

JICA CUP2 Project

IMFASHANYIGISHO GUTUNGANYA KAWA

Imfashanyigisho y'uruganda
rutunganya kawa



Ibirimo

Iyi mfashanyigisho isobanura uburyo

6 butandukanye bwo gutunganya kawa:

1. Kawa yogeje (Ihugutishijwe ntamazi)
2. Kawa yogeje (Ihugutishijwe asaha 48 mbere yo gutonorwa)
3. Kawa itonowe ihugutishirijwe ahagera umwuka ikaniwa itogeje
4. Kawa itonoye ihugutishirijwe ahatagera umwuka ikanikwa itogeje
5. Kawa yanitswe idatonoye
6. Kawa ihugutishirijwe ahatagera umwuka ikanikwa idatonoye

Ubusobanuro bw'inyito

Gukurikirana inkomoko:

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

Ihugutisha murubuto:

Uburyo bwo gutunganya kawa aho ihuguta idakuweho igishishwa, bigafasha utunyabuzima gukora mu rubuto rwose.

Ihugutisha ntamazi:

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

Ihugutisha ntamwuka:

Ahatagera umwukam wa ogisijeni.

Ihugutisha ahari umwuka:

Ahari ogisijeni.

Akabaho k'ibitumbwe(Cherry paddle):

Igikoresho kifashishwa mu kugenzura igipimo cyo guhisha cyangwa kureremba kw'ibitumbwe bya kawa.

Kubabuka:

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

Brix:

Igipimo cy'ingano y'isukari iri mubisukika, kibarwa nk'ijanisha kuburemere.

pH:

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

Azoti (N):

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

P (Phosphorus):

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.



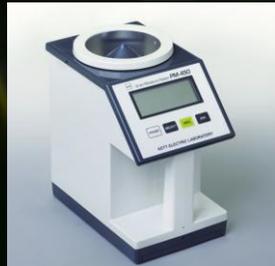
Brix meter:

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 ukoreshe 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 imbuto 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 imbuto zeze no kumenya ubushobozi bwo guhugutishwa hifashishijwe ingano y'isukari.

INTAMBWE 1: Fata imbuto za kawa 3 udatoranyije (Randomly).

INTAMBWE 2: Shyira umutobe uva mugitumbwe cya kawa kuri hagati kuri Brix meter.

INTAMBWE 3: Soma igipimo kigaragara °Brix hanyuma ucyandike.

INTAMBWE 4: Koresha impuzandengo uhitamo uburyo bwo gutunganya n'igihe cyo guhugutisha.

INTAMBWE 1&2



INTAMBWE 3&4



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 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.

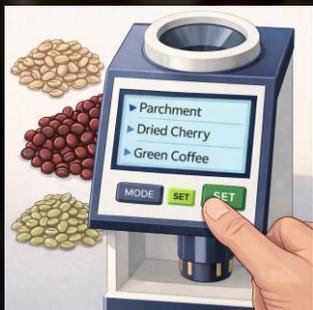
INTAMBWE 3: Pima ubuhehere ukoresheje moisture meter.

INTAMBWE 4: Soma ijanisha ry'ubuhehere hanyuma ucyandike.

INTAMBWE 5: Niba ubuhehere buri hejuru, komeza kuyanika.

Niba buri mu rwego rwemewe, jya kuyibika.

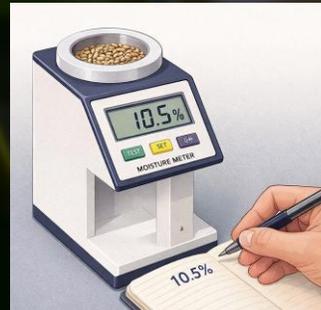
INTAMBWE 1



INTAMBWE 2



INTAMBWE 3&4&5



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 ucyandike.

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'imbutu za kawa (cherries), kugenzura ihigutishwa, 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 points

Gufata neza ubutaka

Igipima pH



Igipima ubushyuhe & ubuhehere



Amazi / isuku



Gukurikirana kawa



Ibipimo

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

- **Ibara:** atanduye kandi abonerana
- **pH:** iyo atanduye, pH yakagombye kuba hafi ya 7.0
- **Incuro zo gusukura:** Burimunsi imashini igomba kozwa mbere yo gukoreshwa

- Gukoresha igitabo n'udupapuro twerekana inkomoko
 - Aho ibitumbwe byaturutse
 - Uburyo bwo kubitunganya
 - icyiciro n'uburemere
 - Tarike yakiriweho
 - Igihe guhugutisha no kwanika bimara

Impamvu



Ubutaka bwiza
↓
Ibitumbwe byiza
↓
Impumuro nziza



Amazi mabi
↓
Kawa yanduye n'impumuro mbi



Nta gukurikirana
↓
Uburyo butanoze mu gutunganya no kwamamaza kawa

Uburyo butandukanye bwo gutunganya kawa

Izina	1 Kawa Yogeje (Ihugutisha ntamazi)	2 Kawa Yogeje (amasaha ihugutisha idatonoye)	3 Itunganyije Ntamazi ahagera umwuka	4 Itunganyije ntamazi ahatagera umwuka	5 Yanitswe je idatonoye	6 Ihugutishijwe idatonoye ahatagera umwuka
Ifoto						
Imiterere	<ul style="list-style-type: none"> Niyo imenyerewe Biroroshye kuyikurikirana Uburyohe bwumvikana 	<ul style="list-style-type: none"> Biroroshye kuyikurikirana Uburyohe bwumvikana 	<ul style="list-style-type: none"> Iryohereye biringaniye Impumuro y'imbuto 	<ul style="list-style-type: none"> Ahatagera ogisijeni Impumuro y'umuzabibu w'umweru 	<ul style="list-style-type: none"> Nta guhera bikenewe Iryohereye, impumuro zitandukanye Impumuro ya divayi 	<ul style="list-style-type: none"> Nta ogisijeni Impumuro y'imbuto z'ahashyuha
Ibyiciro	Gusarura	Gusarura	Gusarura	Gusarura	Gusarura	Gusarura
	Kujonjora	Kujonjora	Kujonjora	Kujonjora	Kujonjora	Kijonjora
	Guhera	Guhugutisha ibitumbwe	Guhera	Guhera	↓	↓
	Guhugutisha ntamazi	Guhera	Guhera	Guhugutisha ahatagera ogisijeni		
	Koza no gushyira mubyiciro	Kozaa no gushyira mubyiciro	↓	↓	↓	↓
	Kumutsa mbere yo kwanika	Kumutsa mbere yo kwanika				
	Kwanika	Kwanika	☀️ Kwanika	☀️ Kwanika	☀️ Kwanika	☀️ Kwanika
	Kubika	Kubika	Kubika	Kubika	Kubika	Kubika

1. Ikawa Yogeje neza – Ihugutisha ntamazi

<p>Ibyiza b'ubu buryo</p>	<ul style="list-style-type: none"> • Kugabanya ibyago byo kwandura ugereranyije nuburyo bwa gakondo; • Igihe cyo kwanika ni gito • Imiterere imwe kumwimerere wa kawa
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<p>Ibisabwa byiza</p>	<ol style="list-style-type: none"> 1. Ingano y'isukari iri hejuru ya 18.0 2. Amazi meza na tanki yo guhugutishirizamo isukuye 3. Imashini itonora iregeye neza
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<p>Ibyiciro</p>	<p>1 Gusarura</p>	<p>2 Kujonjora</p>	<p>3 Guhera</p>	<p>4 Guhugutisha ha ntamazi</p>	<p>5 Koza no gushyira mubyiciro</p>	<p>6 Kumutsa</p>	<p>7 Kwanika</p>	<p>8 Kubika</p>
	<p>UMUNSI WA 1</p>			<p>UMUNSI WA 2</p>		<p>UMUNSI 2-3</p>	<p>UMUNSI WA 4- (Mugihe cy'iminsi 14-18)</p>	<p>-</p>



Intambwe ya 1: Gusarura

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

Ibikoresho bikenewe



Koresha **igisarurirwamo** mugihe cyo gusarura kawa



Sasa **shitingi muni** y'igiti kugira ngo ibitumbwe bigweho



Koresha **imifuka isa neza** mugukusanya ibitumbwe

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako...



70kg



100kg

Uburemere

Igiciro ku muhinzi

7,00rwf/kg

7000rwf/kg

Igiciro

49,000rwf

70,000rwf



② Tangira gusarura **mugitondo**.



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



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



⑤ Shyira kawa **mu gicucu** nyuma yo gusoroma mu kurinda ihuguta ryihuse

1. Ikawa Yogeje neza – Ihugutisha ntamazi

Intambwe ya 2: Kujonjora – Kujonjora hagendeye ku ibara

Ikigamijwe: Gushyira kawa mubyiciro – Izihishije/Izidahishije/ izarengeranye

Ibyitabwaho ①

95% bya kawa irahishije neza



Ibyitabwaho ②

Ingano y'isukari: hejuru ya 18.0



1. Ikawa Yogeje neza – Ihugutisha ntamazi

Intamwe ya 2: 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**

* Ibitumbwe bitaremereye biraremba bigakurwamo



- 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

Ibikoresho



Gukoresha imashini itonora



Gukoresha itanki isukuye ishyirwamo kawa y'amaganda

Ubusobanuro nyamukuru

① Guhera kawa **mbere yuko guhugutisha bitangira**



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



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



Ibyo kwitabwaho

Fata amaganda intete 100 za kawa ugenzure ko izangiritse ziri munsu ya 10% kandi ko imbuto zitatonowe neza ziri munsu ya 10%.



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 **12-18**.
- ② **Ahantu hafunguye**: Itanki igomba kuba idatwikiriye **kugirango kawa itonoye ihure n'umwuka**.

**Niba hakonje cyane, ushobora gusabwa gupfuka ikigega kugira ngo ihugutisha rigende neza.*



Ibyo kwitabwaho

- ① **Impumuro**: Kwirinda impumuro y'umushari n'iya 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*

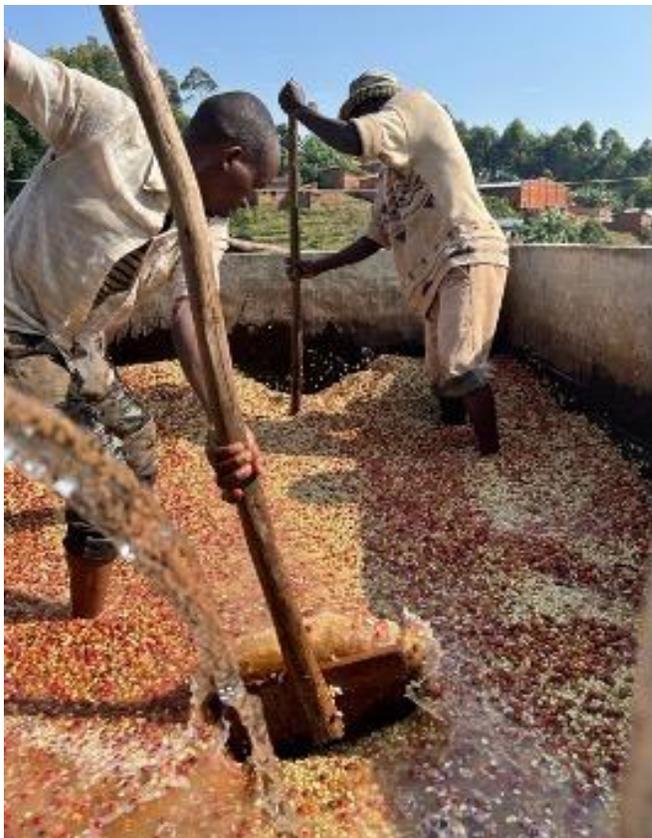


1. Ikawa Yogeje neza – Ihugutisha ntamazi

Intambwe ya 5: Koza no gushyira mu byiciro

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

Ibikoresho



Kwifashisha **rato y'igiti** mukoza kawa

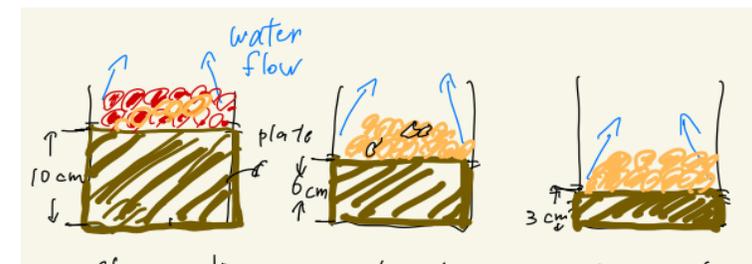
Ingingo nyamukuru

- 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



Intambwe ya 6: Kumutsa mbere yo kwanika (Amasaha 36-48)

Intego: Gukuramo kawa ifite ubusembwa

Ibikoresho

Ubwanikiro butwikiriye



Ingingo nyamukuru

① Kujonjorera **ahatwikiriye**

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

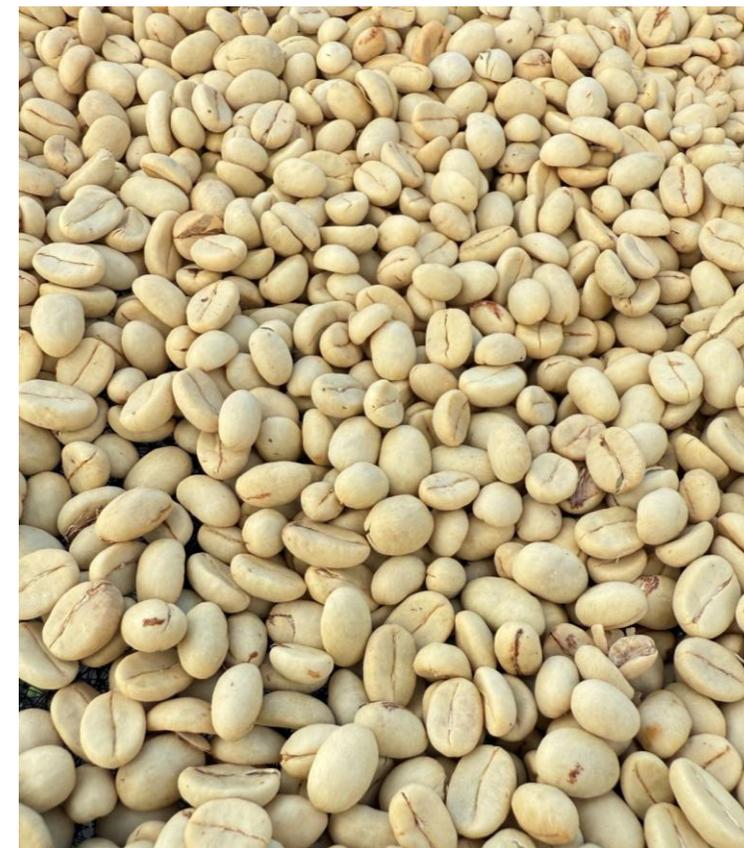
③ Reba **ibara rya kawa ifite ubusembwa** hakurwemo ikawa y’:

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



Ibyitabwaho

Izifite ubusembwa **zikurwamo 100%**



Intambwe ya 7: 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

Ingingo nyamukuru

① **Gucunga ubushyuhe bwa kawa:** koresha shadineti mugutwikira hirindwa ubushyuhe guhera saa tanu kugera saa cyenda .



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



③ **Kumira rimwe:** Korogosha kawa inshuro 4 ku munsi kugira ngo yumishwe neza. Ubunini bw'urutonde rwa kawa: **3 cm** (icyumweru cya mbere) → **5–7 cm**.



Ibyitabwaho

① **Ubuhehere:** Intego ya **11.5-12.0%** mu buryo bwiza. Kugenzura n'igipimo cy'ubuhehe kabiri kumunsi.



② **Igihe imara:** iminsi **14–18**. 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 8: Kubika

Intego: Kubika neza kawa kugira ngo zicuruzwe cyangwa zitonorwe

Ibikoresho

Paleta hirindwa kwangirika



Ingingo nyamukuru

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



- 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 impumuro z'imbutu biturutse ku ihuguta ry'imbere mu gitumbwe
- Igihe cyo kwanika kiba kigufi
- Imiterere imwe kumwimerere wa kawa

Ibisabwa byiza

1. Iyipimo cy'isukari kiri hejuru 18.0
2. Amazi meza na tanki yo guhugutishirizamo isukuye
3. Imashini ihera iregeye neza

Ibyiciro

1	2	3	4	5	6	7	8	9
Gusarura	Kujonjora	Guhugutisha ibitumbwe	Guhera	Guhugutisha ntamazi	Koza no gushyira mubyiciro	Kumutsa	Kwanika	Kubika
UMUNSI 1	UMUNSI 1-2	UMUNSI 2	UMUNSI 2-3	UMUNSI 3	UMUNSI 3-4	UMUNSI 5	-	-
								

Intambwe 1: Gusarura

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

Ibikoresho bikenewe



Koresha **igisarurirwamo** mugihe cyo gusarura kawa



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



Koresha **imifuka isa neza** mugukusanya umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako...



70kg



100kg

Uburemere

Igiciro ku muhinzi

700rwf/kg

700rwf/kg

Igiciro

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 riyihuse

2. Kawa Yogeje neza – Guhugutisha ibitumbwe

Intambwe 2: Kujonjora – Kujonjora hagendewe ku ibara

Ikigamijwe: Gushyira kawa mubyiciro – Zihishije/ Izidahishije/ izarengeranye

Ibyitabwaho ①

95% bya kawa irahishije neza



Ibyitabwaho ②

Ingano y'isukari: hejuru ya 18.0



Intamwe 3: Guhugutisha ibitumbwe (amasaha 24-36)

Intego: kongera impumuro biturutse ku ihugutishwa ry'ibitumbwe

Ibikoresho

Gukoresha **indobo, itanki cyangwa umufuka muguhugutisha amasaha 24-36**



Ingingo nyamukuru

① Guhugutisha kawa **ahafunguye hagera umwuka**(gufungura umufuka cg itanki) **amasaha 24-36**



② Nyuma yo guhuguta, reba neza ko kawa yahuguse **ifite impumuro y'inzoga kandi upime ubusharire (pH:5.0)**



2. Kawa Yogeje neza – guhugutisha ibitumbwe

Intamwe 3: Kujonjora – kwifashisha amazi (kurerembesha)

Intego: Kurerembesha kawa ifite ubusembwa

Ibikoresho

Koresha itanki y'amazi cyangwa indobo urerembesha ibitumbwe



Ingingo nyamukuru

① Suzuma amabara **y'umutuku/ umutuku wijimye**



② Suzuma **ireme wifashishije amazi**



Ibyo kwitaho

① **95%** bya kawa byerekana kawa **“ihishije neza”**



② Izarerembye: **munsi ya 10%**



Intambwe 4: Guhera

Intego: Gukuraho igishishwa udakomerekeje intete za kawa

Ibikoresho



Gukoresha imashini itonora



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 munsi** hirindwa ko zandura



Ibyo kwitabwaho

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



Intambwe ya 5: Guhugutisha

Intego: Gukuraho umurenda wasigaye no kuzana impumuro zifuzwa

Ibikoresho



- Koresha **itanki isukuye** mu guhugutisha
- Koresha **amazi asa** neza woza umurenda kuri kawa



- Koresha **pH meter** upima ko ihugutisha ryakozwe neza.

Ingingo nyamukuru

- ① **Ubushyuhe** bugira ingaruka kumuvuduko wo guhuguta. **Igihe cyo guhugutisha** cyakagombye kuba kigufi mugihe cy'izuba na kirekire mugihe cy'imvura. Mubusanzwe, bifata hagati y'amasaha **12-18**.
- ② **Ahantu hafunguye**: itanki igomba kuba idatwikiriye **kugirango kawa itonoye ihure n'umwuka**.



Ibyo kwitabwaho

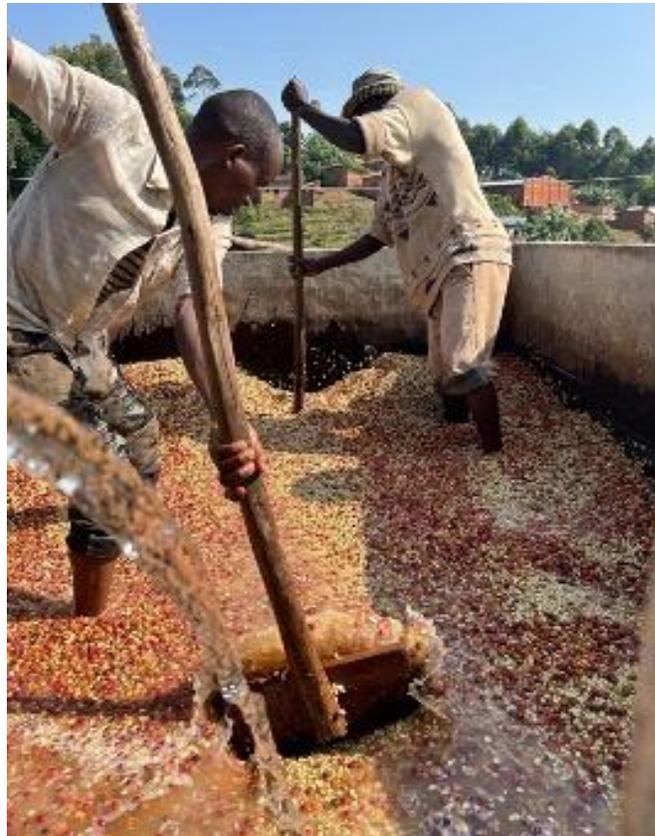
- ① **Impumuro**: Kwirinda impumuro y'umushari n'iya vinegre.
- ② **Imiterere**: Kugenzura niba umurenda witandukanyije na kawa
- ③ **pH**: Yakagombye kuba hagati ya **4.0 – 4.5** ihugutisha rirangiye



Icyiciro cya 6: Koza no gushyira mubyiciro

Intego: koza umurenda usigaye no gushyira mubyiciro hagendewe ku ireme rya kawa

Ibikoresho



Kwifashisha **rato y'igiti** mukoza kawa

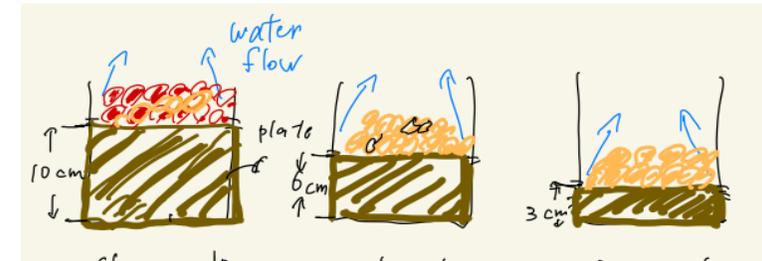
Ingingo nyamukuru

- 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 icyiciro (10cm: A1 / 6cm: A2 / 3cm: izarerembye n'ibishishwa)



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



Icyiciro 7: Kumisha Mbere yo kwanika (Amasaha 36-38)

Intego: Gukuramo kwawa ifite ubusembwa

Ibikoresho

Ubwankiro butwikire



Ingingo nyamukuru

① Kujonjorera **ahatwikiriye**

② Kujonjora **mu masaha 36-48** nyuma yo koza, hirindwa ko kawa yumuka mbere

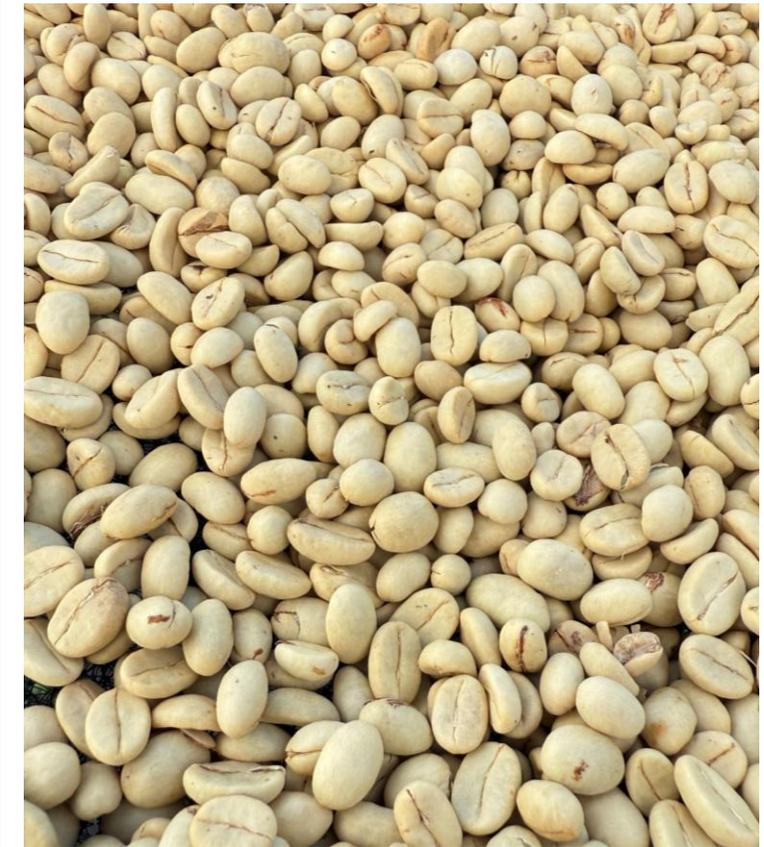
③ Reba **ibara rya kawa ifite ubusembwa** hakurwemo ikawa y’:

- **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

Ingingo nyamukuru

- ① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda.
- ② **Gucunga ubuhehere:** Pfuka parchment 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: **3 cm** (icyumweru cya mbere) → **5–7 cm**.



Ibyitabwaho

- ① **Ubuhehere:** Intego ya **11.5-12.0%** mu buryo bwiza. Kugenzura n'igipimo cy'ubuhehe kabiri kumunsi.
- ② **Igihe imara:** hafi iminsi **14–18**. 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).



2. Kawa Yogeje neza – guhugutisha ibitumbwe

Intambwe ya 9: Kubika

Intego: Kubika neza kawa kugira ngo zicuruzwe cyangwa zitonorwe

Ibikoresho

Palete hirindwa kwangirika



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 gihamyeye.



3. Kawa itunganyijwe nta mazi kandi ihugutishijwe ntamwuka

Ibyiza by'ububuryo

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

Ibisabwa byiza

1. Isukari iri hejuru ya 20.0
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

Harvesting

4

Guhera

5

Kwanika

6

Kubika

UMUNSI 1

UMUNSI 1- 2

UMUNSI 2

UMUNSI 2
(Mugihe cy'iminsi 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 muni** y'igiti itangire ikawa yaguye hasi



Koresha **imifuka isa neza** mugukusanya umusaruro

Ingingo nyamukuru

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako...



70kg



100kg

Uburemere

Igiciro ku muhinzi

700rwf/kg

700rwf/kg

Igiciro

49,000rwf

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 riyihuse

3. Kawa itunganyijwe nta mazi

Intambwe 2: Kujonjora – Kujonjora hagendewe ku ibara

Ikigamijwe: Gushyira kawa mubyicro – Zihishije/ Izidahishije/ izarengeranye

Ibyitabwaho ①

95% bya kawa irahishije neza



Ibyitabwaho ②

Ingano y'isukari: hejuru ya 20.0



Intambwe 3: Guhugutisha Ibitumbwe (Amasaha 12-18)

Purpose: enhance fermentation aroma through in-fruit fermentation

Ibikoresho

Koresha **indobo, itanki cyangwa umufuka** uhugutisha igihe cy'amasaha 12-18 (Kugera mugitondo)



Ingingo nyamukuru

① Guhugutisha **ahagera umwuka** (umufuka cg itanki ifunguye) **amasaha 12-18** (Kugera mugitondo)



② Nyuma yo guhuguta, reba neza ko kawa yahuguse **ifite impumuro y'inzoga kandi upime ubusharire (pH:5.5)**



Intamwe 3: 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.



Intambwe ya 4: Kwanika

Intego: Kugabanya ubuhehere hadakuweho umurenda utanga impumuro

Ibikoresho



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



Rato y'igiti muguhindura kawa hadakuweho umurenda



Moisture meter mukugenzura ubuhehere bwa kawa

Ingingo z'ingenzi

- ① **Koresha shadineti** hirinda ubushyuhe bukabije hagati ya **saa tanu** na **saa cyenda**
- ② **Kwanika ku zuba umunsi 1-2** uhagarika ihugutisha isukari iguma kuri kawa.
- ③ **Kuruhuka:** Umunsi umwe mu cyumweru, pfuka parchment neza yose.
- ④ **kumira rimwe:** Korogosha kawa inshuro 3 ku munsi ukoresheje rake. Ubunini bw'urutonde rwa kawa: 3 cm (mu minsi 2 ya mbere) → 5-7 cm nyuma.
**Irinde gukorogosha cyane.*



Ibyitabwaho

- ① **Ubuhehere:** Hagamijwe **10-12%** mubihe byiza. Pima ubuhehere 2 kumunsi.
- ② **Igihe:** Byibuze **iminsi 30**. kwanika bigomba gukurikiranwa hakirindwakuma vuba kandi insigane.
- ③ **Ubushyuhe bwa kawa:** Ubushyuhe bwakagombye guhora **munsi ya 25 °C muminsi 3 yambere na 35°C nyuma yaho** hirindwa kwangiza umutima wa kawa.



Icyiciro 5: Kubika

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

Ibikoresho

Palete hirindwa kwangirika



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'imbutu.
- Kubyara uburyohe buhebuje budahinduka.

Ibisabwa byiza

1. Igipimo cy'isukari hejuru ya 20.0
2. Bisaba ahatagera umwuka wa ogisijeni kugira ngo utunyabuzima dukanguke nko mu itanki cg imifuka ya GrainPro

Ibyiciro

1	2	3	4	5	6	7
Gusarura	Kujonjora	Guhera	Guhugutisha ahatagera umwuka	Kumutsa	Kwanika	Kubika
UMUNSI 1			UMUNSI 1-9 (Amasaha 192)	UMUNSI 10-12	UMUNSI 12	-



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 muni** y'igiti itangire ikawa yaguye hasi



Koresha **imifuka isa neza** mugukusanya umusaruro

Ingingo nyamukuru

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako...



70kg



100kg

Uburemere

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 riyihuse

4. Kawa itunganyije ntamazi igahugutishwa ahatagera umwuka

Intambwe ya 2: Kujonjora – Kujonjora hagendewe ku ibara

Intego: Gushyira kawa mubyicro – Izihishije/ izidahishije/ izarengeranye

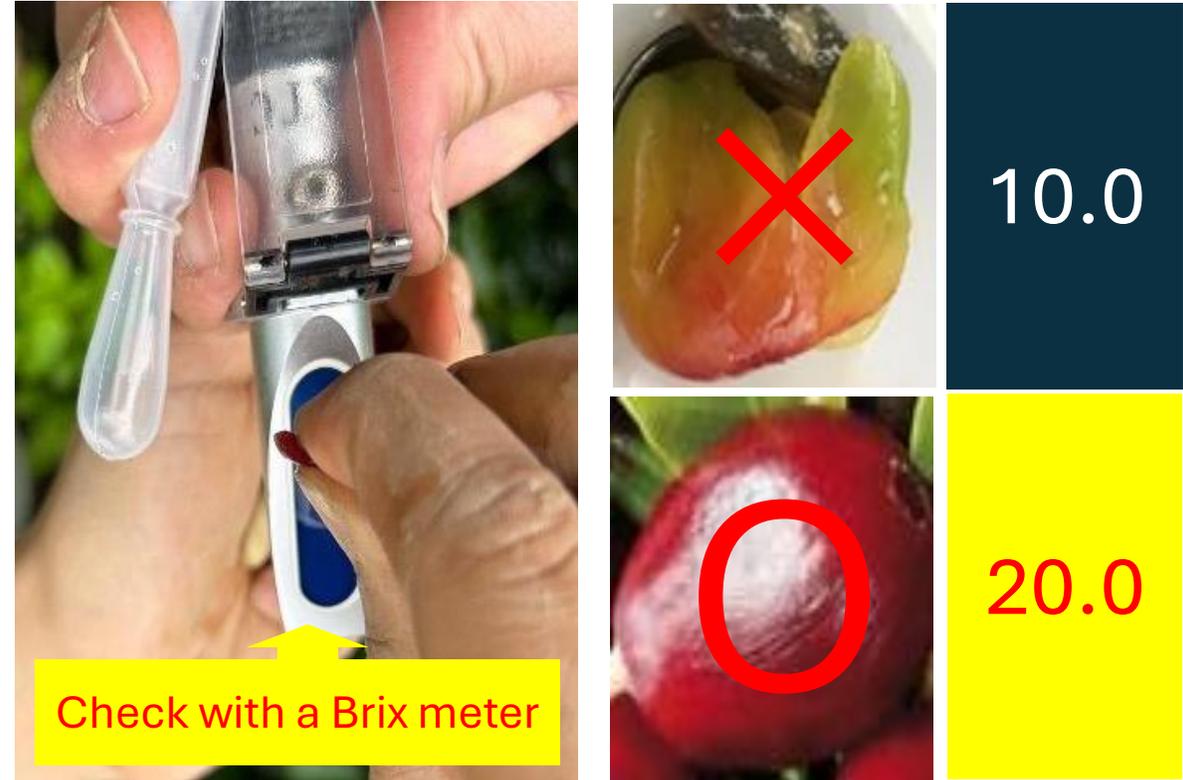
Ibyitabwaho ①

95% ya kawa **ihishije neza**



Ibyitabwaho ②

Isukari: Hejuru ya 20.0



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.



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)



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



Intambwe 5: Kumutsa (Amasaha 36-48)

Intego: Gutora kawa zifite inenge

Ibikoresho

Ibitanda bya kawa biri ahatwikiriye



Ingingo nyamukuru

- ① Gushyira kawa ahatwikiriye igatorwa mbere yo kumutswa.
- ② Gutora no gutegereza **amasaha 36-48** nyuma nyuma yo guhugutisha kawa igomba kuruhuka mbere yo kujyanwa kuzuba.
- ③ Ubunini bwa kawa kugitanda bugomba kuba buri hagati **3-5cm** ahatwikiriye.



Ibyitabwaho

Gukuramo ikawa zifite inenge

100%



Intambwe ya 6: Kwanika

Intego: Kugabanya ubuhehere hadakuweho umurenda utanga uburyohe

Ibikoresho



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



Rato y'igiti muguhindura kawa hadakuweho umurenda



Igipima ubuhehere (moisture meter)

Ingingo z'ingenzi

- ① **Gucunga ubushyuhe bwa kawa:** koresha shadineti mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda
- ② **Gucunga ubuhehere:** Pfuka parchment 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: 3-5 cm (icyumweru cya mbere) → 5-7 cm nyuma.



Ibyitabwaho

- ① **Ubushyuhe:** Hagamijwe **11.0%** mubihe byiza. Pima ubuhehere 2 kumunsi.
- ② **Igihe:** Byibuze **iminsi 30**. kwanika bigomba gukurikirana hirindwa kuma vuba kandi insigane.
- ③ **Ubuhehere bwa kawa:** Ubushyuhe bwakagombye guhora **munsi ya 35 °C** hirindwa kwangiza kawa.



Intambwe 7: Kubika

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

Ibikoresho

Paleta hirindwa kwangirika



Ingingo nyamukuru

- ① **Kugenzura ubuhehere:** Kugumisha kawa kubwume 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.



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 20.0
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

Ibyiciro

UMUNSI 1



UMUNSI 1-2



UMUNSI 3
(kugera iminsi 30-35)



Intambwe 1: Gusarura

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

Ibikoresho bikenewe



Koresha **igisarurirwamo** mugihe cyo gusarura kawa



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



Koresha **imifuka isa neza** mugukusanya umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



70kg



100kg

Uburemere

Igiciro ku muhinzi

700rwf/kg

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Igiciro

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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 riyihuse

5. Kawa yanitse idatonoye (Natirere)

Intambwe ya 2: Kujonjora – Kujonjora kawa hagendewe ku ibara

Intego: Gushyira kawa mubyiciro – Izihishije/ izidahishije/ izarengeranye

Ibyitabwaho ①

95% ya kawa **ihishije neza**



Ibyitabwaho ②

Isukari: Hejuru ya 20.0



5. Kawa yanitse idatonoye (Natirere)

Intambwe 3: Kumutsa (Amasaha 36-48)

Intego: Gukuramo ibitumbwe bifite inenge

Ibikoresho

Ibitanda bya kawa biri ahatwikiriye



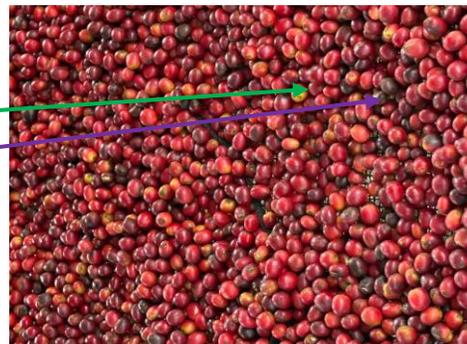
Ingingo nyamukuru

① Gushyira ibitumbwe ahatwikiriye hagamijwe gutora (Izidahishije, Iyarengeje 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

Defects are **100% removed**



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

Ingingo nyamukuru

- ① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda
- ② **Gucunga ubuhehere:** Pfuka parchment 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 3-5 yambere, 5-7 ubuhehere bugeze kuri 35%



Ibyitabwaho

- ① **Ubuhehere bwa kawa:** Intego **12%** mubihe byiza. Gupima ubuhehere 2 kumunsi.



- ② **Igihe kwanika bimara:** Ubusanzwe, ni iminsi **30-35**. 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**.



5. Kawa yanitse idatonoye (Natirere)

Icyiciro 5: Kubika

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

Ibikoresho

Paleta hirindwa kwangirika



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 2** kugira ngo ubushuhe bwayo bugume ku gipimo gihamye.



6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Ibyiza by'ubu buryo

- Guhanga uburyohe n'impumuro byihariye kandi binyuranye, harimo icyanga cyumvikana n'impumuro y'imbuto
- Gutanga ubwiza budahindagurika bushingiye kucyanga
- Ikunzwe n'abashaka ubwiza buhebuje, n'udushya kuri kawa y'icyanga kirenze ikimenyerewe.

Ibisabwa byiza

1. Ikigero cy'isukari kiri hejuru ya 20.0
2. Hakenerwa ahatagera umwuka nka tanki cg umufuka wa plasitiki wa Grain Pro bifunze neza bituma utunyabuzima dukanguka

Ibyiciro

1	2	3	4	5	6
Gusarura	Kujonjora	Guhugutisha ahatagera umwuka	Kumutsa	Kwanika	Kubika
UMUNSI 1		UMUNSI 1-4 (Amasaha 72)	UMUNI 4-5	DAY 5- (Iminsi 30-35)	-

6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Intambwe 1: Gusarura

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

Ibikoresho bikenewe



Koresha **igisarurirwamo** mugihe cyo gusarura kawa



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



Koresha **imifuka isa neza** mugukusanya umusaruro

Ingingo nyamuku

① Gusarura **ibitumbwe bihishije neza gusa**



Kuberako....



70kg



100kg

Uburemere

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 riyihuse

6. Kawa yanikwa idatonoye nyuma yo guhugutishwa ahatagera umwuka

Intambwe ya 2: Kujonjora – Kujonjora kawa hagendewe ku ibara

Intego: Gushyira kawa mubyiciro – Izihishije/ izidahishije/ izarengeranye

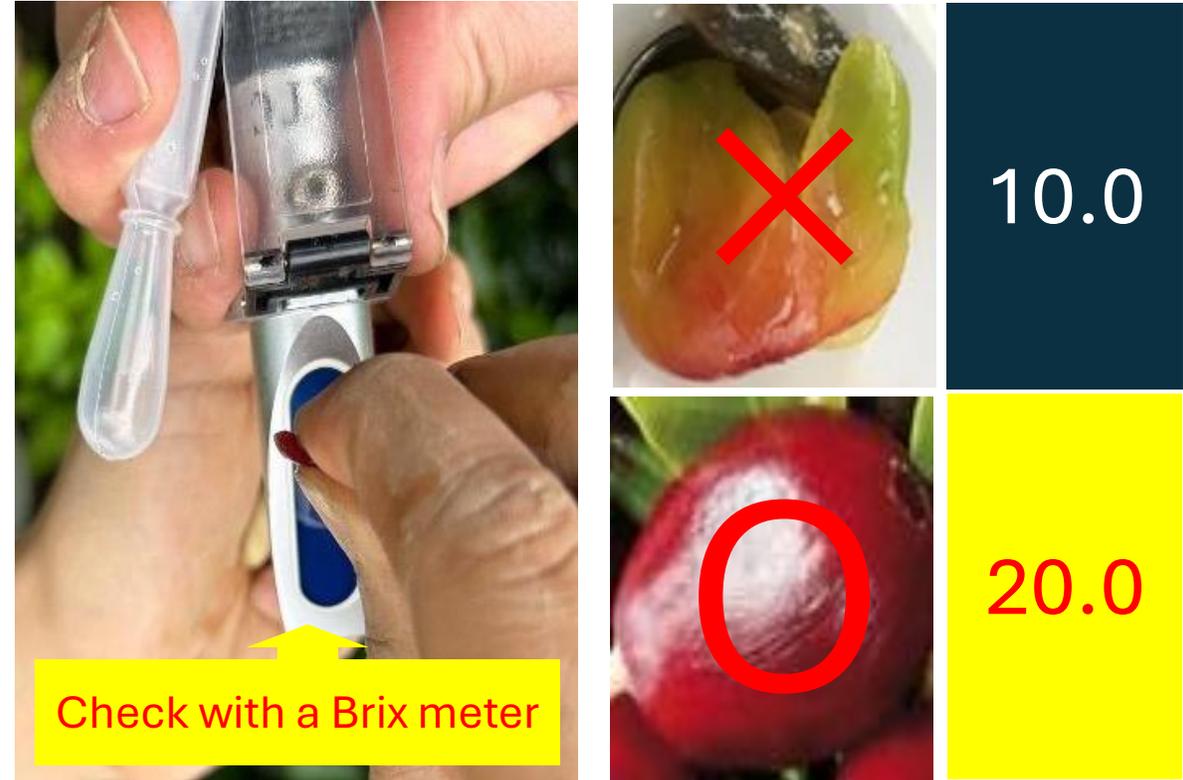
Ibyitabwaho ①

95% ya kawa **ihishije neza**



Ibyitabwaho ②

Isukari: Hejuru ya 20.0



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:** Igihe gisabwa ni **amasaha 48-72** bitewe n'isoko rya kawa ya anaerobic natural.



**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 nivyumuguzi yifuza*



Intambwe 4: Kumutsa (Amasaha 36-48)

Intego : Gutora kawa zifite inenge

Ibikoresho

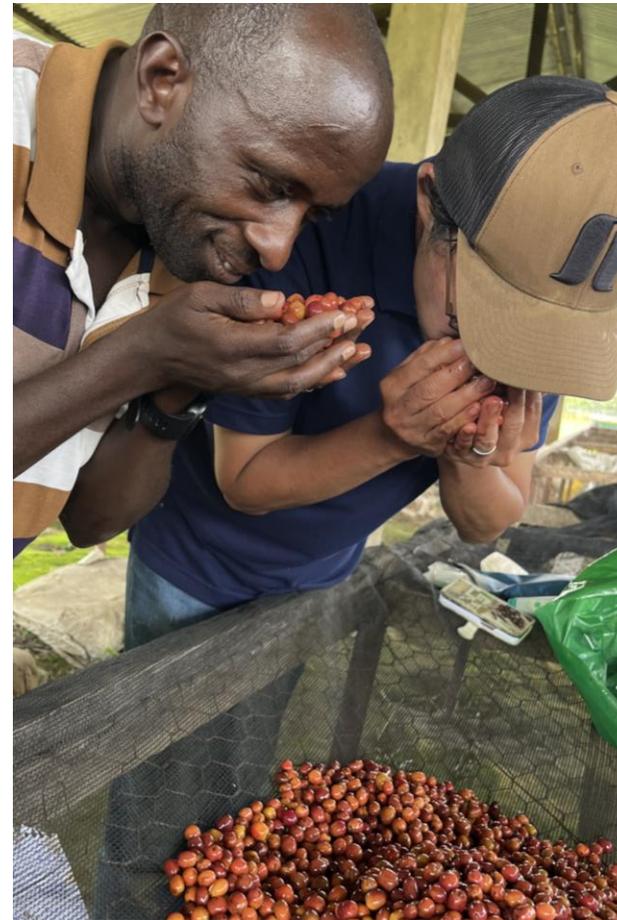
Ibitanda bya kawa biri ahatwikiriye



Key concept

① Gushyira ibitumbwe ahatwikiriye hagatorwa Ibitumbwe (Bidahishije, ibyarengaje urugero rwo guhisha, Ibyangijwe n'udukoko) mbere yo kwanika .

② Kwanikwa ku ngano ya **4cm** y'ubunini ku gitanda igihe cy'amasaha **36-48**. Ibitumbwe bigomba kuguma ahatwikiriye mbere yo kwanikwa kuzuba .



Checking point

Defects are **100% removed**



Intamwe ya 5: 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

Ingingo nyamukuru

- ① **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda
- ② **Gucunga ubushyuhe bwa kawa:** koresha **shadineti** mugutwikira hirindwa ubushyuhe saa tanu kugera saa cyenda
- ③ **Ubushyuhe n'ubuhehere bwa kawa:** Gukomeza ubushyuhe bwa kawa **munsi ya 40°C** hirindwa kwangiza umutima wa kawa
- ④ **Kumira rimwe:** Korogosha inshuro **5-6 ku munsi** mu minsi 2-3. Nyuma yaho, inshuro **3 ku munsi**. Kwanika kungano ya **5-8 cm** iminsi 2-3, nyuma-> **4cm**



Ibyitabwaho

- ① **Ubuhehere:** bugomba kugezwa kuri **10-12%**. Pima ubuhehere 2 kumunsi.
- ② **Igihe kwanika bimara:** Ubusanzwe, iminsi **30-35**. Igikorwa cyo kwanika kigomba kwitonderwa hirindwa kubabuka cg kutuma kimwe.
- ③ **Ubushyuhe bwa kawa:** Bwakagombye kuba **munsi ya 40°C**.



Icyiciro 6: Kubika

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

Ibikoresho

Paleta hirindwa kwangirika



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 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: _____

-Receiving date: dd/mm/yyyy

-Process method: FW / HN / NR / Other (____)

-Certificate: _____

-Lot name: _____

-Main area: _____

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

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

-Grade: A1 / A2 / A3 / Triage

-Drying start date: dd/mm/yyyy

-Drying end date: dd/mm/yyyy

-Moisture content: _____%

-Final weight: _____ kg

Weight

kg

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

Receiving date: itariki nyayo imbuto za kawa zagejwe 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 yatangiriye n'igihe yarangiriye.

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

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.