 7.0).

INTAMBWE 2: Fata urugero rw'amazi ya ava mugihe cyo guhugutisha cyangwa umurenda.

INTAMBWE 3: Shyira umutwe wa pH meter muri ayo mazi.

INTAMBWE 4: Soma pH hanyuma uyandike.

INTAMBWE 5: Niba pH igabanutse cyane cyangwa vuba cyane, uhagarike cyangwa uhindure ihugutisha.

INTAMBWE 1



INTAMBWE 2&3



INTAMBWE 4&5



Uko n'Impamvu Dukoresha Ibi Bikoresho n'Imashini

Gukoresha ibikoresho bikwiye kuri buri cyiciro cyo gutunganya kawa bituma ubwiza bwa kawa buguma buhoraho, bigafasha gufata ibyemezo byiza kandi bikagabanya inenge. Ibikoresho bikurikira bikoreshwa mu gusuzuma neza ubuziranenge bw'imbuta za kawa (cherries), kugenzura ihugutishwa, no kurinda kawa mu gihe cyo kuyanika no kuyibika.

Air-tight tank:

IMPAMVU: Gikoreshwa mu kugenzura fermentation hagabanywa umwuka winjira kugira ngo habeho (anaerobic fermentation).

INTAMBWE 1: Sukura ikigega neza kugira ngo wirinde umwanda cyangwa ubwandu.

INTAMBWE 2: Shyira imbuto za kawa cyangwa ikawa y'amaganda mu kigega.

INTAMBWE 3: Funga ikigega neza kugira ngo umwuka utinjira.

INTAMBWE 4: Koresha S-hook urebe niba ihugutishwa ritageramo umwuka/anaerobic iri kuba.

INTAMBWE 5: Reka kawa ihugutishwe mu gihe cyateganyijwe.

INTAMBWE 6: Fungura ikigega ugenzure pH urebe niba ihugutishwa ryaragenze neza.

INTAMBWE 1

INTAMBWE 2

INTAMBWE 3&4&5 INTAMBWE 6



GrainPro bag:

IMPAMVU: Gikoreshwa mu kugenzura ihugutishwa no kurinda ubwiza bwa kawa hagabanywa umwuka.

INTAMBWE 1: Shyira imbuto za kawa cyangwa ikawa yamaganda mu mufuka wa GrainPro.

INTAMBWE 2: Kuramo umwuka uri mu mufuka hanyuma uwufunge neza.

INTAMBWE 3: Bika uwo mufuka ahantu hasukuye kandi hari igicucu.

INTAMBWE 4: Reka kawa ihugutishwe mu gihe cyateganyijwe.

INTAMBWE 5: Fungura umufuka ukomeze gutunganya cyangwa ugenzure ubwiza bwa kawa (impumuro, pH n'imiterere).

INTAMBWE 1

INTAMBWE 2

INTAMBWE 3&4

INTAMBWE 5



Ibyitabwaho

Gufata neza ubutaka

Igipima PH



Igipima ubushyuhe & ubuhehere



Amazi / Isuku



Gukurikirana Kawa



Ibipimo

- **pH:** Igipimo intungagihingwa zifatirwaho (5.0-6.0)
- **N:** Ingenzi kuri fotosenteze
- **P:** Imizi n'uruyange bizima
- **K:** Gukura kw'intete no kongera uburyohe muri rusange

- **Ibara:** Itanduye kandi abonerana
- **pH:** Iyo atanduye, pH yakagombye kuba hafi ya 7.0
- **Inshuro zo gusukura:** Buri munsi imashini igomba gusukurwa mbere yo gukoreshwa

- Koresha **igitabo n'udutapapuro** twerekana inkomoko
 - Aho ibitumbwe byaturutse
 - Uburyo byatunganyijwe
 - icyiciro n'uburemere
 - Tariki yakiriweho
 - Igihe guhugutisha no kwanika bimara

Impamvu



Ubutaka bwiza



Ibitumbwe
byiza



Uburyohe



Amazi mabi



Kawa yanduye
idafite uburyohe



Nta gukurikirana



Uburyo butanoze
bwo gutunganya
no kwamamaza
kawa

Uburyo butandukanye bwo gutunganya kawa

Izina	1 Kawa yogeje (Ihugutisha ntamazi)	2 Kawa Yogeje (Ihugutisha idatonoye)	3 itunganyije ntamazi	4 Itunganyije ntamazi Ihugutisha ahatagera umwuka	5 Yanitswe idatonoye	6 Ihugutishijwe idatonoye Ahatagera umwuka
Ifoto						
Imitere re	- Niyo imenyerewe - Biroroshye - Uburyohe bwumvikana	- Uburyohe buhebuje - Kawa isukuye muburyohe	- Iryoherewe biringaniye - Impumuro y'imbuto	- Ahatagera ogisijeni - Impumuro y'imizabibu y'umweri	- Nta guhera bikenewe - Iryoherewe, impumuro zitandukanye - Impumuro ya divayi	- Nta ogisijeni - Impumuro z'imbuto zahashyuhira
Ibyiciro	Gusarura	Gusarura	Gusarura	Gusarura	Gusarura	Gusarura
	Kujonjora	Kujonjora	Kujonjora	Kujonjora	Kujonjora	Kujonjora
	Iguhugutisha murubuto & kurerembesha	Guhugutisha ibitumbwe	Ihugutisha murubuto	Guhera		
	Guhera	Guhera	Guhera	Guhugutisha ahatagera umwuka		Guhugutisha ahatagera umwuka
	Guhugutisha ntamazi	Gutumbika mumazi				
	Koza & Gushyira mubyiciro	Koza & Gushyira mubyiciro				
	Kumutsa mbere yo kwanika	Kumutsa mbere yo kwanika			Kumutsa mber yo kwanika	
	Kwanika	Kwanika	Kwanika	Kwanika	Kwanika	Kwanika
	Kubika	Kubika	Kubika	Kubika	Kubika	Kubika

1. Kawa Yogeje neza– Ihugutisha ntamazi

Ibyiza
by'ubu
buryo

- Kugabanya ibyago byo kwandura ugereranyije nuburyo bwa gakondo.
- Igihe cyo kwanika ni gito
- Imiterere imwe kumwimerere wa kawa

Ibisabwa
byiza

1. Ingano y'isukari iri hejuru ya 18.0
2. Amazi meza na tanki yo guhugutishirizamo isukuye
3. Imashini itonora iregeye neza

Ibyiciro

1	2	3	4	5	6	7	8	9
Gusarura	Kujonjora	Guhugutisha murubuto* & Kurerembesha	Guhera	Guhugu tisha ntamazi	Koza & Gushyira mubyiciro	Kumutsa	Kwanika	Kubika
UMUNSI 1	Umunsi 1 cg 2	Umunsi 1 cg 2	Umunsi 1 cg 2	Umunsi 2-3	Umunsi 3	Umunsi 3-4	Umunsi 5- (Iminsi 20-25)	-
								

*Guhugutisha urubuto ni amahitamo

Intambwe 1: Gusarura

Intego: Ibitumbwe bihishije neza bifite isukari nyinshi n'icyanga bitanga uburyohe

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti kugira
ngo ibitumbwe
bigweho.



Koresha **imifuka**
isa neza
mugukusanya
ibitumbwe

Ingingo nyamukuru

① Gusarura **ibitumbwe bihishije neza gusa**



Kubera ko ibihishije neza biremera



Uburemere

70kg

100kg

Igiciro ku
muhinzi

700rwf

700rwf

Igiciro

49,000rwf

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda bitarenze
amasaha 8 nyuma yo
gusarura



④ Ntutore ibitumbwe
byagiye **hasi** mu
gukumira **ubwandu**



⑤ Shyira kawa mu
gicucu nyuma yo
gusoroma mu kurinda
ihigutisha ryihuse

1. Kawa yogeje neza- Ihugutisha ntamazi

Intambwe 2: Kijonjora – hagendewe ku ibara

Ikigamijwe: Gushyira kawa mubyiciro – Izihishije/ Izidahishije / Izarengeranye

Ibyitabwaho ①

70% bya kawa irahishije neza



Ibyitabwaho ②

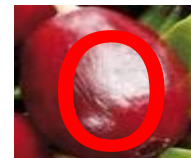
Ingano y'isukari: Hejuru ya 18.0



10.0



18.0



20.0

* 【Kubushake】 Intambwe 3: Guhugutisha ibitumbwe (Amasaha 24-36)

Ikigamijwe: Kongera impumuro ituruka mu guhugutisha urubuto rwa kawa

Ibikoresho

Koresha **indobo, Itanki** cyangwa **umufuka** uhugutisha mugihe cy'amasaha 24-36



Ibyo kwitaho

① Guhugutisha ibitumbwe ahagera umwuka (Umufuka cg itanki) **Mu gihe cy'amasaha 24-36.**



② Nyuma yo guhugutisha, ibitumbwe bigomba kuba bifite **impumuro y'inzoga cg arukoro.**



Intambwe ya 3: Kujonjora – Kujonjora hifashishijwe amazi

Intego: Kurerembesha kawa ifite ubusembwa

Ibikoresho

Koresha **itanki y'amazi cyangwa Indobo** urerembesha ibitumbwe



Ingingo nyamukuru

- ① Suzuma **amabara** y'umutuku/
umutuku wijimye ukoresheje intoki



- ② Suzuma **ireme wifashishije amazi**
* Ibitumbwe bitaremereye biraremba bigakurwamo



Ibyo kwitaho

95% bya kawa byerekana kawa “**ihishije neza**”



- ② Izarerembye: **munsi ya 10%**



Intambwe ya 3: Guhera

Intego: Gukuraho igishishwa habungabungwa intete za kawa

Ibikoreshwa



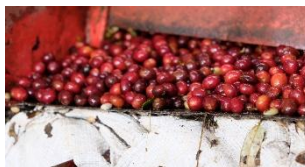
Gukoresha imashini itonora



Gukoresha itanki isukuye
ishyirwamo kawa y'amaganda

Ubusobanuro nyamukuru

① Koresha **amazi asukuye uhera.**
Wirinda ubwandure!



② **Kuregera imashini n'umuvuduko by'ibitumbwe**
hirindwa ko kawa yangirika .

③ **Koza imashini buri muni**
hirindwa ko zandura.



Ibyo kwitabwaho

Fata intete 100 za kawa ugenzure ko izangiritse ziri muni ya 10%, niba 10% zitatonowe cg zangiritse uregere imashini ihera.



Intambwe ya 4: Guhugutisha

Intego: Gukuraho umurenda wasigaye no kuzana uburyohe bwifuzwa

Ibikoresho



- Koresha itanki yo guhugutiramo ikorewe isuku.
- Koresha amazi asa neza ukuraho umurenda kuri kawa



- Koresha pH meter mugupima ko ihugutisha ryarangiye.

Ingingo nyamukuru

- ① **Ubushyuhe** bugira ingaruka kumuvuduko wo guhuguta. Igihe cyo guhugutisha cyakagombye kuba kigufi mugihe cy'izuba na kirekire mugihe cy'imvura. Ubusanzwe, bifata hagati y'amasaha **12-24**.
- ② **Gutwika kawa itonoye**: Itanki igomba kuba itwikiriye kugirango ihugutisha rikorwe ku rugero rumwe.

**Kurikirana uko ihugutisha rigenda umenya igihe rifata bitewe nikirere.*



Ibyo kwitabwaho

- ① **Impumuro**: Kwirinda impumuro y'umushari n'ya vinegre.



- ② **Imiterere**: Kugenzura niba umurenda witandukanyije na kawa



- ③ **pH**: Yakagombye kuba hagati ya **4.0-4.5** ihugutisha rirangiye

**Bishobora guhindurwa bitewe nicyo umukiriya yifuza*

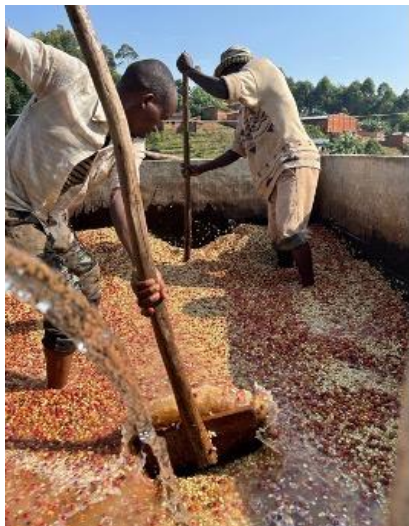


1. Ikawa Yogeje neza – Ihugutisha ntamazi

Intambwe ya 6: Koza no gushyira mu byiciro

Intego: gukuraho umurenda usigaye no gushyira kawa mu byiciro hagendewe ku ireme

Ibikoresho



Kwifashisha **rato y'igiti** mukoza kawa

Ingingo nyamukuru

① Genzura ko umurenda washizeho hagendewe **kumiterere(kawa zitakinyerera)**

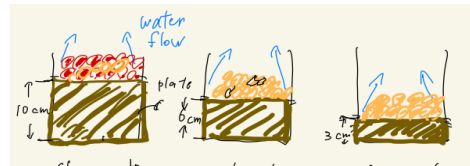
② **Girira isuku imiyoboro ikawa inyuramo ishyirwa mubyiciro** irindwe ubwandu

③ **shyira kawa mubyiciro** hatandukanywe (A1,A2, n'izarerembye) hifashishwa ubuhagarike bw'utubaho mu muyoboro



Ibyitabwaho

① Genzura ubwiza **hahindurwa ubuhagarike bw'utubaho** kuri buri cyiciro (10cm: A1 / 6cm: A2 / 3cm: izarerembye n'ibishishwa)



② **Hejuru ya 75%** zigomba kuba icyiciro A1



1. Ikawa Yogeje neza – Ihugutisha ntamazi

Intambwe ya 7: Kumutsa mbere yo kwanika (Amasaha 36-48)

Intego: Kugabanya ubuhehere buhoro buhoro (kumutsa buhoro buhoro)

Ibikoresho

Ubwankiro butwikiriye



Ingingo nyamukuru

① Kujonjorera **ahatwikiriye** hakurwamo kawa ifite ubusembwa mbere yo kujyanwa kwanikwa.

② Kujonjora **mumasaha 36-48** nyuma yo koza, Ikawa igoma kuruhuka mbere yo kujyanwa kwanikwa kuzuba

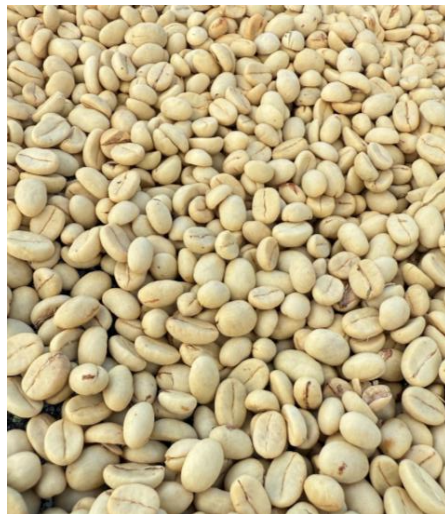
③ Reba **ibara rya kawa ifite ubusembwa** hakurwemo ikawa y’:

- Icyatsi** (Izitarera)
- Umweru** (Izarerembye)
- Izirabura/izariwe n’udusimba**
- Izamenetse/ izakomeretse/ Izidatonoye**



Ibyitabwaho

Izifite ubusembwa **zikurwamo 100%**



Intambwe ya 8: Kumisha

Intego: Kugabanya ubuhehere no gutegura kubika kawa neza

Ibikoresho



Shadineti irinda ubushyuhe bwinshi



Isashe irinda imvura n'urume



Moisture meter mukugenzura ubuhehere bwa kawa

*Moisture meter ibanza kuregera mbere yo gukoreshwa.

Ingingo nyamukuru

① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe guhera **11:00-15:00**.

② **Gucunga ubuhehere:** Pfuka parchment ukoresheje pulasitiki wirindwe imvura n'ikime. Umunsi umwe mu cyumweru, pfuka kawa neza yose.

③ **Kumira rimwe:** Korogosha kawa inshuro 4 ku muni kugira ngo yumishwe neza. Ubunini bw'urutonde rwa kawa: (Urugero: **3 cm**) y'ubunini.



Ibyitabwaho

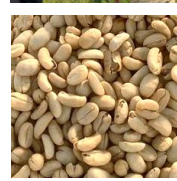
① **Ubuhehere:** Intego ya **10.5-11.5%** mu buryo bwiza. Kugenzura n'igipimo cy'ubuhehe kabiri kumunsi.



② **Igihe imara:** iminsi **20-25**. Kwanika bigomba kwitonderwa hirindwa kuma byihuse insigane.



③ **Ubushyuhe bwa kawa:** Ubushyuhe igihe cyose bwagombye kuba **munsi 35°C** hirindwa kwangirika k'urubuto rw'imbere (umutima wakawa).



Intego ya 9: Kubika

Intego: Kubika neza kawa kugira ngo zicuruzwe cyangwa zitonorwe

Ibikoresho

Paleta hirindwa kwangirika
(Urugero: Amazi, udukoko)



Ingingo nyamukuru

- ① **Kugenzura ubuhehere:** Kugumisha kawa kubuherere bwa **10-12%**

**Genzura ubuhehere MC igihe hashyushye cg hahehereye cyane*



- ② **Kohereza umwuka/guhungiza:**
Kugenzura **umwuka** winjira n'usohoka hirindwa urume n'ubuhehere buri hejuru



Ibyitabwaho

- ① **Ubushyuhe:**
Gukomeza ubushyuhe bwa **15–23°C** hirindwa kwangirika

- ② **Ubuhehere:**
Gukomeza ubuhehere kuri **50-70%** hirindwa uruhumbu

- ③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



2. Kawa Yogeje neza – Guhugutisha ibitumbwe

Ibyiza
by'ubu
buryo

- Byongera uburyohe bwinshi ugereranyishe n'ikawa yogeje isanzwe
- Igihe cyo kwanika kiba kigufi
- Kawa icyeye muburyohe ugereranyije nubundi buryo “Natural” cg “Honey”

Ibisabwa
byiza

1. Iyipimo cy'isukari kiri hejuru 16.0 hakuwemo “Izidahishije”cg “Izarengeje guhisha”
2. Gukoresha ahatagera umwuka mukurema uturemangingo ukoresha itanki cg imifuka
3. Amazi meza n'itanki isukuye
4. Imashini ihera iregeye neza

Ibyiciro

1	2	3	4	5	6	7	8	9
Gusarura	Kujonjora	Guhugutisha Ahatagera umwuka	Guhera	Gutumbika mumazi	Koza no Gushyira mubyiciro	Kumutsa	Kwanika	Kubika
UMUNSI 1		UMUNSI 1-5 (Amasaha 96)	UMUNSI 5	UMUNSI 5-6	UMUNSI 6	UMUNSI 6-8	UMUNSI 8- (Iminsi 20-25)	-
								

Intambwe 1: Gusarura

Intego: Ikawa ihishije ifite isukari nyinshi n'icyanga bitanga uburyohe

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti
itangire ikawa
yaguye hasi



Koresha **imifuka**
isa neza
mugukusanya
umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kubera ko ibihishije neza biremera



Ubureme
re

70kg

100kg

Igicro ku
muhinzi

700rwf/kg

700rwf/kg

Igicro

49,000rwf

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda bitarenze
amasaha 8 nyuma
yo gusarura



④ Ntutore kawa
yaguye **ku butaka**,
Kumira **ubwandu**



⑤ Shyira umusaruro
wa kawa **ahatagera**
izuba uyirinde ihuguta
ryihuse

2. Kawa yogeje neza- Guhugutisha ibitumbwe

Intambwe 2: Kujonjora– Kujonjora hegendewe ku ibara

Ikigamijwe: Gushyira kawa mubyiciro – Zihishije / Izidahishije/ Izarengeranye

Ibyitabwaho ①

70% bya kawa irahishije neza

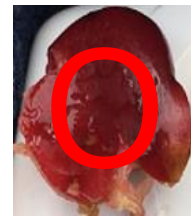


Ibyitabwaho ②

Ingano y'isukari : Hejuru ya 16.0
hakuwemo ibitumbwe byumye



10.0



16.0

Intambwe 3: Guhugutisha ahatagera umwuka

Intego: Kugera ku ihugutisha ahatagera umwuka mu haremwa ibyanga

Ibikoresho

Ikigega gifunze neza kugira ngo umwuka utinjira imbere

Cyangwa

GrainPro
(Umufuka w'ishashi)

Ingingo nyamukuru

- ① **Guhugutisha ahatagera umwuka:** Ikigega gifunze cyangwa Umufuka wa GrainPro hashyizwemo **amazi** hirindwa umwuka winjira.
- ② **Kugenzura ubushyuhe n'ubukonje:** Bika ahatwikiriye aho ubushyuhe n'ubukonje bidahindagurika.
- ③ **Igihe cy'ihuugutisha** Bitewe n'icyo isoko risaba igihe cyo guhutisha gishobora guhinduka.

**pH igomba kugenzurwa*

Ibyitabwaho

- ① **Impumuro:** Irinde impumura isharira cg imeze nk'iya vinegere.
- ② **Ibara:** Reba niba ibitumbwe byahinduye ibara.
- ③ **pH:** Igomba kuba hagati **4.0 – 4.2** ihugutisha rirangiye.

**Bishobora guhindurwa hagendewe ku cyifuzo cy'umukiriya*



Intambwe 4: Guhera

Intego: Gukuraho igishishwa udakomerekeje intete za kawa

Ibikoresho



Gukoresha **imashini**



Gukoresha **itanki y'amazi isa neza** ishyirwamo kawa itonoye

Ingingo nyamukuru

① Guhera ibitumbwe nyuma yo kubihugutisha



② **Kuregera imashini, ingano n'umuvuduko by'ibitumbwe** hirindwa ko kawa zangirika.



③ **Koza imashini buri muni** hirindwa ko zandura



Ibyo kwitabwaho

Fata intete 100 za kawa y'amaganda ugenzure niba izangiritse ziri muni ya 10% kandi niba imbuto zitatonowe neza ziri muni ya 10%. Bitabaye ibyo regera imashini ihera.



Intambwe 5: Gutumbika mu mazi

Intego: Gukuraho Umurenda

Ibikoresho



- Koresha **itanki** cg umufuka wa **Grain Pro** utumbika kawa y'amaganda mu mazi.
- Koresha amazi asukuye hakurwaho umurenda.

Ingingo nyamukuru

Koroshya no gukuraho umurenda byoroshye:

Ubushyuhe bugira ingaruka kumuvuduko wo guhuguta. Bishobora kuba igihe kigufi mu bihe by'ubushyuhe na kirekire mugihe cy'imvura. Mubusanzwe, Bifata amasaha **24**. Kugabanya ubusharire, bitanga igikombe cya kawa gisukure mu buryohe kandi bworoshye mu kanwa.



Ibyitabwaho

① **Impumuro:**

Irinde impumuro isharira cg ya Vinegere



② **Imiterere:**

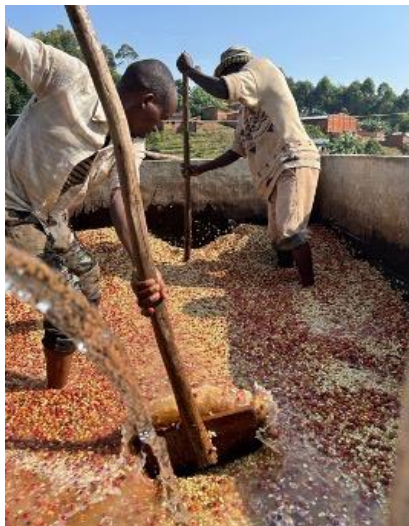
Kugenzura niba umurenda witandukanyije na kawa.



Icyiciro cya 6: Koza no gushyira mubyiciro

Intego: koza umurenda usigaye no gushyira mubyiciro hagendewe ku ireme ryakawa

Ibikoresho



Kwifashisha **rato y'igiti** mukoza kawa

Ingingo nyamukuru

① Genzura ko umurenda washizeho hagendewe **kumiterere(kawa zitakinyerera)**

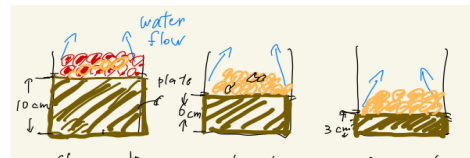
② **Girira isuku imiyoboro ikawa inyuramo ishyirwa mubyiciro** irindwe ubwandu

③ **shyira kawa mubyiciro** hatandukanywe (A1,A2, n'izarerembye) hifashwa ubuhagarike bw'utubaho mu muyoboro



Ibyitabwaho

① Kugenzura ubwiza **hahindurwa ubuhagarike bw'utubaho** kuri buri cyiciro (10cm: A1 / 6cm: A2 / 3cm: izarerembye n'ibishishwa)



② **Hejuru ya 75%** zigomba kuba icyiciro A1



2. Kawa Yogeje neza – guhugutisha ibitumbwe

Icyiciro 7: Kumisha Mbere yo kwanika (Amasaha 36-48)

Intego: Gukuramo kawa ifite ubusembwa no kugabanya ubuhehere buhoro

Ibikoresho

Ubwankiro butwikire



Ingingo nyamukuru

① Kujonjorera **ahatwikiriye** mbere yo kuma.

② Kujonjora **mu masaha 36-48** nyuma yo koza, kawa igombwa kuruhuka mbere yo kwanikwa ku zuba.

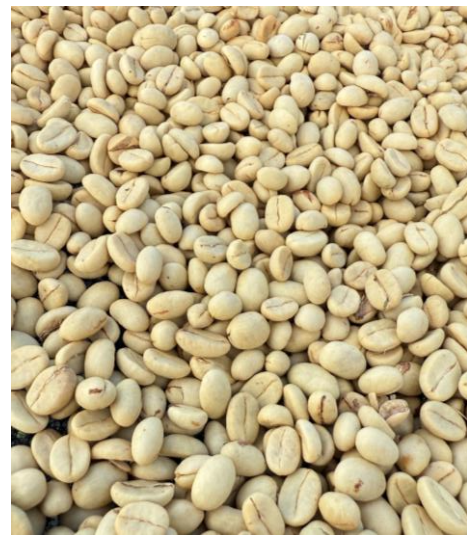
③ Reba **ibara rya kawa ifite ubusembwa** hakurwemo ikawa y’:

- **Icyatsi** (Izitarera)
- **Umweru** (Izarerembye)
- **Izirabura/izariwe n’udusimba**
- **Izamenetse/ izakomeretse/ Izidatonoye**



Ibyitabwaho

Izifite ubusembwa **zikurwamo 100%**



Intambwe ya 8: Kumisha

Intego: Kugabanya ubuhehere no gutegura kubika kawa neza

Ibikoresho



shadineti
irinda
ubushyuhe
bwinshi



isashe irinda
imvura
n'urume



Moisture meter
mukugenzura
ubuhehere bwa
kawa

*Moisture meter ibanze kuregerwa.

Ingingo nyamukuru

① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe hagati ya 11:00-15:00. **Hindura bitewe n'imiterere y'ikirere*

② **Gucunga ubuhehere:** Pfuka parchment ukoresheje pulasitiki kugira ngo irindwe imvura n'ikime.

③ **Kuruhuka:** Umunsi umwe mu cyumweru, pfuka kawa neza yose.

④ **Kumira rimwe:** Korogosha kawa inshuro 4 ku munsi kugira ngo yumishwe neza. Ubunini bw'urutonde rwa kawa: **3 cm** (icyumweru cya mbere) → nyuma ugende wongera.



Ibyitabwaho

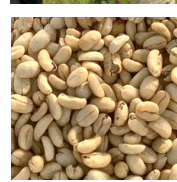
① **Ubuhehere:** Intego ya **10.5-11.5%** mu buryo bwiza. Kugenzura n'igipimo cy'ubuhehe kabiri kumunsi.



② **Igihe imara:** hafi iminsi **20-25**. Kwanika bigomba kwitonderwa hirindwa kuma byihuse insigane.



③ **Ubushyuhe bwa kawa:** Ubushyuhe igihe cyose bwagombye kuba **munsi 35°C** hirindwa kwangirika k'urubuto rw'imbere (umutima wakawa).



Intambwe ya 9: Kubika

Intego: Kubika neza kawa kugira ngo zicuruzwe cyangwa zitonorwe

Ibikoresho

Paleta hirindwa kwangirika
(Urugero: Amazi, Udukoko)



Ingingo nyamukuru

① **Kugenzura ubuhehere:** Kugumisha kawa kububore bwa **10-12%**



② **Kohereza umwuka/guhungiza:**
Kugenzura **umwuka winjira n'usohoka** hirindwa urume n'ubuhehere buri hejuru



Ibyitabwaho

① **Ubushyuhe:**
Kugumana ubushyuhe bwa **15–23°C** hirindwa kwangirika



② **Ubuhehere:**
Kugumana ubuhehere bwa **50–70%** hirindwa uruhumbu



③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



3. Kawa itunganyijwe nta mazi

Ibyiza
by'ubu
buryo

- Hakoresha amazi macye ugereranyije n'uburyo bwo Koza kawa
- Kugabanya ibyatera ubusembwa ugereranyije nuburyo bwa gakondo
- Itanga impumuro yihariye y'imbuta

Ibisabwa
byiza

1. Isukari iri hejuru ya 18.0
2. Kugenzura neza uburyo bwo kwanikana umurenda, cyane cyane mu minsi yambere
3. Kwirinda ubusembwa buturutse ku guhugutisha no kuma insigane

1

Gusarura

2

Kujonjora

3

Guhugutisha
(Ibitumbwe)

4

Guhera

5

Kwanika

6

Kubika

UMUNSI 1

UMUNSI 1- 2

UMUNSI 2

UMUNSI 2
(Iminsi 25-30)

-

Ibyiciro



Intambwe 1: Gusarura

Intego: Ikawa ihishije ifite isukari nyinshi n'icyanga bitanga impumuro

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti
itangire ikawa
yaguye hasi



Koresha **imifuka**
isa neza
mugukusanya
umusaruro

Ingingo nyamukuru

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



Ubureme
re

70kg

Igicro ku
muhinzi

700rwf/kg

Igicro

49,000rwf



100kg

700rwf/kg

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda **bitarenze**
amasaha amasaha 8
nyuma yo gusarura



④ Ntutore kawa
yaguye **ku butaka,**
Kumira **ubwandu**



⑤ Shyira umusaruro
wa kawa **ahatagera**
izuba uyirinde ihuguta
ryihuse

3. Kawa itunganyijwe nta mazi

Intambwe 2: Kujonjora – Kujonjora hagendewe ku ibara

Ikigamijwe: Gushyira kawa mubyiciro – Zihishije/ Izidahishije/ izarengeranye

Ibyitabwaho ①

70% bya kawa **irahishije neza**

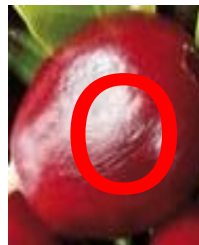


Ibyitabwaho ②

Ingano y'isukari: hejuru ya 18.0



10.0



18.0

Intambwe 3: Guhugutisha ibitumbwe (Amasaha 12-18)

Ikigamijwe: Kongera impumuro ituruka mu guhugutisha urubuto rwa kawa

Ibikoresho

Koresha **indobo, Itanki** cyangwa **umufuka** uhugutisha mugihe cy'amasaha **12-18** (Kugera mu gitondo gikurikira)



Ibyo kwitaho

① Guhugutisha ibitumbwe ahagera umwuka (Umufuka cg itanki) **mu gihe cy'amasaha 12-18** (Kugera mu gitondo gikurikira)



② Nyuma yo guhugutisha, ibitumbwe bigomba kuba bifite **impumuro y'inzoga**.



Intamwe 4: Guhera

Intego: Gukuraho igishishwa hadakuweho umurenda

Ibikoresho

Gukoresha **imashini ihera**
ikoresha amazi macye



Ingingo nyamukuru

- ① Imashini ihera yakabaye **ikoresha amazi macye** kugira ngo idakuraho umurenda
- ② **Kuregera imashini, ingano y'ibitumbwe n'umuvuduko** hirindwa ko kawa yangirika.
- ③ **Koza imashini burimunsi** hirindwa kwanduza kawa



Ibyitabwaho

Fata intete 100 za Kawa ugenzure niba izangiritse ziri munsi ya 10% kandi niba imbuto zitatonowe neza ziri munsi ya 10%

+

Kandi genzura kawa y'amaganda nyuma yo gutonora kugira ngo urebe ko umurenda itatakaye cyane. Uregere imashini mugihe Biri hejuru ya 10%



Intambwe ya 5: Kwanika

Intego: Kugabanya ubuhehere hadakuweho umurenda utanga impumuro

Ibikoresho



shadineti n'isashe
hirindwa
ubushyuhe
bwinshi, imvura
n'urume



Rato y'igiti
muguhindura
kawa
hadakuweho
umurenda



Moisture meter
mukugenzura
ubuhehere bwa
kawa

*Moisture meter ibanze ikaliburwa.

Ingingo z'ingenzi

- ① **Koresha shedineti**
hirinda ubushyuhe
bukabije hagati ya **11:00-15:00**. *Byahinduka bitewe
nimiterere y'ikirere.
- ② **Kwanika ku zuba umunsi**
1-2 uhagarika ihugutisha
isukari iguma kuri kawa.
- ③ **Kuruhuka:** Umunsi
umwe mu cyumweru,
pfuka Kawa neza yose.



- ④ **kumira rimwe:**
Korogosha kawa inshuro 3
ku munsu ukoreshaje rake.
Ubunini bw'urutonde rwa
kawa: 3 cm (mu minsi 2 ya
mbere) → wongere nyuma.
*Irinde gukorogosha cyane.



Ibyitabwaho

- ① **Ubuhehere:**
Hagamijwe **10.5 -11.5%**
mubihe byiza. Pima
ubuhehere 2 kumunsi.
- ② **Igihe:** Byibuze **iminsi 25-30**. kwanika bigomba
gukurikiranwa
hakirindwakuma vuba kandi
insigane.
- ③ **Ubushyuhe bwa kawa:**
Ubushyuhe bwakagombye
guhora **munsi ya 35 °C**
muminsi 1-2 hirindwa
kwangiza umutima wa kawa.



Icyiciro 5: Kubika

Intego: Kugumisha kawa kukigero kimwe nyuma yo kwanika hagamijwe gucuruza no Guhera

Ibikoresho

Paleta hirindwa kwangirika
(Urugero: Amazi, Udukoko)



Ingingo nyamukuru

① **Kugenzura ubuhehere:** Kugumisha kawa kububore bwa **10-12%**



② **Kohereza umwuka/guhungiza:**
Kugenzura **umwuka winjira n'usohoka** hirindwa urume n'ubuhehere bwo hejuru



Ibyitabwaho

① **Ubushyuhe:**
Gukomeza ubushyuhe bwa **15–23°C** hirindwa kwangirika



② **Ubuhehere:**
Gukomeza ubuhehere kuri **50–70%** hirindwa uruhumbu



③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



4. Kawa itunganyije ntamazi igahugutishwa ahatagera umwuka

Ibyiza
by'ubu
buryo

- Guhanga uburyohe n'impumuro byihariye kandi binyuranye, harimo icyanga cyumvikana n'impumuro z'imbuta.
- Kubyara uburyohe buhebuje budahinduka.

Ibisabwa
byiza

1. Igipimo cy'isukari hejuru ya 18.0
2. Bisaba ahatagera umwuka wa ogisijeni kugira ngo utunyabuzima dukanguke nko mu itanki cg imifuka ya GrainPro

1

Gusarura

2

Kijonjora

3

Guhera

4

Guhuguta
ahatagera
umwuka

5

Kwanika

6

Kubika

UMUNSI 1

Umunsi 1-9
(Amasaha 192)

Umunsi 10
(Iminsi 25-30)

-

Ibyiciro



4. Kawa itunganyije ntamazi igahugutishwa ahatagera umwuka

Intambwe ya 1: Gusarura

Intego: Ikawa ihishije ifite isukari nyinshi n'icyanga bitanga impumuro

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti
itangire ikawa
yaguye hasi



Koresha **imifuka**
isa neza
mugukusanya
umusaruro

Ingingo nyamukuru

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



Ubureme
re

70kg

100kg

Igiciro ku
muhinzi

700rwf/kg

700rwf/kg

Igiciro

49,000rwf

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda **mugihe**
cy'amasha 8 nyuma
yo gusarura



④ Ntutore kawa
yaguye **kubutaka**,
Kumira **ubwandu**



⑤ Shyira umusaruro
wa kawa **ahatagera**
izuba uyirinde ihuguta
ryihuse

4. Kawa itunganyije ntabwizi igahugutishwa ahatagera umwuka

Intambwe ya 2: Kujonjora – Kujonjora hagendewe ku ibara

Intego: Gushyira kawa mubyciro – Izihishije/ izidahishije/ izarengeranye

Ibyitabwaho ①

70% ya kawa **ihishije neza**

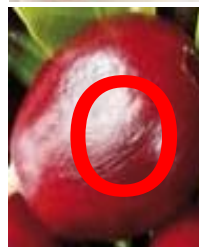


Ibyitabwaho ②

Isukari: Hejuru ya 18.0



10.0



18.0

Intambwe ya 3: Guhera

Intego: Gukuraho igishishwa hadakuweho umurenda

Ibikoresho

Gukoresha **imashini ihera**
(ikoresha amazi macye)



Ingingo nyamukuru

① Imashini ihera
yakabaye **ikoresha**
amazi macye
idakuraho umurenda



② **Kuregera**
imashini, ingano
y'ibitumbwe
n'umuvuduko
hirindwa ko kawa
yangirika.



③ **Koza imashini**
burimunsi hirindwa
kwanduza kawa



Ibyitabwaho

Fata intete za kawa 100 ugenzure
niba izangiritse ziri munsi ya 10%
kandi niba imbuto zitatonowe neza
ziri munsi ya 10%.

+

Genzura kawa nyuma yo gusatura
kugira ngo urebe ko umurenda
utatakaye cyane. Uregere imashini
igihe ari hejuru ya 10%



4. Kawa itunganyije ntamazi igahugutishwa ahatagera umwuka

Intambwe ya 4: Guhugutisha ntamwuka wa oxigene

Intego: Kugera ku ihuguta ntamwuka kugira ngo haboneke kumpumuro zigamijwe

Ibikoresho



Tanki ifunze neza
kugirango
umwuka
utinjira imbere



Cyangwa

Isashe ya GrainPro

Ingingo nyamukuru

① **Ahatagera umwuka:**

Tanki ifunze neza cg
umufuka wa GrainPro
bigomba kuba bifunze neza
hirindwa ko umwuka
winjiramo.



② **kugenzura ubushyuhe**

n'ubuhehere: Tereka
ahatwikiriye aho ubushyuhe
n'ubuhehere bidahindagurika.



③ **Igihe guhuguta bimara:**

Byakagombye kugenzurwa.
Igihe cyagenywe ni amasaha
192 (iminsi 8) bitewe
nibikenewe kw'isoko



Ibyitabwaho

① **Impumuro:**

kwirinda
impumuro
y'umushari/
vinegre.



② **Ibara:** Kureba
ko kawa
yahinduye ibara



③ **pH:** yagombye
kuba hagati ya
4.0 – 5.0 nyumya
yo guhuguta
**Ariko byahinduka
bitewe n' icyo
umuguzi yifuza*



4. Kawa itunganyije ntamazi igahugutishwa ahatagera umwuka

Intambwe ya 5: Kwanika

Intego: Kugabanya ubuhehere hadakuweho umurenda utanga uburyohe

Ibikoresho



shadineti n'isashe hirindwa ubushyuhe bw'inshi, imvura n'urume



Rato y'igiti muguhindura kawa hadakuweho umurenda



Igipima ubuhehere (moisture meter)

*Moisture meter ibanze ikaliburwa.

Ingingo z'ingenzi

① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe hagati ya 11:00-15:00 **Byahinduka bitewe n'imiterere y'ikirere*



② **Gucunga ubuhehere:** Pfuka kawa ukoresheje pulasitiki kugira ngo irindwe imvura n'ikime.



③ **Kuruhuka:** Umunsi umwe mu cyumweru, pfuka parchment neza yose

④ **Kumira rimwe:** Korogosha kawa inshuro 4 ku munsi kugira ngo yumishwe neza. Ubunini bw'urutonde rwa kawa: 3cm (icyumweru cya mbere) → wongere nyuma.



Ibyitabwaho

① **Ubushyuhe:** Hagamijwe **10.5-11.5%** mubihe byiza. Pima ubuhehere 2 kumunsi.



② **Igihe:** Byibuze **iminsi 25-30**. kwanika bigomba gukurikirana hirindwa kuma vuba kandi insigane.



③ **Ubuhehere bwa kawa:** Ubushyuhe bwakagombye guhora **munsi ya 35 °C** hirindwa kwangiza kawa.



Intambwe 6: Kubika

Ikigenderewe: Kugumisha kawa kukigero kimwe nyuma yo kwanika hagamijwe gucuruza no Gutonora

Ibikoresho

Paleta hirindwa kwangirika
(Urugero: Amazi, udukoko)



Ingingo nyamukuru

- ① **Kugenzura ubuhehere:** Kugumisha kawa kubwume bwa **10-12%** **genzura igipimo cy'ubuhehere niba ububiko bushyushye cyangwa bukonje cyane.*



- ② **Kohereza umwuka/guhungiza:**
Kugenzura **umwuka winjira n'usohoka** hirindwa urume n'ubuhehere bwo hejuru



Ibyitabwaho

- ① **Ubushyuhe:**
Gukomeza ubushyuhe bwa **15–23°C** hirindwa kwangirika
- ② **Ubuhehere:**
Gukomeza ubuhehere kuri **50–70%** hirindwa uruhumbu
- ③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



5. Kawa yanikwa idatonoye (Natirere)

Ibyiza
by'ubu
buryo

- Itanga amahirwe yo kugira icyanga n'uburyohe butandukanye.
- Ntamazi akenewe, bituma iberana n'uturere dufite amazi macye.
- Ntabikoresho byinshi bikenerwa.

Ibisabwa
byiza

1. Isukari iri hejuru ya 18.0
2. Kugira ibitanda byo kwanikaho (igihe cyo kwanika ni kirekire)
3. Gusukura no kujonjora kawa mbere yo kuyanika

1

Gusarura

2

Kujonjora

3

Kumutsa

4

Kwanika

5

Kubika

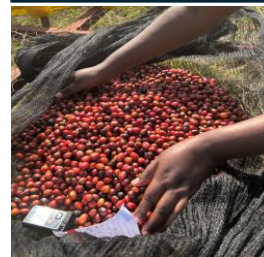
UMUNSI 1

UMUNSI 1-2

UMUNSI 3
(kugera iminsi 35-40)

-

Ibyiciro



5. Kawa yanitse idatonoye (Natirere)

Intambwe 1: Gusarura

Intego: Ikawa ihishije ifite isukari nyinshi n'icyanga bitanga ibyanga

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti
itangire ikawa
yaguye hasi



Koresha **imifuka**
isa neza
mugukusanya
umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



Ubureme
re

70kg

100kg

Igicro ku
muhanzi

700rwf/kg

700rwf/kg

Igicro

49,000rwf

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda **bitarenze**
amasaha 8 nyuma
yo gusarura



④ Ntutore kawa
yaguye **kubutaka**,
Kumira **ubwandu**



⑤ Shyira umusaruro
wa kawa **ahatagera**
izuba uyirinde ihuguta
ryihuse

5. Kawa yanitse idatonoye (Natirere)

Intambwe ya 2: Kujonjora – Kujonjora kawa hagendewe ku ibara

Intego: Gushyira kawa mubyiciro – Izihishije/ izidahishije/ izarengeranye

Ibyitabwaho ①

70% ya kawa **ihishije neza**



Ibyitabwaho ②

Isukari: Hejuru ya 18.0



5. Kawa yanitse idatonoye (Natirere)

Intambwe 3: Kumutsa (Amasaha 36-48)

Intego: Gukuramo ibitumbwe bifite inenge

Ibikoresho

Ibitanda bya kawa
biri ahatwikiriye



Ingingo nyamukuru

① Gushyira ibitumbwe ahatwikiriye hagamijwe gutora (Izidahishije, lyarengeje urugero, Izariwe n'udukoko), Ku ngano ya **3 cm** ku gitanda.

② **Gutora**, gutegereza amasaha **36-48**. ibitumbwe biguma kubitanda mbere yo kujya kuzuba

③ Guhitamo amaraba y'ibitumbwe agomba gutorwa:

-Ibidahishije

-Izarengeje igihe



Ibyitabwaho

Inenge zavanywemo 100%



5. Kawa yanitse idatonoye (Natirere)

Intambwe ya : Kwanika

Purpose: Guhugutira mugishishwa hagamijwe icyanga cyihariye

Ibikoresho



shadineti
hirindwa



isashe
hirindwa
imvura
n'urume



Moisture meter
mukumenya
ubuhehere
bwa kawa

*Moisture meter ibanze kuyigerwa.

Ingingo nyamukuru

① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe hagati ya 11:00-15:00 *Byahinduka bitewe n'imiterere y'ikirere.

② **Gucunga ubuhehere:** Pfuka kawa ukoresheje pulasitiki kugira ngo irindwe imvura n'ikime.

③ **Kuruhuka:** Umunsi umwe mu cyumweru, pfuka parchment neza yose

④ **Kumira rimwe:** Korogosha inshuro 5-6 ku munsi mu minsi 2-3. Nyuma yaho, inshuro 3 ku munsi. Kwanika kungano ya 3cm iminsi 2-3, nyuma byiyongera.



Ibyitabwaho

① **Ubuhehere bwa kawa:** Intego 11.0-12.0% mubihe byiza. Gupima ubuhehere 2 kumunsi.



② **Igihe kwanika bimara:** Ubusanze, ni iminsi 35-40. Kwanika bigomba gukurikiranwa hirindwa kuma vuba vuba insigane.



③ **Ubushyuhe bwa kawa:** ntibugomba kurenga 25°C kugeza ubuhehere bugeze kuri 35%, nyuma yaho ntiburenze munsi 40°C.



Icyiciro 5: Kubika

Ikigenderewe: Kugumisha kawa kukigero kimwe nyuma yo kwanika hagamijwe gucuruza no Gutonora

Ibikoresho

Palet hirindwa kwangirika
(Urugero: Amazi, Udukoko)



Ingingo nyamukuru

① **Kugenzura ubuhehere:** Kugumisha kawa kubuhehere bwa **10-12%**



② **Kohereza umwuka/guhungiza:** Kugenzura **umwuka winjira n'usohoka** hirindwa urume n'ubuhehere bwo hejuru



Ibyitabwaho

① **Ubushyuhe:** Gukomeza ubushyuhe bwa **15-23°C** hirindwa kwangirika



② **Ubuhehere:** Gukomeza ubuhehere kuri **50-70%** hirindwa uruhumbu



③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 3** kugira ngo ubushuho bwayo bugume ku gipimo gihamye.



6. Kawa yanikwa idatonowe nyuma yo guhugutishwa ahatagera umwuka

Ibyiza
by'ubu
buryo

- Kurema uburyohe n'impumuro byihari kandi binyuranye, harimo icyanga cyumvikana n'impumuro y'imbutu.
- Gutanga ubwiza budahindagurika bushingiye ku cyanga.
- Ikunzwe nabashaka ubwiza buhebuje, n'udushya kuri kawa y'icyanga kirenze ikimenyerewe.

Ibisabwa
byiza

1. Ikigero cy'isukari kiri hejuru >18.0
2. Hakenerwa ahatagera umwuka nka tanki cg umufuka wa pulasitiki wa Grain Pro bifunze neza bituma utunyabuzima dukanguka

1

Gusarura

2

Kujonjora

3

Guhugutira
ahatagera
umwuka

4

Kwanika

5

Kubika

UMUNSI 1

UMUNSI 1-4
(Amasaha 72)

UMUNSI 5-
(Iminsi 35-40)

-

Steps



Intambwe 1: Gusarura

Intego: Ikawa ihishije ifite isukari nyinshi n'icyanga bitanga impumuro

Ibikoresho bikenewe



Koresha
igisarurirwamo
mugihe cyo
gusarura kawa



Sasa **shitingi**
munsi y'igiti
itangire ikawa
yaguye hasi



Koresha **imifuka**
isa neza
mugukusanya
umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



Uburemere

70kg

100kg

Igiciro ku
muhinzi

700rwf/kg

700rwf/kg

Igiciro

49,000rwf

70,000rwf



② Tangira gusarura
mugitondo.



③ Geza kawa
kuruganda **mu gihe**
cyamaha 8 nyuma
yo gusarura



④ Ntutore kawa
yaguye **kubutaka**,
Kumira **ubwandu**



⑤ Shyira umusaruro
wa kawa **ahatagera**
izuba uyirinde ihuguta
ryihuse

6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Intambwe ya 2: Kujonjora – Kujonjora kawa hagendewe ku ibara

Intego: Gushyira kawa mubyciro – Izihishije/ izidahishije/ izarengeranye

Ibyitabwaho ①

70% ya kawa **ihishije neza**

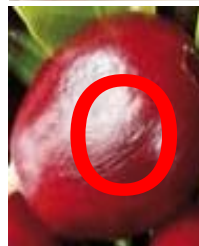


Ibyitabwaho ②

Isukari: Hejuru ya 18.0



10.0



18.0

6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Intamwe ya 3: Guhugutisha ntamwuka wa oxigene

Intego: Kugera ku ihuguta ntamwuka kugira hagerwe kumpumuro zigamijwe

Ibikoresho



Tanki ifunze neza kugira umwuka utinjira imbere

Cyangwa



Umufuka wa GrainPro

Ingingo nyamukuru

① **Ahatagera umwuka:**

Tanki ifunze neza cg umufuka wa pulasitike **bigomba kuba bifunze neza** hirindwa ko umwuka winjiramo.



② **kugenzura ubushyuhe**

n'ubuhehere: kubika ahatwikiriye aho ubushyuhe n'ubuhehere bidahindagurika.



③ **Igihe guhuguta**

bimara: Gihinduka bitewe n'isoko rya kawa ya anaerobic natural risaba.

**Hitabwaho cyane ingano ya PH*



Ibyitabwaho

① **Impumuro:**

kwirinda impumuro y'umushari cg vinegere.



② **Ibara:** Kureba ko kawa yahinduye ibara

③ **pH:** yagombye kuba hagati ya **4.0-5.0** nyumya yo guhuguta

**Bishobora guhinduka bitewe nicyo umuguzi yifuza*



Intamwe ya 4: Kwanika

Intego: Kukora icyanga cy'imbuto no kugabanya ubuhehere bwa kawa

Ibikoresho



shadineti
hirindwa
ubushyuhe
bwinshi



isashe
hirindwa
imvura
n'urume



Moisture meter
mukumenya
ubuhehere
bwa kawa

*Moisture meter ibanze ikaliburwa.

Ingingo nyamukuru

- ① Ku munsu wa mbere, hakenewe izuba rikomeye kugira ngo ihigutisha rihagarare, nta zuba hongerwa igihe cyo gufungura no kwanikiraho.
- ② **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda *byahinduka bitewe n'imiterere y'ikirere
- ③ **Gucunga ubukonje:** Gutwikira ibitumbwe ukoresheje ishashi hirindwa imvura cyangwa ikime.
- ④ **Kuruhuka** Twikira ibitumbwe byibura rimwe mu cyumweru byose neza.
- ⑤ **Kumira rimwe:** Korogosha inshuro 5–6 ku **munsu** mu minsi 2–3. Nyuma yaho, inshuro 3 ku **munsu**. Kwanika kungano ya 3 cm iminsi 2-3, nyuma-> nyuma wongere.



Ibyitabwaho

- ① **Ubuhehere:** bugomba kugezwa kuri **11-12%**. Pima ubuhehere 2 kumunsu.

- ② **Igihe kwanika bimara:** Ubusanzwe, iminsi **35-40**. Igikorwa cyo kwanika kigomba kwitonderwa hirindwa kubabuka cg kutuma kimwe.

- ③ **Ubushyuhe bwa kawa:** Bwakagombye kuba **munsu ya 40°C**.



6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Icyiciro 5: Kubika

Ikigenderewe: Kugumana ubwume budahinduka nyuma yo kwanika hagamijwe gucuruza no Gutonora

Ibikoresho

Palette hirindwa kwangirika
(Urugero: Amazi, Udukoko)



Ingingo nyamukuru

① **Kugenzura ubuhehere:** Kugumisha kawa kubuhehere bwa **10-12%**. *Genzura ibipimo by'ubuhehere igihe mu bubiko hakonje cg hashyushye cyane.*



② **Kohereza umwuka/guhungiza:** Kugenzura **umwuka** winjira n'usohoka hirindwa urume n'ubuhehere bwo hejuru



Ibyitabwaho

① **Ubushyuhe:** Gukomeza ubushyuhe bwa **15-23°C** hirindwa kwangirika



② **Ubuhehere:** Gukomeza ubuhehere kuri **50-70%** hirindwa uruhumbu



③ **Kuruhuka:** Kawa igomba kubikwa hafi **amezi 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



Inyongera A: Urugero rw'ifishi ikoresheha mu gucunga lot ya kawa

Lot management sheet

CWS: _____ Name: _____

-Variety: _____

-Receiving date: dd/mm/yyyy

-Receiving cherry weight : _____ kg

-Process: FW / HN / NR / Other (_____)

-Certificate: _____

-Lot ID: _____

-Main production area: _____

-Fermentation: _____ hours (from ____:____ to ____:____)

-Soaking: _____ hours (from ____:____ to ____:____)

-Grade: A1 / A2 / A3 / Triage

-Start drying: dd/mm/yyyy ____:____

-End drying: dd/mm/yyyy ____:____

-Moisture content : _____ %

-Final parchment weight: _____ kg

CWS: izina rya Coffee Washing Station yakiriye kandi itunganya iyo lot ya kawa.

Receiving date: itariki nyayo imbuto za kawa zagejejwe kuri Coffee Washing Station.

Process method: uburyo bwo gutunganya bwakoreshejwe kuri iyo lot ya kawa (nka Fully Washed, Honey, Natural cyangwa ubundi buryo bwagenwe).

Certificate: icyemezo cy'ubuziranenge iyo lot ya kawa ifite niba gihari (nka Organic, Fairtrade, cyangwa Rainforest Alliance).

Lot name: izina cyangwa kode yihariye ihabwa lot ya kawa kugira ngo ikurikiranwe neza.

Main area: aho imbuto za kawa zaturutse cyane, nko mu murenge, akagari cyangwa umudugudu zasaruwemo.

Fermentation: igihe cyose kawa yamaze iboragizwa (mu masaha), harimo igihe yatangiye n'igihe yarangiye.

Soaking: igihe kawa yamaze mu mazi meza nyuma ya fermentation, harimo igihe yatangiye n'igihe yarangiye.

Drying start/end date: itariki kumisha byatangiriye n'itariki byarangiyeye, bigaragaza igihe cyose cyo kumisha.

Moisture content: igipimo cy'ubushyuhe (%) bwa nyuma bwa kawa nyuma yo kumishwa, gipimwa mbere yo kuyibika cyangwa kuyitonora.