

TEKNIKAL PEPA 4.1d

# Mekem rus long kava wetem air layering

Sot manwel blong ol man we oli planem kava  
Edisen wetem ol foto

I kamaot long Technical White Paper No. 4 — Outdoor Nursery Propagation of Kava  
(*Piper methysticum*) by Air Layering · Blythe, Bowman mo McDonnell, 2026

American Kava Association i pablisim, Las Vegas, Nevada, USA · Bislama · 2026

### 1 Wanem hemia air layering?

**Air layering** hemia wan rod blong mekem niufala plant, we ol man oli yusum finis long plante narafala tri mo krop long tropik, olsem pepa (*Piper nigrum*). Long rod ia, yu mekem rus i kamaot long wan **skru** (nod) blong han blong kava taem han ia i stap yet long mama plant — yu no katem fastaem.

Yu rapem skru ia wetem mos (sphagnum) we i wet, mo yu kavarem wetem wan pot plastik we laet i no save go insaed. Long **21 dei**, rus i kamaot long skru. Afta, yu katem han ia i aot long mama plant mo yu planem olsem wan niufala plant.

**I defren long katem stik:** long fasin blong katem stik, yu katem han fastaem mo afta yu traem mekem rus. Long air layering, rus i kamaot fastaem, biae nomo yu katem — mo mama plant i stap givim wota mo kakae long skru ia oltaem.



Air layering long graon, olsem ol bubu oli mekem: ol han blong plant oli stap tajem graon mo rus i kamaot long ol skru. Fasin ia, wetem fasin blong Hawai’i blong planem long bed blong mos, i givim tingting blong wokem metod we oli testem.

### 2 Risalt blong testing

Oli testem 120 air layer long taem bitwin Jun 2025 mo Maj 2026, long wan nasari long Boca Raton, Florida, long Yunaeted Stet.

- **75.8%** (91 long 120) blong ol air layer oli mekem rus long 21 dei.
- Oli testem tri taem long yia: hot mo ren (Jun 2025) **75.0%**, taem i jenis (Oktoba 2025) **80.0%**, kolkol mo drae (Febwari 2026) **72.5%**. Ol defrens ia **i no bigfala** — metod ia i wok long evri taem we oli testem.
- Ol 91 han we oli mekem rus, **evriwan oli laef** kasem 30 dei afta oli planem.
- **I no gat** glas haos, i no gat mesin blong spre i wota, i no gat hit andanit mo i no gat laet blong mesin. Evri wok i hapen long open ples, andanit long sed klos.
- Oli testem tu kaen kava blong Amerika: Kali-ISA **81.7%**, Kali-Hiwa **70.0%**. Defrens ia **i no strong inaf** blong talem se wan i winim narawan ( $p = 0.20$ ).

### 3 Ol samting yu nidim

|                     |                                                                                                                                                                          |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mos (sphagnum)      | I mas wet mo laef. 10–15 gram blong wan skru.                                                                                                                            |
| Pot blong air layer | Plastik we laet i no save go insaed, tu haf we oli klosap gud, 12 cm (4.7 injis) raon. Sipos yu no faenem, yu save yusum blak plastik mo tep blong taetem gud tufala en. |
| Rutin jel           | Jel we i gat samwe 0.3% IBA (long testing oli yusum Clonex®).                                                                                                            |
| Klin wota           | Blong mekem mos i wet.                                                                                                                                                   |
| Naif                | I sap mo klin, blong katem han.                                                                                                                                          |
| Blij 10%            | Blong klinim ol pot bitwin evri raon blong wok.                                                                                                                          |

**Ol pot**

Ol pot plastik we i gat tu haf. Long testing oli yusum wan 12 cm (fas wan long lefsaed).

**Mos i stap insaed**

Tufala haf blong pot i fulap wetem mos we i wet, klosap taem blong putum long plant.

**Plante long wan plant**

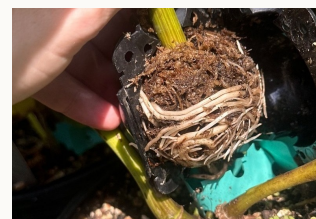
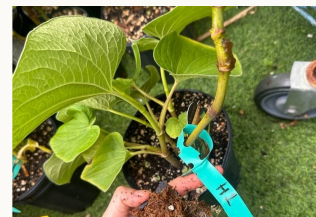
Tu pot i stap long wan kava plant nomo — yu no katem plant ia mo hem i stap prodakem yet.

### Ol samting we yumi no save talem

Long testing ia, oli putum rutin jel mo mikrob inokulant (*Bacillus* mo *maekoraesa*) tugeta long evri air layer. From hemia, yumi **no save** wanem long tufala i mekem rus i kamaot, no sipos tufala tugeta i mekem.

## 4 Ol step blong wok

- 1 Jusum han.** Tekem wan han insaed long plant, we i 0.5–1.0 cm bigfala, bitwin fas skru mo namba tri skru andanit long top. Ol lif i mas grin mo strong. No yusum ol han we oli slak no oli sik. Long testing, ol mama plant oli 12–18 manis olfala.
- 2 Mekem mos redi.** Putum mos long klin wota blong samwe 4 aoa, mo afta pusum wota i aot: i mas wet, be i no mas drip.
- 3 Putum rutin jel.** Rabem wan smol lea blong jel long skin blong han, long skru nomo. **No skrasem, no katem mo no raonem skin** — long testing ia oli no mekem eni kat long skru.
- 4 Rapem mos mo klosem pot.** Putum 10–15 gram blong mos we i wet raon long skru we yu tritim, mo klosem tufala haf blong pot long han long tufala saed, blong mos i no foldaon mo i no drae kwiktaem. Pot i mas mekem i tudak insaed.
- 5 Livim blong 21 dei. No openem, no jekem, no putum wota bakegen.** I no gat narafala wok long taem ia. Plant i save stap long open ples, long san mo long ren.
- 6 Openem mo jekem.** Long 21 dei, openem pot isi isi mo lukluk long ol rus taem han i stap yet long mama plant. Jekem folem seksen 5.



- 7 Katem mo planem.** Ol han we oli gat rus finis, yu save katem mo planem. No tekemaot mos long ol rus — lukluk long seksen 6.



## 5 Olsem wanem blong jekem ol rus long dei 21

Long testing oli yusum fo kaen mak. Ol foto ia i soem olsem wanem oli luk taem yu openem pot:



**I laef, be i no gat rus**

Han i stap laef mo grin insaed long mos, be i no gat wan rus nating.



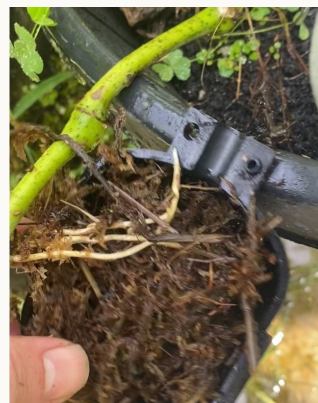
**Smol rus nomo**

Wan no tu sotfala rus i kamaot long skru, be i no kasem tri rus we oli 2 cm long.



**Smol rus nomo (pot i open)**

Mos i liftap aot long pot: smol sotfala rus nomo, i no inaf blong planem sef.



**Gud rus**

Tri rus no moa, wanwan i 2 cm no moa long, oli brankem mo oli kavarem mos.

Ol han long tu las kaen mak (*smol rus nomo* mo *gud rus*) yu save katem mo planem. Ol we i no gat rus, yu save livim moa longtaem, no openem mo mekem bakegen. Ol skru we **oli roten** — oli ded, i no gat laef tis — yu sakemaot.



**Katem finis**

Han we oli katem finis, wetem mos mo ol rus i stap gud, bifo blong planem.



**Redi blong planem**

Wan lot blong ol han we oli katem finis, wetem ol rus i kavarem mos.



**Planem finis**

Han we oli planem long wan pot blong 1 galen; mos i stap haf antap long graon.

## 6 Katem mo planem

- Katem han **jes andanit** long mos, wetem wan naif we i sap mo klin.
- **No tekemaot mos long ol rus.** Planem wetem mos long wan pot blong 1 galen (3.8 L) wetem gudfala graon blong planem.
- Livim andanit long sed klos (30%) blong 30 dei. Long testing oli no yusum eni mesin blong spreng wota.
- Taem plant i grup finis mo ol rus oli go insaed long niufala graon, yu save tekem i go long gaden.

## 7 Sam gudfala advaes

- Yu save putum plante pot long wan kava plant long semtaem, mo plant i stap prodakem gud yet.
- Klinim ol pot wetem blij 10% mo wasem wetem klin wota bitwin evri raon blong wok, blong sik i no seraon.
- Stat wetem wan smol lot — samwe 10 kasem 20 pot — long ples blong yu, mo luk risalt bifo yu mekem bigfala wan.
- Raetem long wan buk: dei we yu stat, kaen kava, hamas pot, mo risalt. Long rod ia yu save kompeare wok blong yu long ol yia.
- Long testing, mane i stat long US\$2.33 kasem US\$8.18 blong wanwan han we i mekem rus mo oli planem — bigfala pat blong mane hemia wok blong han, i no gat glas haos.

## 8 Ol samting blong tingbaot

Testing ia hemia wan *pruf blong tingting*: i soem se metod i wok, be i no konfemem evri samting. Tingbaot ol samting ia:

- Oli mekem long **wan ples nomo** long Florida, long Yunaeted Stet — i no long Vanuatu. Graon, klaemet mo ol kaen kava oli defren.
- Oli testem tu kaen kava blong Amerika nomo (Kali-ISA mo Kali-Hiwa). Yumi **no save** olsem wanem ol narafala kaen bambae oli mekem.
- **I no gat kontrol grup** mo i no gat kompereson long semtaem wetem fasin blong katem stik. From hemia, yumi no save talem se metod ia i gud moa no i nogud moa.
- Oli lukaot ol plant blong 30 dei nomo afta oli planem. Yumi no save bakegen olsem wanem plant i gru, hamas rus i kamaot, no hamas kavaloktone i stap long taem blong harvestem.

### Advaes

Testem wetem wan smol lot fastaem bifo yu yusum long olgeta gaden blong yu. Sipos yu testem long ples blong yu, mifala i wantem save risalt blong yu: [admin@americankavaassociation.org](mailto:admin@americankavaassociation.org)

## • Sam moa foto blong wok



**Rus long skru**

Oli rus we i kamaot long skru afta oli tekemaot pot — i soem ples we rus i stat.



**Jekem long tebol**

Oli jekem mos mo oli rus taem han i stap yet long mama plant, oli no katem.



**Andanit long sed klos**

Wan pot we i open long wan plant long pot, andanit long sed klos.

## 9 Blong moa infomesen

Ful ripot (long Inglis), wetem ol tebol, ol referens mo evri foto blong wok, i stap long:

<https://www.americankavaassociation.org/study/air-layering-florida>

**Tok save:** Teknikal Pepa No. 4.1d hemia wan sot vesen long Bislama blong Teknikal Pepa No. 4 blong American Kava Association. Vesen blong Inglis No. 4 hemia stamba wan; sipos i gat eni defrens, tekem tok blong Inglis.

**Olsem wanem blong saetem:** Blythe, T.; Bowman, J.; McDonnell, B. *Outdoor Nursery Propagation of Kava (Piper methysticum) by Air Layering*. American Kava Association Technical White Paper No. 4; American Kava Association: Las Vegas, NV, USA, 2026.

Oli raeta oli jekem mo aprovem Pepa No. 4, be **i no bin go tru long ekstenal pia rivi** (*not externally peer reviewed*).

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