	Uburyo bwo gukusanya, gutunganya no gukwirakwiza amakuru kuri filiyeri y'imbuto mu Rwanda	Kode y'inyandiko: 41KR169I178v0
	IGICE CYA 4 : UBUMENYI BW'IMIKORERE MU BYA TEKINIKI	Itariki yo kujyanisha inyandiko n'igihe UKUBOZA 2007
IFISHI YA TEKINIKI ZO GUHINGA KIJYAMBERE : AMASHU		Inyandiko ikomatanyije

Inkomoko y'inyandiko	AJENDA Y'UBUHINZI / MINAGRI

Itariki inyandiko yasohokeyeho	2002

Umubare w'amapagi	4

IFISHI YA TEKINIKI ZO GUHINGA KIJYAMBERE : AMASHU

1. Umuryango w'ibihingwa abarizwamo :

Amashu ari mu muryango wa « **BRASSICACEAE** » bita kandi « **Crucifères** » nawo uri mu muryango mugari wa **« Dicotyledones »**

2. Aho akunda : amashu asanzwe (choux pommés) n'amashu bise ay'i Buruseli (choux de Bruxelles) yera mu Rwanda hose. Naho amashu barya indabyo (choux-fleurs) zo zisaba imvura nyinshi kandi ya buri gihe ku buryo aberanye n'akarere k'imisozi miremire.

3. Ubutaka : ubutaka buvanze umucanga n'ibumba nibwo buberanye n'amashu yose. Asaba ubutaka bwiza, burebure kandi bufite ifumbire nyinshi. Niyo mpamvu ubutaka busharira cyane atari bwiza kuri icyo gihingwa, ariko ibishanga bikamuye neza kandi byabonye ishagara biberanye n'amashu

4. Amoko y'amashu : nkuko byavuzwe haruguru amashu agabanyijemo amatsinda atatu akunzwe mu Rwanda :

- *amashu asanzwe* (Brassica oleracea capitata) : uyibwirwa n'uko agenda yibumba uko akura
- *amashu y'i Buruseli* (ishu mbirigi) ariyo (Brassica oleracea gemmifera) : uyibwirwa n'udushu duto tumera ku giti cy'ishu. Iyo witegereje neza usanga utwo dushu duto natwo tugenda twifunga kandi ni natwo turibwa
- *amashu basarura indabo* (ishufureri) ariyo (Brassica oleracea botrytis) : ku mutwe w'ishu iyo yeze, indabyo z'umweru ziba zitsitse hamwe ari nazo basarura akaba arizo barya

Muri buri tsinda ry'amashu amoko yamamazwa mu Rwanda ni aya :

- *amashu asanzwe* : **Marché de Copenhague**
- *amashu mbiligi* : **Long Island**
- *amashufureri* : **Boule de neige**

5. Ifumbire : nk'izindi mboga barya amababi, ifumbire y'ibishanguka nziza, ihoze kandi nyinshi itanga umusaruro mwiza kandi ushimishije. Niyo mpamvu hagomba Kg 30 kugeza kuri Kg 50/ari 1

6. Igihe cy'itera : ni ngombwa guteganya iminsi 25 kugera kuri 30 amashu amara mu buhumbikiro kugirango umenye igihe uzaterera ingemwe mu murima. Kugemura ingemwe mu mirima bikorwa mu gihe cy'imvura (Nzeri na Werurwe) iyo zihingwa i musozi. Mu kabande aho bashobora kuvomera, amashu ashobora guhingwa ibihe by'ihinga byose uko ari bitatu

7. Gutera amashu :

a) Guhumbika (kwinaza)

- binaza mu buhumbikiro busakaye
- bateganya gr 2 kugeza kuri gr 3 kuri m² 1
- kuri ari 1 y'umurima w'amashu bateganya m² 1,5-2 z'ubuhumbikiro
- ubujyakuzimu bakoresha iyo babiba imbuto mu buhumbikiro : 6-12 mm
- ubuso bw'ubuhumbikiro ngombwa ngo ubone ingemwe zo gutera kuri ha 1= m² 180
- utugemwe dutangira kumera nyuma y'iminsi kuva kuri 5 kugeza ku minsi 6

b) Kugemura :

- ingemwe ziri mu buhumbikiro zigemurwa iyo zifite amababi 5 cyangwa 6 bakazitera ku mirongo itandukanyijwe na cm 60, naho ku mirongo batera ku buryo bw''mbusane hagati basiga cm 40 cyangwa 60
- umubare ngombwa kuri ha = ingemwe 42.000
- mu gutera, bakoresha ingemwe nziza, zibyibushye kandi zitarangwaho uburwayi
- iyo bamaze gutera urugemwe, ni ngombwa gutsindagira ubutaka bwegereye urugemwe, kuvomera no gutwikira urugemwe rumwe rumwe igihe kitari kirekire

8. Gukorera amashu mu murima : imirimo ikurikira igomba kwitabwaho :

- kuvomera kenshi iyo nta mvura igwa
- kubagara kenshi kugirango hatameramo ibyatsi bibi
- ni ngombwa kumenera kenshi kugirango imiterere y'ubutaka ihore ari myiza
- gufumbira ukoresheje NPK 17.17.17. Bakoresha Kg 3 kuri ari 1 kandi bazengurutsa urugemwe
- ku mashu basarura indabo (choux-fleurs), iyo ururabo rumaze kugira ubunini bungana n'igi, barutwikiriza amababi y'ishu yo hasi bayahinira hejuru y'ururabo

9. Indwara n'udukoko :

a) Ibibyimba ku mizi (Hernie)

Ikiyitera : Agahumyo bita **Plasmodisphora brassicae**
Aho ifata : imizi
Ibimenyetso : imizi ita ireme ikamera nk'ibijumba. Irabora ikanuka cyane kandi amashu ntakura neza ndetse iyo hashyushye amashu ararabirana agasa n'ayanambye
Uko bayirwanya :
- kurandura no gutwikira mu mwobo amashu arwaye
- mu gihe cy'itera, gukoresha ingemwe zitarwaye
- imirima iyo ndwara yagezemo, kumara imyaka 5 batarasubizamo amashu
- mu buryo bwo kuyikingira : kuvanga itaka ry'ubuhumbikiro n'amatotoro y'inkoko n'ivu ry'ibiti mbere yo guhumbika imbuto z'amashu
- gutera imiti yica indwara iterwa n'uduhumyo : aha twavuga nka :
  - Oxychlorure de cuivre : g 50/10 L z'amazi/ari 1
  - Dacobre : gr 140/L 10 z'amazi/ari 1 cyangwa 1,5

b) Imvura y'amashu (mildiou) : ni indwara yo mu buhumbikiro

Ikiyitera : agahumyo kitwa **Peronospora parasitica**
Aho ifata : amababi
Ibimenyetso : utubara duto tutangana, nyuma amababi agahinduka umuhondo, akuma. Iyo ndwara ikara mu gihe cy'imvura nyinshi
Uko bayirwanya :
- kwirinda guhumbika imbuto zegeranye cyane
- kuvomera mu gitondo nibyo biba byiza
- gutera imiti irwanya indwara z'uduhumyo rimwe mu cyumweru mu bihe bisanzwe cyangwa 2 mu cyumweru mu bihe by'imvura nyinshi. Iyo miti ni nka :
  - Milraz 76 WP : g 20/L 10 z'amazi/are 1
  - Cupro-antracol : g 20/L 10 z'amazi/are 1
  - Dithane M45 : g 10/ L 10 z'amazi/ari 1

c) Ububore bw'umunigo : n'indwara yo mu buhumbikiro

Ikiyitera : agahumyo **Rhizoctonia Solani**
Aho ifata : umunigo w'ishu (urugemwe)
Ibimenyetso : umunigo w'urugemwe urabora, ugasa n'ikigina cyijimye kandi ukanuka. Umunigo uba muto kandi urugemwe rukaba rwakuma.

Uko bayirwanya :

- kurandura no gutwikira mu mwobo ingemwe zirwaye (zafashwe)
- kwirinda guhumbika ingewe zegeranye cyane
- kwirinda gushyira uruhumbikiro ahantu hataboneka urumuri kandi hatose
- gutera imiti irwanya indwara z'uduhumyo (reba ivura imvura y'amashu)

d) Ikungeri

Ikiyitera : igisavumvuri cy'umukara
Aho ifata : amababi
Ibimenyetso : mu buhumbikiro cyangwa se ingemwe zigiterwa, usanga ku mababi utwenge twinshi
Uko bayirwanya :

- gukurikiza uburyo bwiza bwo guhinga kugirango amashu akure vuba
- gutera inyanya cyangwa se urwuya (menthe) hagati y'amashu kuko impumuro y'ibyo bihingwa yirukana ikungeri
- kuvomerera kenshi ingemwe z'amashu mu mpeshyi kugirango amababi y'amashu ndetse n'ubutaka bituma
- gukoresha imiti irwanya udusimba :
  - Sumithion 50% : ml 10/L 10 z'amazi/ari 1
  - Deltamethrine : ml 30/ L 10 z'amazi/ari 1

e) Isazi y'amashu :

Ikiyitera : isazi y'amashu
Aho ifata : umunigo, agati n'imizi
Ibimenyetso : isazi itera amagi hasi ku ngemwe. Inyo zinjira mu munigo zigacukura utuyira mu giti cy'amashu. Iyo isazi ari nyinshi, imizi yose irononekara, amababi akarabirana maze akuma
Uko bayirwanya :

- gukurikiza uburyo bwiza bwo guhinga kugirango ingemwe zikure vuba
- gutera imiti yica udukoko (reba uko barwanya ikungeri)

f) Amababi apfumaguye (teigne) :

Ikiyitera : igisangungu cy'icyatsi kibisi kibyarwa n'ibinyugunyugu byitwa : **Plutella Xystella, Hellula undalis, Spodoptera exempta, Trichoplusia ni**
Aho ifata : amababi
Ibimenyetso : udusangungu tw'icyatsi kibisi keruruka turya amababi y'ishu tugasigamo imyobo minini
Uko bayirwanya :

- gutera inyanya nkeya hagati y'amashu kuko impumuro yazo ituma udisimba duhunga
- gutera imiti yica udukoko (reba uko barwanya ikungeri)

g) Inzoka z'ibimera (nématodes)

Ikiyitera : Inzoka z'ibihingwa
Aho ifata : imizi
Ibimenyetso : ku mizi y'ishu hameraho utuzi twinshi duto turiho amapfundo
Uko bayirwanya :

- mu murima, indwara yajemo, bamara imyaka 3 cyangwa 4 batarasubizamo amashu
- gutera nyiramunukanabi (tagètes) bakazikikiza umurima w'amashu no mu murima hagati

h) Ububore bw'amashu :

Ikiyitera : agahumyo

Aho ifata : imbere mw'ishu
Uko bayirwanya : gutera amashu mu mirima ikamuye amazi neza

i) Ibindi byonnyi by'amashu biboneka mu Rwanda :

Ibyo aribyo n'aho bifata :

- Ubuhunduguru (inda z'ibihingwa) : **Brericoryne brassicae**, bufata amababi bukayabuza kwifunga.
- Inanda (**Agrotis segetum**) n'amajeri (**Branchytrupes membranaceus**) zicimburamo kabili amashu cyane cyane nijoro maze agahita apfa.
- Udusurira (**Henosepilachna elateris**) turya amababi y'amashu.

Uko babirwanya :

- Udusurira n'ubuhunduguru : ni ugukoresha imiti yica udukoko nka : Sumithion 50% cyangwa Deltamethrine (reba uko barwanya ikungeri)
- Inanda n'amajeri (amajereri) : ku zitoragura ukazitwika cyangwa gukoresha umuti wa Dursban 5% G : g 200/ari 1 cyangwa Dursban y'ifu : 150 g/ari 1 cyangwa Dursban 48% y'amazi : 10 ml/litiro 10 z'amazi/ari 1.

10. Igihe yerera :

- Amashu amara amezi 2,5 kugeza kuri 3 kugirango abe yeze, duhereye ku gihe wagemuriwe.
- Asarurwa kandi mu gihe cy'icyumweri 1 cyangwa 2 bitewe n'ubushobozi bwo kuyarya cyangwa kuyarurisha.
- Amashu yera indabyo yo yera hashize amezi 2 kugeza kuri 3, iyo aharibwa hatangiye kwisatura.

11. Umurumbuko :

Mu buhinzi bwa kijyambere kandi bitewe n'amoko y'amashu, ushobora kugera kuri toni 50 z'amashu kuri ha 1

12. Guhunika : amashu abikika nabi cyane. Ariko ashobora kubikwa iminsi mike amanitse mu gisenge cy'ahantu hafutse kandi hinjiramo akayaga cyangwa se mu cyumba gikonje kuri dogeri 4°C.