

**KA THUP
JINGHIKAI
TM 03 11/04**

**KA JINGPYNKHAROI
IA U SIEJ**



NATIONAL MISSION ON BAMBOO APPLICATIONS (NMBA)

Technology Information, Forecasting, and Assessment Council (TIFAC)

Department of Science and Technology, Government of India.



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Ia ka National Mission on Bamboo Applications (NMBA - Ka mishon ri kaba iadei ha kaba peit ia ka rukom pyndonkam ia u siej ha ka ri) ba la sdang da ka Department of Science and Technology (DST - Ka tnat jong ka saian bad ki buit pyntreikam) jong ka Sorkar India. La pynkhreh ia kane ka mishon da ka Technology Information, Forecasting and Assessment Council (TIFAC), ia kaba la pynkhamti ban pynkhie im thymmai biang ia ka phang ba dei ban bud bad pynroi ia u siej ha kiba bun ki liang. Ka kyrshan da kaba kyntiew ia ki buit pyntreikam, pynroi ia ka bor trei kam ba la bud ha la ki jaka bapher bad ki lad trei kam, bad ban pyniaid ia ka jingpynmih bad ka iew ka hat, ban pynbiang ia ka rynsan ban iaphylliew jingmut ia ki buit thymmai, bad pynrung ia ka jngsynrop bad jingiatreilang hapdeng ki tnat bad ki nongiasnoh kti kiba pher ha kane ka kam.

Ki hok kiba don ha kane ka kitab kot ki dei ka jong u nongpynmih. Ym lah ban pynmih shuh shuh ne pynkylla ha kawei pat ka rukom, da kano ka lynti, khlem ka jingioh jingbit na u nongpynmih.

La pynmih da ka:-

National Mission on Bamboo Applications (NMBA)
Technology Information, Forecasting and Assessment Council (TIFAC)
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KA 'TIEN LAM KHMAT IA KA JINGPYNKYLLA SHA KA KHASI

KA JINGDON BAD JINGBUN KI siej kiba tap palat ia ka khatsaw na ka shispah bynta (14 %) jong ka sla khyndew jong ka jylla Meghalaya ka donkam ka rukom pyniaid bad jingpyndonkam kaba biang khnang ba ka jingmyntoi kan kyntiew ia ka ioh ka kot bad plie lad ha kaba ai kam ai jam ia kiba bun. Da ka jingshimkhia ka Sorkar Kmie, ki tnat treikam kiba pher ki jong ka bad kiwei pat ki seng bei pisa, la lah ban pynmih katto katne ki skhim na ka bynta ban kham pynroi nadong shadong na ka liang u siej ha kane ka ri. Da ka jingiai wad bniah la lah ban tip ia ki buit ban kham pynroi bha ia ki siej, ban thung ban khet, ban shna bad nang kham pynbha ia ki mar ba thaw na ki siej bad da ka jingkyntu ia ki nongtrei kiba pher bad kiwei pat ki nongshim bynta ha kaba pyndonkam ia ki pisa na ki skhim ba pher ban pynkiew ia ka ioh ka kot.

Ka National Mission on Bamboo Application (NMBA) ka la dep pynmih bun ki kitab jinghikai kiba kynthup ia ki mat kiba donkam ha kaba pynmih bad pyndonkam ha ka liang ki mar siej. Ban kham pynioh jingmyntoi ha kaba pyndonkam ia ki kitab jinghikai ki ban plie lad ia ki nongrep bad ki nongtrei sorkar ha ki kyrdan kiba kham harum ban kyntiew ia ka jingthung bad jingpyndonkam ia ki siej, la sngew donkam ban pynkylla sha ki ktien kiba pher bad ba kham kongsan ba ju kren da kiba bun ki briew jong ki jylla kiba pher ka ri India. Kane ka kitab jinghikai ba la thoh mynta ka dei kaba nyngkong na ki kitab ki ban mih ter ter hadien ki ban pynmih ha ka ktien Khasi ba kren da bun ki briew ha ki thain Khasi bad Jaintia ha ka jylla Meghalaya.

Don bun ngut ki briew kiba la noh synniang ha kaba la pynkylla ia kane ka kitab jinghikai sha ka ktien Khasi. Ngam lah ban iaaid lait ia ka jingsngewnguh ia u V.S.Oberoi, Principal Secretary jong ka Government Meghalaya uba la ai mynsiem bad pyni lynti ha man ki khep kiba donkam ia ka jingiarap ka jong u bad kumjuh ia u V.K.Nautiyal, Principal Chief Conservator of Forests, Meghalaya. Ia ka jingpynkylla la leh da i H.Lato, Assistant Conservator of Forests, ia kaba la pynbha shuh shuh da u R.Shullai, Conservator of Forests (Research & Training), kiba la pynlut por khnang ha ka ban pynkylla Khasi ia kane ka kitab nalor ki kam ba la bynshet ha ki. U H.C.Chaudhury, Plannning Officer u la pynlut por khnang da ka jingtrei shitom ka jong u ha kaba pynwan dur pynwan dar bad ka jingshim khia ka jong u ban pynmih ia kane ka kitab jinghikai.

Nga kyrmen ba kane ka kitab jinghikai kan plie lad plie lynti ia kiba bun ki nongrep bad kito ki khun samla ka bri u Hynniew Trep kiba kwah ban rep bad pyrshang ban kamai ja kpoh na kaba rep bad pynmih ia ki tiar siej.

Clement Budnah

Chief Conservator of Forests (Territorial & Social Forestry)

Forests & Environment Department, Government of Meghalaya.

KA 'LAMKHMAT

DON KA LAD KABA BHA ban thung siej, ha ka ri India, da ki brierw ki ba shait thung barabor haki kper lajong bad ha ki jaka paitbah ban pyndap ia ki jingdonkam jong ki. Ka jingthung siej ka long ruh ka kam ba sngewtynnad ban ioh peit ba une u jait phlang u jrong bad heh kloï haduh ban da san bha. Kadei ruh ka kam kaba myntoi bad ba la sdang ban trei da ki ba bun ki brierw ha baroh kawei ka ri bad ha ki jaka paitbah lyngba ka jingbtin lynti jong ka sorkar.

U Mawjam ba nyngkong eh sha ka lynti thung siej dei ban ioh u symbai/tyndrai ban thung. Kumba ju leh ia u siej la pynkha da u symbai bad da ki wei pat ki rukom. Hynrei namar ba u siej u phuh syntiew hadien bun snem, bad ka rukom phuh bym thikna bad ka bym shem phang bha, na kata ka daw ia ka rukom pynkha da u symbai ka kham long niar bad bym ju bud. Da kaba bud ia ki rukom pynkha ha ki rukom mynshwa bad nang pynbha ia ki, ki riewstad ki la lah ban pynmih ia ki rukom pynroi kiba kham thymmai. Kane ka thup ai jinghikai ka wanrah ia ki rukom pynroi ba bun jait, ba la batai bniah bha. Ki rukom ba la batai ki dei beit ia kito ki rukom pynkha da u tynrai hi, ki ba lah ban pyndonkam da ki nongrep. Kawei pat ka rukom buit thymmai ka ba tip kum ka "tissue culture ne da kaba pyndonkam da i bynta ba rit eh u jingthung, kaba kham lutksan, bad donkam shibun ki tiar ki tar bad kynja dawai (medium), hynrei ym shym la batai hangne.



Ha kaba pynmih ia kane ka thup ai jinghikai, la ioh shibun ki jingtip ba la noh synniang da ki jingshem bad jingstad jong ki riewshemphang. U Dr.S.Pattanaik jong ka Rain Forest Research Institute (RFR) Jorhat, bad U Dr.K.Haridarshan, L.K.Bhuyan jong ka State Forest Research Institution (SFRI), Itanagar ki dei ki nong mait phang ha ka ban shna ne pynwandur ia ka kot ba la pynmih da ka kynhun jong ka NBMA (Saxena Pandey, Deepti Dabes, V.S.Oberoi) ki ba pynbit pynbiang bad la kynthup ruh ia ka jingkynthoh jong u Sudhir Pande, Dr.Sanjay Saxena jong ka The Energy Research Institution (TERI) Delhi bad jong u Dr.L.Banik bad Dr.Y.C.Tripathi jong ka RFRI, Jorhat. Ia ki dur ki dar la pynbeit da u Dr.S. Pattanaik, U Dr.Muktesh Kumar jong ka Kerala Forest Research Institute (KFRI) Dr.Sanjay Saxena bad ka kynhun jong ka (NMBA). U Indira Chandrashekhar u ba pynbeit ia kane ka thup bad ba la pynmih ia ki dur pat la dro da u Mugdha.

Baroh shilynter ha kaba pynkhreh ia "ka rukom thung bad pynkha ia ki siej" la ioh ia ka jingiarap jong ka kynhun ki riew shemphang ki ba pynbeit bad pynbiang ia kane ka thup ai jinghikai. Ngi sngewnguh shibun ia ka jingsynniang jong ki.

Ka jingthmu jong kane ka thup ai jinghikai ka long ban hikai ia ka rukom thung siej ha ka rukom kaba suk bad ban kdew ia ki lynti pynroi ki ba bha.

Vinay Sheel Oberoi

Mission Director, NMBA

November 2004.



■ Ka Jinglamphrang

U SIEJ U DEI U KYNJA phlang, ba long dieng bad ba heh kloï. La pyndonkam ia u ha ki ba bun ki rukom. Ka don ka jingdawa ba shyrkhei ia u siej ha India ha kine ki por khamtam ha ki rukom pyndonkam ba thymmai na ka daw ba la don ka jingkiew ha ki jingdonkam ia u siej kum u mar sdang ban pyndonkam (*Raw Material*)-. Ia kane ka jingdonkam la lah ban pynbiang lyngba ki kper siej ki ba la sumar bha ban pynmih shibun u siej.

Ka jingsdang jong kano kano ka kam ha ki kper siej khlem da ia khein ia ka jingheh lane ka jingbun ban thung ka ba donkam eh ka dei ia ka jingioh/ jingdon ki tynrai thung. Ka thup jinghikai ka batai halor ka rukom ban pynmih ia ki tynrai siej ki ba bha da kaba kdew bha ia ka rukom pynroi da kaba pyndonkam da ki bynta jong u jingthung hi (*Vegetative Propagation*).

Ki ba bun hi, la jan baroh ki siej ha ri India ki jait dei ki ba long shi lynnong (*sympodial*), bad ki siej ki ia lum lang hajuh haka dur ba kynrum kynram. Ka rukom pynkha ne pynroi is u siej ba la batai ha kane ka thup jinghikai ka iadei eh ba ki tei ki jait siej. ■



■ U Siej



U siej u dei u jait jingthung u ba don bun ki bynta. Na baroh khoit ki bynta jong u siej, u met bah (*culm*), u thied bah (*tyllong*), ki tnat (*branches*), ki mat (*nodes*) ki shylluait (*buds*) bad ki symbai (*seeds*) ki dei ki bynta ba kham kongsan ha ka ba pynroi bad pynkha.

U siej ym kum ki dieng ba long tang u wei u met bah- hynrei u don ar bynta u met bah, u wei u ba san shalor bad u wei pat u ba san shapoh khyndew. Baroh ar na kine ki long lyngkhot, lyngkhot, bad la bynta da ki mat.

- U met bah uba paw shabar u kynthup ia ki tang (*Culm*) ba bala pynlong da ki pungmat ba pynsyndait lang ha ki mat ba la ju khot u tang. Ki bynta ba ar ba pynlong ia u metbah ki dei ki tnat hi kiba mih na kynriang ki mat bad iar sha jarong ki tang.
- U metbah ba shapoh (*tyllong*) u long tylli bad kynthup ia ki mat, thied bad ki shylluid.

KI MAT BAD KI PUNGMAT

Ia u tyllong (*rhizome*), u 'tang jong u siej bad ki tnad jong u siej la bynta da ki mat (*nodes*) badap doh. Ki mat ki dei ki bynta ha kiba ki jingthung ba thymmai kum ki shylluid, ki thied bad ki tnad ki mih.

Ka bynta jong hapdeng ar tylli ki mat la khot pungmat (*internode*) bad ka jingjriong jong ki ka iapher na u wei u jait siej na u wei pat. Ia kito ki pungmat ki ba thylli shait sop barabor da ki kop (*sheaths*) ha ka por ba ki sdang heh bad kine ki kop ki hap noh hadien ba u siej u iaw.

Kito ki bynta ba rit eh (*cells*) jong ki pungmat la pynbeit da pynieng arsut shajrong u metbah, ban long kum ki pipe um ha ka ban pynkiew ia ki um shalor. Ka jingshong kiwei pat ki bynta rit (*cells*) ha ki mat ka long da pynkiang, ban pyniaid ia ki saphit bam (*nutrients*) bad ka um.



U 'tang

Ka bynta ba ithuh bha ia u siej dei u metbah ba khot 'tang'. U dei u bynta ba ju pyndonkam barabor. Ha ki ba bun hi ki jait siej u tang u long uba jriong ba long mat bad ba kynthup ia ki tyndong ba long rit sha khlieh. Ki 'tang kiba mih lympung ki ia lum shi lynnong .

U tang u don ki mat kiba kham paw ba la phiah ban pynllong ki pung mat. Man u wei pa u wei u pung mat u kit ia u shylluut uba pynmih ki tnad ki ba pynmih pat ia ki sla, ki syntiew bad ki soh.

U tang u mih na u shylluid jong u tyllong bad u sam ia ka khyndew kum u siej lung u ba la don lut ki bynta u jingthung. Hynrei haba dang rit u siej lung ha ka por ba u sdang mih u long jem, hynrei u heh kloie bad long dieng pat bad u kot ka jingjriong ba paka hadien 80 - 100 sngi.

U TYLLONG

U tyllong u dei u bynta u ba mih shapoh jong u siej. U san da pynkiang hapoh sla khyndew bad pyniar ia ki bynta shapoh jong u jingthung. U thap long kum u shriew, bad u wei pa u wei na ki bynta u thied bah u long rit sha tduh ban long kum u ryndang ban pyniasoh ia ki bynta u metbah.



Ki tyllong ki dei ki jaka pyllang bam jong u jingthung, ba la lum ha ka por ba u jingthung u iohthiah, bad la pyndonkam pat ha ka por u heh bad u san. Ka dur bad ka jingheh jong u tyllong, ka shong eh la u dei u siej ba mih marwei u tang ne lypung.

U tyllong ruh u don ki mat bad ki pungmat ba sop da ki kop. Ki thied rit ki ba dei na ka bynta tan jingbam bad sam jingbam ki mih na ki mat jong u tyllong.

KI SHYLLUID



Ki shylluid ki mih mar kyliang na uwei u mat ha uwei pat ha u tang bad tyllong jong u siej. Ki shylluid ba pynmih ia u tang ki don ha ki bynta ba halor jong ki mat, bad ki shylluid ba pynmih ia u tyllong ki don mar syndah ki mat ha ki bynta ba pdeng jong ki ar mat.

Ki shylluid ki dei ki bynta ba kongsan kiba pynlong ia u jingthung, bad ki ba pynmih ia u jingthung ba thymmai. Kumjuh ki shylluid na ki tyllong ki pynmih ia ki shylluid ki ban pynlong ia ki tang shabar.

Ki rukom mih ki shylluid ba pynmih ia u mat ka iapher na u wei sha u wei pat u jait siej; don kiba mih na ki mat ba sha trai sha khlieh bad don pat kiba mih na ki mat ba hapdeng sha khlieh.

KI THIED



Ki thied ki bat skhem ia ki tynrai ha khyndew bad iarap ha ka ban pyniaid ia ka um bad ki jingbam sha baroh ki bynta jong u jingthung.

Ki thied ki mih na ki mat jong u tyllong, ha ki bynta ba shapoh khyndew. Ha ki katto katne jait ki siej, ki thied ki shait paw sha bar khyndew ha trai ki tang bad ki tnad. Ka rukom sam ki thied ha khyndew ka long kaba jyndong, hynrei ki phriang bha.

Ym kum ki tang, ki tyllong bad ki tnad, ki thied jong u siej kim don jingphiah da ki mat ne sop da ki kop kum ha u met bah. Ki thied ba mih na ki mat ne bynta ba paitpnat ki tnad lah ban pyndonkam haba pynroi ha ki katto katne ki jait siej.

U Siej

KI TNAD

Ka rukom mih ki tnad ha u siej ka dei ka jinglong kyrpang jong uwei u jait siej uba pher na uwei pat u jait siej ha ka jingmih, jingdon bad dur jinglong ha u tnad bah bad tnad rit. U tnad bah u pynmih ia ki tnad rit ki ba mih na trai jong u mat. U tnad bah bad ki tnad ba ar ki pynmih pat ia ki tnad rit.

U 'tang jong u siej u sdang ban pynmih ia ki tnad hadien ba u la kot sha ka jingjrang ba paka. Ki tnad ki mih na ki shylluid ki ba don ha ki tang bad ki long mih mar kylliang shi lynter ki bynta u metbah.

Ka tynrai jong ki tnad ka lah ban sieb kum u tyllong siej bad ba lah ban pynlong kum ka bynta sdang ba pynmih thied ka ban iarap ha kaba pynroi lyngba ka rukom thung da ki tnad. Ia kane ka rukom pynroi da ki tnad lah ban leh pynsted da kaba ngor/weng ia ki bynta ba sha khlieh jong u metbah, bad weng ia ki tynrai thymmai na ki lynnong siej.



KI SLA

Ki tnad heh, ki tnad rit ki pynmih ia ki sla. Ki sla ki dei ki bynta ba kongsan ha ka ba u jingthung (siej) u shna ia ki jingbam. Ki iada ia u jingthung na ka jingkhriat bad u slap.

Bun na ki jait siej ki pynmih shibun bah ki sla ha kajuh ka por, ki hap noh shisien shisnem, bad pynlong ia ka jingtap ba rben ha khyndew ban long kum ka sboh. Ki sla ki dei ruh ki jingbam ba kongsan ia ki masi ki blang.



KI SYNTIEW BAD KI SYMBAI

Ki syntiew jong u siej kim don dop syntiew hynrei ki don ki sla kiba syndait ha tynrai. Bunsien ia ki symbai jong u siej u la pynphriang da ka lyer. Ki syntiew ki long ha kata ka dur bad ki long kum ki thapbniang sner ban pynphriang ia u symbai kylleng sawdong.

Na ka bynta ban pynroi, la shait iakren ba u siej ym ju kham phuh syntiew, lane bym thikna ka rukom phuh syntiew. U shait phuh syntiew hadien bun bun snem. Ka jing pynmih ia ki symbai kam long ka ba thikna.

U soh ha ki siej um ju pait ynda la ih, u don tang iwei i symbai ba la tip kum i caryopsis. Ka jingheh u soh ka pher ba lah ban long tang kat u symboh symbai bam (khaw, kew ne krai) ne kat u soh pyriam uba dang rit. ■

■ Ka Jingsan U Siej

U siej u dei u jingthung ba donkam bha. La don ki jingthoh ba ia u siej lah ban pyndonkam ha ki bun hajar ki rukom jingpyndonkam, bad la nang lap shuh shuh ia ki rukom pyndonkam ia u siej ha kane ka juk mynta.

U siej u dei u jingthung u ba suk ban thung.

U dei u jait phlang ba heh kloï bad ba lah ban mih ha kino ki jait jaka bad jinglong suin bneng. Haba thung, u donkam tang malu mala ka jingsumar, katba u pynmih pat man u snem ia ki tang bad bun bun snem.



U siej uba mih ha ki jaka shong briew

Ia u siej lah ban thung bad la thung na ka bynta bun ki daw.

- Ha kylleng ka ri India, ki briew bad ki shnong ki thung bad sumar ia ki siej ha ki kper ing jong ki. Kane ka iarap ia ki ban pynioh ia u mar u ba ki pyndonkam barabor ha ki bun rukom. Kane ka iarap ban pyndap ia ka ioh ka kot jong ki na ba die ia ki siej bad ki siej lung.
- Ki nongtrei wai ki thung bad ot siej na ka bynta ban khaii ha ki iew, ka jingthung ha ki jaka lajong ha ka rukom ba paka ka long kaba myntoi ha ka kamai kajih.
- Don ki briew kiba don jaka ki thung siej ba don dur don dar ban pyn-itynnad rong ia ka kper. Kane ka lah ban dei ha ka dur ba long shi lynnong ne ha ka dur jingker ia ki kper bad don pat ki ba thung wat ha ki khiew khra. Ki siej ki lah ban long kum ka jingda ia ka ing ban nym iohi ki briew nabar.
- Ki nongrep ki thung ia ki khlaw siej ban long kum ki nongkah na ka lyer.

Ka ri India ka long ka thymmei ba bun u mar siej. U mih ha ki khlaw bad ha ki jaka ba bun jait. Ia u siej la thung ha ki kper iing kumjuh la thung shibun bah ha ki bri/kper la jong, lane ryngkat bad kiwei ki jait jingthung.

Ka rukom thung ha ka rukom pyniaid kaba paka ha ki kper ban pynmih shibun ki siej ka la khring bha ia ki bun ki briew ha kane ka por mynta.

Ka sorkar ruh ka iai pynshlur ia ka thung siej ha ki khlaw, ki kper, ki jaka shimet, ki jaka shnong bad kyntu ia ki briew ban sdang kam lajong.



U siej ba pynmih ha ki kper/ jaka thung siej

Ka Jingsan U Siej

- Ka rukom thung bun bad pynmih bun ka wanrah ia ka jingioh ba thikna ia u siej ba bha. Kane kan iarap ruh ha ka ban pyndap ia ka jingduna na ka bynta ki jing pyndonkam ha ki rukom ba thymmai.
- Kaba thung bun, ka jingioh shibun ia u siej, ka rukom jingpyndonkam ka plie lad ha ka ban pynioh kam ioh jam bad pynkiew ia ka ioh ka kot.
- Ka thung siej ha ki jaka shrah bad ki jaka ba lait ka iarap ban pynkhie im bad ban pynskhem ia ka khyndew, bad iada na ka jingjulong ka khyndew.

Ki kper siej ki donkam ka jingai um bad ka sboh, bad ka long ka ba pynmyntoi lada bud ia ka rukom ba la pynbha bad pynthymmai.

Ka long kaba donkam ban pyndonkam ia ki tynrai ki ba bha. Ka rukom jied ia ka jaka ban pynmih ia ki tynrai ka dei ka rai ba kongsan ba u Nongrep u dei ban bud.

- Ka long kaba donkam namar ka lah ban ktah ia ka koit ka khiah bad ka jingheh jingsan jong u jingthung - bad ka jing pynmih.
- Ka ktah ruh ia ka dor ha kaba sdang seng ia ka kper rep siej. ■

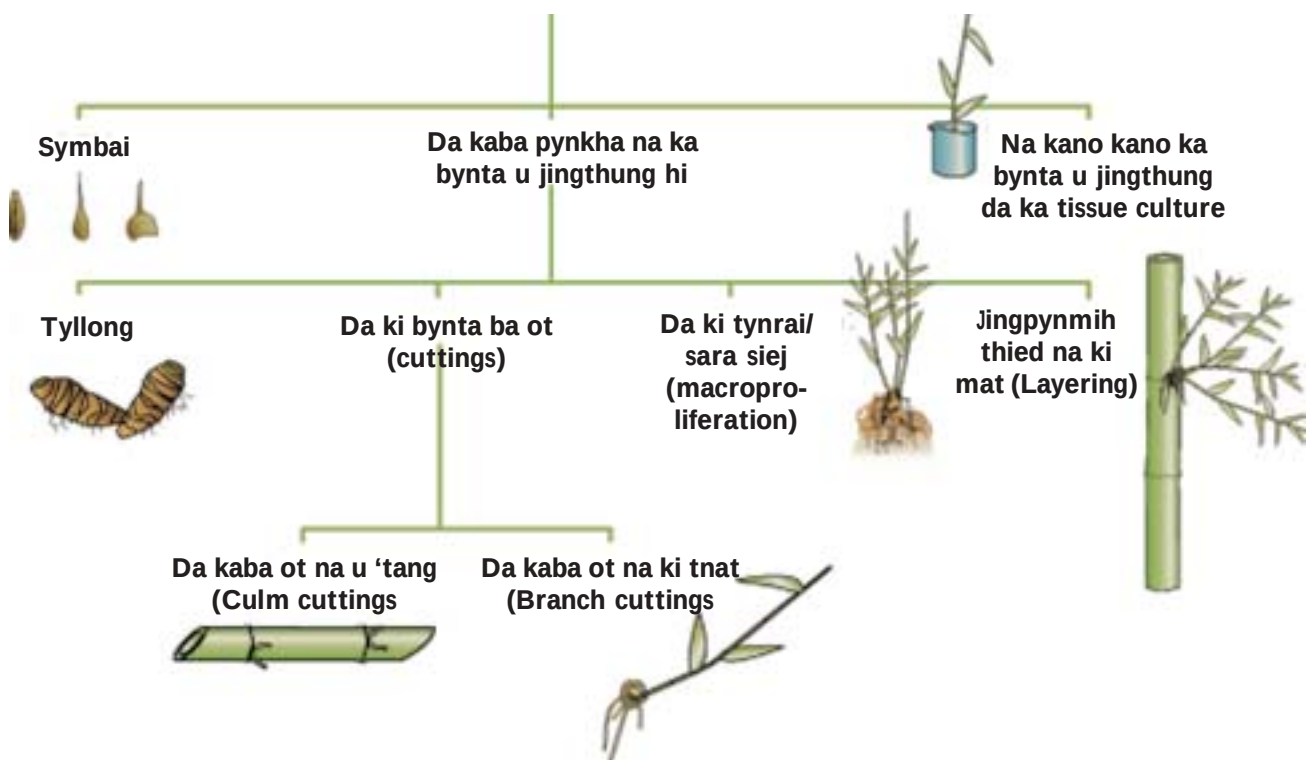


■ Ka Rukom Pynroi Siej

LA JAN HA BAROH KI JINGTHUNG ha pyrthei, ka rukom kaba suk bad ban pynroi ka dei lyngba ki symbai. Sniewbok ba ha u siej kane kam ju kham jia koit.

Ym ju kham ioh ia ki symbai siej naba don ki jait siej ki bym ju puh syntiew. Ki don pat ki jait siej kiba mih syntiew hadien bun snem. Wat lada ioh ia ki symbai hynrei ki duna bha ha ka jingspeh lung.

Ka Rukom Pynroi Siej





Ha kane ka thup jinghikai, ka thong ka dei halor ka rukom pynkha/pynroi na ki symbai bad lyngba ki bynta ba pher/ jong ki jingthung. Kine ki dei ki rukom ba la shait bud naduh mynshwa bad ki ba kham ju pyndonkam barabor. Ha kine ki por ba mynta lyngba ka jingwad lad la lah ban nang kham pyntbit ia kine ki rukom ha ki ba bun ki liang, khamtam ha ka rukom pynroi da ki bynta jong u jingthung hi.

Ka rukom pynroi da ka ba pyndonkam ia i bynta ba rit jong u jingthung hapoh ki jaka sumar ba la thaw kyrpang ka dei ka buit thymmai, ha kaba ia ki siej lah ban pynroi, hynrei la pyllait noh shwa na kane ka rukom ai jinghikai ha kane ka kot. Ka dei ka rukom kaba sted bha ha ka ba lah ban pynmih shibun tylli ki tynrai jong uno uno u jingthung. Ka rukom ka long da kaba buh ia i bynta jong u jingthung (Ka bynta u met bah, ki mat, ki symbai) ha ka sboh ba la dep shet hapoh ki kor ki ban pynneh ia ka shit ka khriat kaba biang. La don shibun ki jingthoh kiba pher ha kaba pynmih ia ki tynrai siej kiba iaid iew ha ka khaii ka pateng da kane ka rukom. Kane ka rukom pynroi lyngba ki tissue culture ka donkam shibun ki jingpynlut pynsep ha ka ban shna ia ki iing ki sem, ki tiar ki tar, ka rukom sumar kaba paka bad kumjuh ruh ka rukom trei. ■

U bynta jingthung uba mih na u symbai u shim por ban heh paka ban ia uto u jingthung u ba la pynkha/pynroi na kiwei pat ki bynta jong u jingthung.

Ka rukom pynkharoi na ki symbai ka ai lad ban pynioh bun jait ki jinglong ha u jingthung jong kajuha jait. Ka rukom pynkha na kiwei pat ki bynta u jingthung kan pynmih ia ki jingthung ba don ka juh ka jinglong bad u kmie.

Ha ka jingpynkharoi na ki symbai, ia ka jingsdang jong ka jingim u jingthung la lah tip. Ka jingtip ia ka por ban puh syntiew ka kdew ruh ia ka jingtip ia ka rta u siej kata ia ki lypung siej. Ha kaba pynroi da ki bynta u jingthung ym lah ban tip ia ka jingsdang ka jingim u siej, lait noh da ka jingkhmih bniah ba bun bun snem bad ka jingbuh jingthoh ia u trai kmie ha kano ka rukom la ioh bad lano un sdang puh. Kham niar ba lah ba leh ia kane.

Ha bun ki siej kiba iaid iew, la buddien da ka jinglum symbai hadien ba puh syntiew bad jingiap u siej kmie. Na ka bynta kum kine ki jait siej, ka long kaba ma lada ym tip ka jingsdang bad jingkut jong ka jingim u siej lada ki tynrai jingthung ki puh syntiew tang katto katne snem. Ia kane ka jingma la kham iaid lait namar kum kine ki siej ki don ka jingpud ha ka jingphuh syntiew hadien da ki phew snem.

■ Ka Rukom Pynkharoi Lyngba Ki Symbai

KI BRIEW KI KHAM JIED IA U SYMBAI SIEJ u ba kham tad dor bad u kham suk ha ka ban pynroi. Haba u siej u phuh syntiew bad pynmih symbai, ka rukom kaba lah ban jia hadien bun phew snem -ka rukom pynkha na u symbai ka long kaba thikna bad ba lah ban pynmih da ki million ki tynrai siej.

Ha ki snem kiba u siej u phuh syntiew (kum ha ki por ba u phuh paitbah) u shait phuh bun bha ha ki bnai naduh u November -April. Wat lada ia ki symbai shait ioh naduh u bnai March-April ter ter, ki symbai ki ba long ha u bnai May-July ki kham bha bad im slem

Ka jingheh jong u symbai siej ka iapher na uwei ha uwei pat u jait siej.

- U symbai jong u siej watah (*Bambusa bambos*) ki rit. Shi kilo ka kit haduh kumba 1,00,000 tylli ki symbai.
- U *Bambusa tulda* (siej rngai) u pynmih ki symbai ba kham rit shuh shuh, lah ban don haduh 1,25,000 tylli ki symbai ha ka shi kilo.
- U symbai jong u *Melocanna baccifera* (tyrlaw) u heh bha. Ha ka shi kilo u don tang kumba 65-70 tylli. Ka jingheh u soh ka long kat u sohpyriam lane u soh apple rit.

U symbai u siej *Melocanna baccifera* (Kh: Tyrlaw, Siejla)



Ka jingmih bun u symbai na ka shi lynnong u siej lane na ka jaka ka shong ha ki jait siej.

- U *Bambusa bambos* (siej watah) u lah ban pynmih shibun bah ki symbai, ki ban tap lut ia ka madan ha ki khlaw ba u mih. Shi lynnong jong u *Dendrocalamus strictus* (siej ba shiah) u lah ban pynmih haduh 30-35 kg u symbai.
- Don ki jait siej ki bym ju phuh syntiew bad ym don jingthoh shaphang ka jingphuh syntiew jong ki.
- Don ki jait siej ki ba phuh syntiew hynrei kim long symbai. Don ki ba pynmih symbai hynrei tang khyndiat eh. Ia ki symbai jong kum kine ki jait siej ka long ka ba shitom ban ioh namar ki duna ka jingmih, lane ki lah ban mih uwei hangne uwei hangtai.
- Kum u *Bambusa balcooa*, *B. vulgaris*, ki dei ki artylli ki jait siej kiba shait thung bha ha kper iing, hynrei kim ju kham phuh syntiew. Lada ki phuh syntiew, ka rukom phuh ka bym thikna bad ki phuh hadien bun snem, ki phuh tang uwei ar shi jaka shi sien phuh. Kum kane ka rukom phuh kam lah ban pynmih symbai. Ia kine ki jait siej lah ban pynkha da kaba pyndonkam ia ki bynta jong u siej hi ha ka ban pynroi. Kawei pat ka lad ban pynroi ia ki ka long lyngba ka tissue culture.

Don ka jingeh lada shaniah ha ki symbai siej kum ki tynrai ha ka ban pyndonkam ban pynroi ia u siej. Ka jing ioh ia ki symbai ka long ka bym ryntih, bad bym thikna namar ka por hadien ba la dep phuh syntiew bad ban phuh pat sa shisien jong kiba bun ki siej ka jrong palat.

Ka rukom phuh syntiew ka pher na u wei ha u wei u jait siej. Ha ki jait siej kiba phuh syntiew hadien bun snem, ka rukom phuh ka lah ban long ar jait -kaba phuh marwei hangne hangtai bad phuh paitbah.

- Ha ka rukom phuh syntiew paitbah, ki siej kiba don kito ki jaka ki phuh lut, kynthup la jan ia baroh khoit ki lynnong bad baroh ki tang siej kiba don shi lynnong hapoh ka por kaba lah ban kot haduh shibnai ne haduh shisnem.



U symbai u siej *Bambusa tulda* (Kh: rngai)

Ka jingjrong ka por phuh jong katto katne ki siej ba long kynrei ha ri India.

U jait siej	Ka jinglong ha ka por phuh (Flowering behaviour)	Ka jingpud por ki (snem)
<i>Bambusa balcooa</i>	Phuh paitbah; kham niar ban phuh; ym pynmih symbai	35-45
<i>Bambusa bambos</i>	Phuh paitbah, teng khat phuh marwei hangne hangtai	40-60
<i>Bambusa nutans</i>	Phuh marwei hangne hangtai, teng khat phuh paitbah	35
<i>Bambusa pallida</i>	Phuh marwei hangne hangtai	40
<i>Boambusa polymorpha</i>	Phuh paitbah/ phuh marwei hangne hangtai	55-60
<i>Bambusa vulgaris</i>	Phuh paitbah hynrei kham niar, teng khat phuh marwei hangne hangtai	Palat 80
<i>Bambusa tulda</i>	Phuh paitbah, teng khat phuh marwei hangne hangtai	30-60
<i>Dendrocalamus brandisii</i>	Phuh paitbah/ marwei hangne hangtai	40-45
<i>Dendrocalamus giganteus</i>	Phuh paitbah	40,80
<i>Dendrocalamus hamiltonii</i>	Phuh paitbah/ phuh marwei hangne hangtai	30-40
<i>Dendrocalamus strictus</i>	Phuh paitbah/ phuh marwei hangne hangtai	25-45
<i>Melocana baccifera</i>	Phuh paitbah palat, niar ban phuh marwei hangne hangtai	30-35,45,60
<i>Ochlandra travancorica</i>	Phuh paitbah	7-15
<i>Oxytenanthera stocksii</i>	Phuh paitbah, khlem pynmih symbai	40-45
<i>Schizostachyum dullooa</i>	Phuh paitbah/ phuh marwei hangne hangtai	30-45
<i>Thyrsostachys oliveri</i>	Phuh paitbah	48-50

- Ha ka phuh syntiew marwei ym dei baroh ki siej ha ka shi lynnong kin phuh, hynrei tang uwei ne ar ki tang ha ka shi lynnong.
- Don ki jait siej kiba phuh syntiew paitbah, don pat kiba phuh syntiew marwei, don pat ki jait siej kiba phuh baroh ar jait ka rukom phuh syntiew.

Ka por/aiom phuh syntiew u siej ka iapher na u wei ha u wei u jait siej.

- Don ki jait siej kiba phuh man u snem lane hadien tang khyndiat por.
- Kiba bun ki jait siej kiba donkam bad iaied iew ki long ki ba phuh paitbah, ki phuh hadien bun snem bad ki phuh ryntih hadien ka jingpud por.
- Don katto katne ki jait siej kiba phuh marwei bad ka rukom phuh ka bym biang ka jingpud.

Wat haba phuh syntiew kim ju kham lah ban pynlong symbai. Ka jing ktah ha ka rukom phuh syntiew ha kaba bun ki jait siej ka iapher.

- Don katto katne ki jait siej kiba iap hadien ka jingpynmih soh kaba nyngkong.
- Don katto katne ki jait siej kiba iap noh hadien ba lah dep pynmih soh bad don pat kiba khie lung biang ha ka jaka jong kito kiba iap.
- Don katto katne ki jait siej ki bym iap hynrei ki phuh syntiew bad pynmih soh thikna ne bym thikna ha man ka por.
- Ha ka rukom phuh syntiew paitbah, kito ki lynnong kiba shah ktah bad ruh baroh ki siej ha ka shi lynnong ki iap noh suki suki.

- Ha ka rukom puh syntiew marwei ki tang jong ki katto katne ki siej kiba shah ktah ki iap, hynrei kiba sah jong ka shilynnong ki lah ban iap ne ban nym iap. Ha ka jingshisha don ha ka shilynnong ki jait siej kiba lah ban khie im biang bad nang pynkhlain ban pynmih ki tang kiba koit ba khiah.
- Ha ka rukom puh syntiew ba marwei hangne hangtai ha baroh shi lynnong ha kiba bun ki khep baroh ki siej ki iap, hynrei don ki jait siej ba ki tang kim iap hynrei ki im biang ba pynmih ia ki siej ba koit ba khiah.

Ka rukom lum bad kynshew ia ki symbai kam long kaba la ioh ban lum bniah bha ha u siej. Wat lada ioh ia ki symbai, hynrei ka jingbha bad ka por ba ki lah ban khie im kam long kaba paka, bad ym tip hi ruh.

Namar kiba bun hi ki siej ki mih ha khlaw, lah ban iada ia ki symbai tang khyndiat khynsoit, ki hap shah ia ki jingma bun jait kum na ki khniang, ki sim, ki khnai bad na kiwei pat ki jait mrad. Shuh shuh, kumba ju long barabor ki symbai jong ki jait siej kiba long shi lynnong ki hap bad mih lung noh tang hapoh khyndiat taiew. Ia kine ki symbai katba lah dei ban lum kloï.

Ki symbai barabor ki lah ban bat ia ka bor speh lung jong ki tang hapoh khyndiat por. Donkam ban buh ia ki ha ki jaka ba kyrpang, ban pynduna ia ki jingsngem, ka jingshit. Kane kan iarap ha ka ban bat ia ka jinglong bha jinglong miat jong ki katto katne por. Kum kine ki lad ki don tangba ym don ki jaka ba kyrpang bad bym kham ioh ka rukom lum symbai kiba biang.

KA JINGLUM SYMBAI

Ki symbai siej ki hap ha madan ha ba lah ih. Ha ka por ba la ih lut baroh ki symbai, dei ban pynkhyniun ia u siej ban pynhap najrong ia ki symbai ha ki jingpdian jain/plastic sheet. Kane kan iarap ban pynioh lum ia ki symbai ha ka rukom ba kham khuid ban ia ka ba shu jied na madan.

Ka rukom lum symbai ka kham suk lada pynkhuid ia ki niut bad jaboh ha kito ki jaka sawdong ki lynnong siej. Lah ban leh da kaba buh ia ka jain heh ne ka jri ha khyndew ha ka jaka ban hap symbai.

Lada ym lah ban leh ia kawei na kitei ba la kdew hajrong, ia ki symbai dei ban pynkhuid da kaba peh da u prah (khamtam ia ki symbai barit) da kaba pynkhuid ia ki skain, ki khniang bad kino kino ki jaboh ba long ha kiwei pat ki rukom dur.

KA RUKOM BUH KYNSEW IA KI SYMBAI

Wat lada ki symbai siej ba dang shu ioh ki speh lung kloï ban ia kiba la kynshew, ka rukom kynshew kaba kham bha ka iarap ban pynjlan ia ka por im jong ki symbai kumba katto katne por. La lap ba don ar jait ka rukom kunai ba kham bha: (i) kaba kunai tyrkhong da kaba pynduna ia ka jingsngem bad (ii) Ka rukom kunai tyrkhong da kaba pynbeit/pyniaid ia ka jingsngem bad jingshit; na kine baroh ar kaba nyngkong ka dei kaba kham suk khamtam ha kito ki jaka ki bym thikna ka jing ioh bor ding elektrik. Ka rukom kaba ar pat ka kham bha shibun.

Ka Rukom Kunai Tyrkhong Da Kaba Pynbeit/Pyniaid Ia Ka Jingsngem

Kaba buh ia u symbai ha ka jinglong ba duna ka jingsngem kan pynduna ia ka ring pynhiar mynsiem bad pynslem ia ka rta ki symbai. Ha kane ka rukom ia u symbai la pynrkhiang haduh ba ba kin don tang 8 - 10% ka jingsngem. Nangta buh ha ki synduk plastic bym lait lyer, ba don u calcium chloride hatrai (kumba 1/10 bynta jong ka jingkhia ki symbai) ban long kum u nong pynrkhiang. Kaba pyndonkam bun ia u calcium chloride ka long kaba ma kaba lah ban pyntyrykhong palat ia u symbai. Dei ban buh da ki jar nar halor u calcium chloride shwa ban buh ia ki symbai hapoh synduk. Tengkhath ia kine ki synduk bym lait lyer la buh shwa hapoh ka jaka pyntyrykhong ne ha ka kamra ba la pyndait da ka tiar ban pynduna jingsngem.

Ka Rukom Kynshew Ban Pyntyrykhong Da Kaba Pynbeit/Pyniaid Ia Ka Jingsngem Bad Ia Ka Jingshit

Nalor ka jingsngem, ka jingshit ruh ka ktah bha ia ka jingmih jong u symbai. Ka jingshit ba kham duna kan pynduna ia ka ring pynhiar mynsiem bad pynjlan ia ka por im ki symbai. Na kata ka daw ka jing pynbeit ia kitei baroh ar kan pynbha ban pynsah ia ki por im jong ki symbai.

Ka shong ha ka jingheh jong u symbai ban kynshew, ka jaka pyndaitthah lane ka machine pynkhriat ba la pyndonkam ha ki jaka kynshew. Ia ki symbai ba donkam ban pyntyrykhong la pynduna kumba 8 -m 10% ka jing sngem, nangta sa buh ha ka machine pyndaitthah da kaba buh ha ka jingpjah kaba haduh -10° - 14°C. Kane ka rukom ka donkam ia ka bor ding ka bym thut, bad lada don ka jing kiew jinghiar ka jingshit ba bunsien kan ktah bha ia ka jingim slem u symbai ba la kynshew.

Ka Jingphikir

- Ia ki symbai dei ban pynkhuid bad buh kloi ha ki jaka kynshew ban ym pynduh ia ka jinglong mih speh.
- Ki symbai kiba kham donbor ban speh bha dei ban jied ban kynshew.
- Ia ki symbai ba la shah pynjulor ha ki khniang ym dei ban kynshew.

KA RUKOM WIEH IA U SYMBAI

Ki symbai ba la ioh da kaba puh syntiew paitbah ne puh marwei dei ban bet noh kloi hadien ba lum. Katba nang kloi ban bet katta nang bha ki jingspehlung ki symbai.

Kaba wieh ha um kan kham/pynkloi ia ka jingspehlung ki symbai. Ka rukom sumar shwa ban bet ia u symbai da ka ba wieh ha ka um shimiet lane 24 kynta dei ban bud.



KA RUKOM SARA IA KI SYMBAI

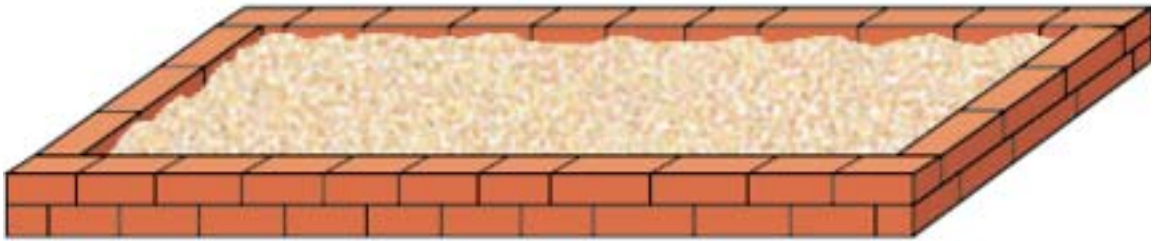


Ia ki symbai lah ban bet ha ki bunn, ha ki khiew ne ki pla plastic na ka bynta ban sei lung. Da kaba bet ha ki bunn ba la mang ban sara kan iarap ha ka ban ai jingsumar ba paka bad ka jingsngem na ka bynta shibun bah ki symbai. Nakata ka daw ka rukom bet ha ki bunn sara dei ban jied. Da ka ba bet ha ki khiew ne ki pla plastic lah ban bet khyndiat u symbai. Kaba bet ha ki jaka thung kam long kaba sei soh bad thikna.



Ka bunn sara ka dei kaba rit ba long ha jrong bad ba la pynkhreh bha. Ka dei ban don ki jingshna na ka bynta ki jingtap nalar bad ki nala ban ai um man ka sngi. Ka jingheh ka biang eh ka dei 5m x 1.2m x 15centimeters.

Wat lada ki symbai ki lah ban speh lung ha u shyiap hynrei dei ban khleh maw ryngkat ka jingdon ia ka khyndew, u shyiap bad ka eit masi. Ia kane ka jingkhleh dei ban kynrih ha ka prah/ pdung kaba don thliw kumba 2mm eiei. Ia ki symbai dei ban bet tang shi lain shi lain ter ter ,ban ia kaba shu ber saphriang hangne hangtai. Hadien ba la dep bet dei ban ber stang pat najrong da u shyiap ba khleh.



Ka lynter: 5 meters, Ka pyniar: 1.2 meters, Ka kynjang: 15 centimeters

Ia ki symbai la khmih lynti ba kin speh lung hapteng shitaiew hadien ba la dep bet. Ia ki sara dei ban ieh beit ha ki jaka sara haduh ba kin da kot ka jingjrong ba 8 - 10 centimeters lane pynmih 4 - 6 sla.

Hadien ba ki la kot sha katei ka jingjrong, dei ban weng noh bad thung ha ki pla plastic ba don ka jingheh 6 x 8inch / 5 x 7 inch/ 4 x 5 inch bad kane kan long kat kum ka jingheh u symbai bad pynkynriah noh ha ka jaka ban pynbun, lada donkam ban nang pynbun shuh shuh. Ia ki symbai ha ki pla plastic dei ban ai um man ka por bad ai jing da/ kah dum malu mala nalar jong ki. Lah ban rah pat ia ki sha ki jaka thung hadien ba ki kot ka jingjrong ba 2 - 3 phut.

KA RUKOM PYNBUN IA KI SARA

Ka bun pynroi ka dei ka kyrdan pdeng hynrei ka bynta kaba donkam shwa ba ia u siej yn buh ha ki pla plastic. Ka ai por ia u jingthung ban heh ban plung bad ai lad ruh ha kaba thiew ia ki tynrai ki bym da shait da koit.

Ka jingheh ba biang jong ki bunn na ka bynta ban nang pynbun ia ki sara ka dei 10m x 1.2m x 15centimeters. Ia ka jingjrong jong ki bunn lah ban pynheh shuh shuh lada donkam. Ia ka pynkiang pat dei ban buh beit tang 1.2 meter ban suk haba ai um bad sumar. Kumba leh ha ki bunn ba bet symbai kumjuh dei ban pyndap da ka khyndew ba khleh shyiap, ka eit masi bad ba la dep kynrih ha ki bynta ba marryngkat. Ia ki sara dei ban thung ha ka dur shilain ter ter ha ka jingjngai ba 30 centimeters kawei na kawei pat. Ia kine ki bunn dei

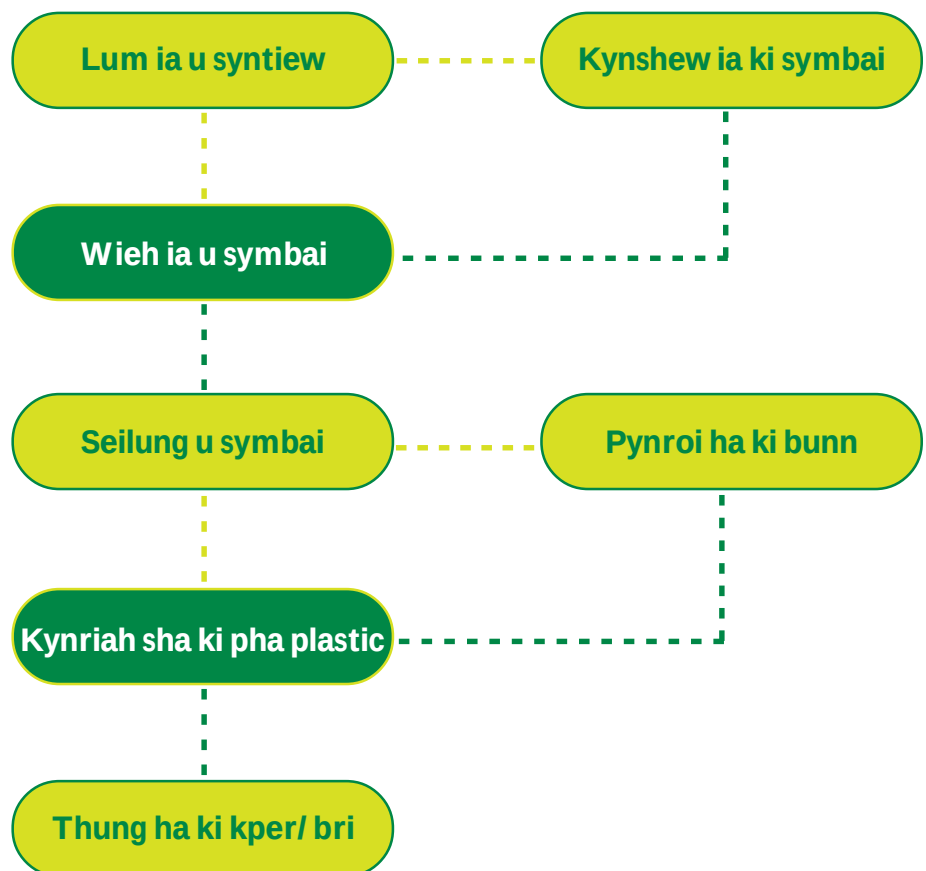
ban ai um man la ka sngi hapoh 15 sngi. Nangta pat sa pud sngi. Dei ban don ka jingkah khyndiat na jrong (75% ka jingdum dei ban ai da kaba pyndonkam da ki agro nets). Ki tynrai sara ki long paka na ka bynta ban pynroi hadien saw bnai.

KA JINGTIP SHAPHANG KI JAIT SIEJ

Napdeng kito ki jait siej kiba iaid iew ki symbai u *Dendrocalamus strictus*, *D. hamiltonii* (siej lieh) bad Bambusa bambos (siej watah) ki suk ban ioh. Kane ka dei na ka daw ba ki don ha ki bun ki jaka bad ki phuh syntiew jan man u snem ha ki katto katne ki bynta jong ka ri.

Ha ki snem 2004 - 2007, ia ki symbai jong u *Melocana baccifera* (tyrlaw) lah ban ioh na kito ki jaka ba u phuh syntiew paitbah. Ki bym thikna ban ioh symbai ki dei ki jait siej kum u *B. balcooa* (barua), *B. vulgaris* (nat shilot) bad *Oxytenathera stocksii* bym ju kham phuh syntiew wat la ki phuh ruh kim long symbai. Ka lad ban shaniah ioh symbai na kine ki jait siej dei ban klet. ■

KABA PYNKHAROI DA KI SYMBAI - KI LYNTI BA KONGSAN



■ Ka Rukom Pynroi Na Ki Bynta Jong U Jingthung

KA NONGRIM BA KONGSAN halor ka rukom pynroi da ki bynta jong u jingthung ka dei ban shim na ki bynta kiba bha jong u siej. Kine ki bynta ki lah ban dei u tyllong, u met bah (tang), u tnat, uwei ne baroh na kine ryngkat bad ki thied, ki mat bad kiwei kiwei pat ki bynta. Dei ban pyndonkam da katei ka nongrim, ban ioh ia u jingthung ba paka ba dang rit uba lah ban heh ban san sha u jingthung ba koit ba krat.

Ka rukom pynroi da kaba pyndonkam da ki bynta jong u jingthung kan pynmih ia ki lyngkhot tynrai ba long thik kum u kmie. Une u jingthung ba dang rit u don lut ki jinglong jong u jingthung ne u ba lah ban pyndonkam (u thied bah, u tang ne tnad). Kine ki tynrai kiba la pynmih ki long kumjuh haka rukom bad ka por phuh syntiew kum u kmie bad ka lah ban wanrah ia ka jingma ban

Ka jingpynkha roi da ki bynta met ha u siej *Bambusa balcooa* (Kh: Siej boroa)



Ka dei kaba donkam ban jied bad pyndonkam ia ki bynta u tang kiba lait na ki jingpang, kiba shait ba koit, kiba khlain bad ki tang ba la pura. Kane ka donkam ia ka jingsngewthuh ia ki jinglong ki bynta met jong u siej bad ki rukom long ha ka jingheh jingplung. Ia kane ka jingtip lah ban ioh na ka imlang sahlang bad na ki briew kiba thung bad ot siej. Ki nongtrei ki bym da pnah ne tip bha shaphang ki jait siej kin nym lah ban jied ia ki jingthung kiba bha duh.

phuh syntiew bad iap noh tang hadien khyndiat por hadien ba la dep pynroi (pynmih). Kane ka rukom pynroi, ka donkam ka jingheh jingsan ba paka jong ki bynta ba kongsan jong u siej kum u thied bah, ki thied, u tang, ki tnad bad ki sla. Lada u wei na ki bynta ba kongsan um long bha, kan wanrah ia ka jinglehnohei ia ki bynta jong u jingthung baroh uwei.

Ka rukom pynroi ba shait bud mynshwa ka iahap tang ha kito ki bynta ki ban pynmih khyndiat khynsoit ki siej ban pyndonkam na ka bynta ka jingdonkam u nongrep na kine ki daw harum.

- Ka rukom bad ki lynti ba trei ki jem bad ba la dep tynjuh lyngba ka por.
- Ha kane ka rukom pynkha la pyndonkam da ki tiar ot ba shait pyndonkam, kum ka wait ne ka machete ba lah ban pynbiang hi da u nongrep.
- Kane ka rukom ka kham tad bad kham treikam.

Ka rukom pynkha da kaba pyndonkam da ki bynta jong u jingthung ka dei na ka bynta ka jingdonkam ba khyndiat ym ban pynmih shibun ban khaii.

- Ka donkam shibun ki nongtrei.
- Ka don ka jingthud ha ka ban ioh shibun ki bynta jong u jingthung kiba lah ban khlong na ki lynnong khlem da pynjulong ia ki.
- Kan don ka jingsniew ia ki lypung siej ha ka por ba khlong ne ot. Ka jingjulong ia ki shylluid jong ki thied ha ka por ba khlong bad kit kan pynlong lehnohei ia kane ka rukom pynroi.
- Ka rukom kit shibun bah ia ki tynrai thung ka long kaba rem dor. ■

Ki tiar kiba kham pyndonkam kynrei na ka bynta ban ot/pynkhlad bad ban tih



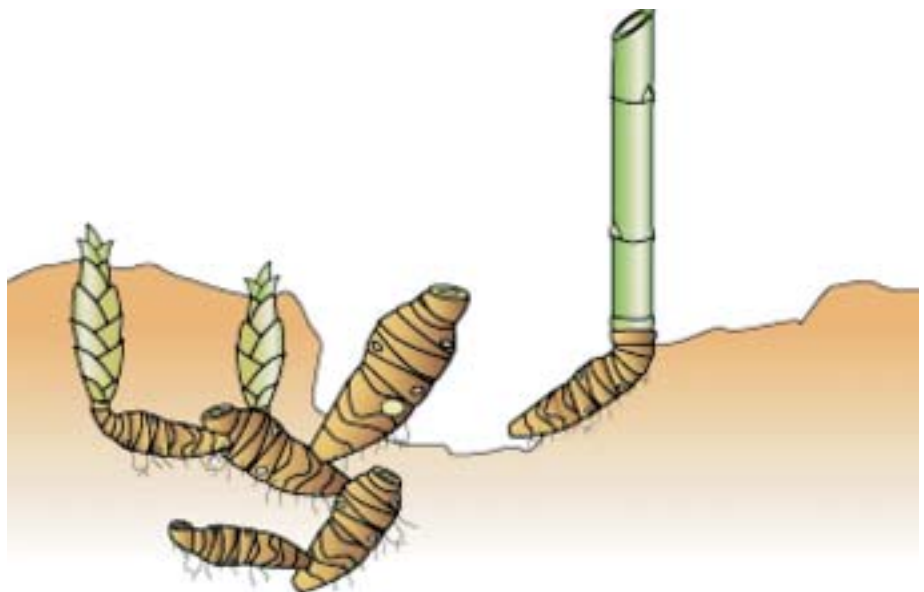
■ Ka Rukom Pynroi Da Kaba Pyndonkam Da Ki Tyllong

IA KANE KA RUKOM BA la shait pyndonkam naduh ki por mynshwa bad ba ju leh barabor da kaba la pyniakhlad ia u lyngkhot tyllong na u tyllong kmie bad ba la sumar ban pynheh sha u tynrai ban thung.

Ki bynta ba la kdiah na u tyllong ki don lut ki jinglong ki ban iarap ban pynmih ia u jingthung thymmai. Dei ban pyniakhlad noh ia une u tynrai khleh bad kiwei ki bynta kum u tyllong rit, ki thied bad u tang.

Kaba long kyllum ia baroh ka rukom pynroi ka dei ka jingot ia u bynta jong u tyllong na ki lynnong siej ba khiah krat.

Ia kine ki tyllong dei ban phikir bha haba pyniakhlad da kaba pyndonkam da ki tiar ba nep bad ba khuid. Dei ban sumar bha ha ka por ba ot, ban pynthikna ba ki bynta kiba kongsan kim julor ne sniew. Ki lynti ban leh/bud ki dei kine harum.



Ka por kaba bha eh ban tih tyllong ka dei naduh u bnai February haduh u April. Ha kane ka por ka bam ba la buh kynshew na u tyllong kas dei kaba bun duh. Kane ka bam kan iarap kyrshan ia ki jingthung thymmai ha ki bnai ki ban wan. U tyllong u la dep buh kynshew ia ka bam. Hadien kane haba la sdang u slap ki shylluit thymmai ki sdang mih bad ia ka bam la dei ban phah noh sha kine ki shylluit ba thymmai.

- Kynriah suki jai ia ka khyndew ba don sawdong u thied bah haduh ban da ithuh bha ia i bynta u tyllong ban ot.
- U tyllong uba koit ba khiah bha u long rong stem, lada u long rong nar ne don dak iong kane ka pyni ba um da koit da khlain than. Ym dei ban pyndonkam kum kito ki tyllong na ka bynta ban thung.
- Weng ia ka bynta jong u thied bah ne u kmie thied khlem da pynjulor ia u kmie, ki shylluid ne ki thied. Ym dei ban ot hapdeng.
- Hadien ba la dep shim ia ki bynta ba donkam, tap biang ia u kmie thied bah, da kaba phikir ban nym pynmong ia kiwei pat ki bynta jong ki jingthung.

Ka Jingphikir

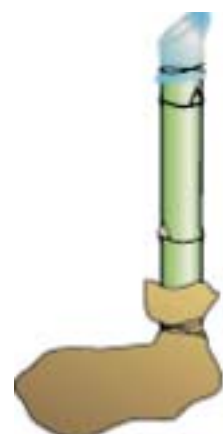
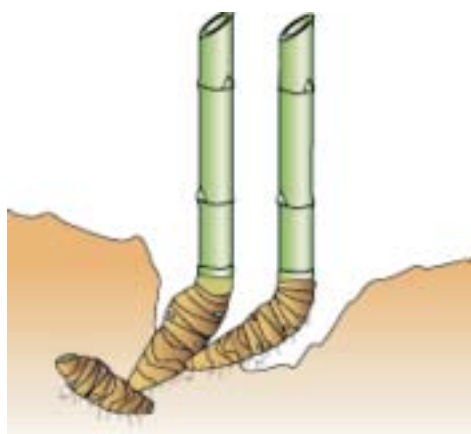
- Peit thuh bha ia ki lynnong siej ban thikna ba ki dei kiba koit ba khiah bad ba nym don ki tang kiba pang.
- Khniot malu mala ia ki shylluid ha u thied bah ban pynthikna ba kim dei kiba la pyut.
- Wat nym tih ia u tyllong ha ka por ba u dang san. Ka jingmih ki tyllong kan duna bha ha ki lynnong ba la dep pynmih shibun ki met bah. Kane ka dei na ka daw ba la phiah ia ka rukom sam bam na ka bynta ki tang siej thymmai ha ki lypung siej.

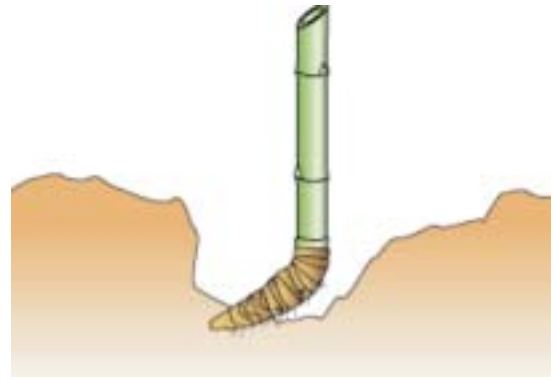
KA RUKOM PYNROI NA KI NAT TYLLONG SIEJ

Kane ka dei ka rukom ba shait pyndonkam barabor. Ka long ruh ka ba jop, namar la long kum ba rah tynrai ia baroh u wei u jing thung.

Ka Rukom (*method*)

- Tih tang ia kito ki nat tyllong ha u siej kiba la don ar mat, bad bret noh ia baroh kiba don ha u tang. Ym donkam ban khet pynwandur.
- Tap noh kloii ia u thied bah bad ki thied da ka pla byrni ba jhieh namar u siej ynda la ot u rkhiang bad tyrkhong kloii. Tap ia ka bynta ba shalor jong u met bah da ka plastic ne tah da ka rong ban nym pyntyrykhong.





- Kit noh syndon ia ki tynrai/tyllong sha ki jaka thung ne jaka sumar sara katba lah bad kham pynkloi.
- Shuwa bad thung, wieh/ pynngam ia ki tynrai ha ka dawai pyniap khniang kum u Bavistin bad kiwei de ki jait dawai khniang (1gram/ litre). Shwa ban pyndonkam dei ban da thew bha ia kine ki dawai khnang ban nym sepei.
- Na ka bynta ban thung ha ki kper, ka jingheh ki thliw kat kum ka kyndon ki dei 50 x 50 x 50 centimeters, na ki bynta ki siej ba pdeng ka jingheh kum u *Bambusa balcooa* bad *Bambusa polymorpha*. Ia ki siej barit ka rynieng pat lah ban tih ki thliw kiba kham rit bad ia ki siej ba heh pat kum u *Dendrocalamus giganteus* donkam ka thliw ba kham heh.
- Ia ka khyndew ba la tih dei ban khleh lang bad ka eit masi (5 kilograms) bad ki sbob dawai (100 gram urea, 100 gram SSP bad 50 gram MOP).
- Dei ban thung da pynieng.
- Lada jia ba slem ban thung dei ban buh ia ki tynrai (offset) ha ki pla byrni (gunny bags) bad buh ia ki ha ki jaka sumar sara

Ki Tyllong Bad Ki Tynrai

Ha kane ka rukom la pynkhlad ia ki tyllong rit bad ki thied jong ki na u tyllong kmie ha ki lynkhot lyngkhot kiba jrong 50-60 centimetre bad ba don haduh 10-15 mat.

Kane ka rukom kaba pyndonkam ia ki tyllong ba 2-3 snem, ka ia dei haba ki tyllong siej ba dei ban pynkit sha ki jaka ba kham sha jngai. Ha kum kine ki khep, ia ki khyndew kiba snoh bad u tyllong dei ban pynsynjor ne sait noh. Dei ban sop da ki sohpaillen bad tap da ka pla byrni ba sngem shwa ban pynkit ia ki.

Kane ka rukom ka iadei bha ia kito ki siej ba mih tang uwei u tang shi jaka. Namar ha bun ki siej ha India ki mih lypung, ym ju kham pyndonkam ne bthah da kane ka rukom.



Ka Jingmaham

- Kan bha lada tap ia ka bynta ba ot ha u tang da ka khyndew.
- Donkam katto katne ban thiew niut hadien ba la dep thung.

Ki Jingdkoh

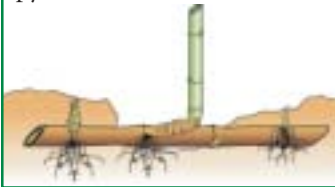
- Tang khyndiat ki tynrai lah ban tih na ki shi lynnong ki siej bad ka shim por bad lutsan.
- Ki tynrai kmie bad ki shylluid thied ki lah ban sniew ha ka por tih.
- Ki thied ki long kiba khia - U tynrai jong u *Dendrocalamus strictus* u lah ban khia kumba 30 - 35 kilograms. Na kata ka daw ka long ka ba jynjar bha ban rah/kit. U nongrep barabor u lah ban rah tang 2 - 3 tylli ki tynrai na ka kper lajong shaduh sha iew ne sha ki jaka ba pyllang.
- Ka kit ka bah ia ki tynrai tyllong ka long kaba rem dor namar ba ka jingkhia bad jingheh bad ka donkam shibun kiei kiei ha ka ban song ban tap ia ki.

U tyllong bad la ki thied bad u tang

Hangne, u tang uba koit ba dang shi snem ei ei la jied bad ia u tyllong la dkhat ryngkat bad u bynta ba harum u tang. Ia u bynta ba hajrong u tang la weng noh, khnang ba tang 4-6 mat bad la ki tnat la pynsah.

U tyllong bad la u tang

K rukom trei ka long syriem ha kaba pynroi da u tyllong bad ki tang bad la ki thied. Ka jingiapher ka long ba ia u bynta harum duh u tang siej la pynsah.



- Kane ka rukom kam iahap haba pynmih shibun na ka bynta ki jaka thung ba heh.

KA RUKOM THUNG DA KABA PYNDONKAM LANG KHYNDIAT KA BYNTA JING U TANG

Kane ka iasyriem bad ka ba thung da u tyllong tynrai, ka jingiapher ka long ba u tang u don ar/ lai tylli ki tynrai tyllong rynjup ha ka shimat kum ki symboh pynroi. Ym dei ban pynsniew ia uwei pa uwei u tyllong na ka rynjup ha ka por ba tih. Ka bynta jong u tang kaba syndait lang bad u tyllong ka dei ban don 3 - 4 ki mat ryngkat bad ki shylluid jong ki tnad. Ha ka por ba kit dei ban husiar bha ban nym pynmong ia ki bynta jong u tyllong. Dei ban thung ha ka por slap. Dei ban thung ha ka thliew ba kham heh namar kine ki tynrai ki don bun tylli ki tang. Kane ka rukom pynroi ka iadei bha bad kito ki jait siej kiba stang kum u *Melocanna baccifera* (tyrlaw) bad *Schizostachyum dulloo* (siej la)

KA JINGTIP SHAPHANG KI JAIT SIEJ

Ia ki tynrai thied bah ne tyllong lah bha ban pyndonkam ha kaba pynroi ia kiba bun ki jait siej kiba donkam bha. Lait noh kum ki jait siej kum u tyrlaw (*Melocanna baccifera*) ha kaba ka jingpyndonkam ia ki tyllong ym ju bud bad ha u jait siej kum u (*Bambusa bambos*) ym ju pyrshang. Kum kine ki rukom ym ju kham pyndonkam na ka daw bym lah ban trei bad ban ioh ban pom ia ki tynrai namar ba khapngiah bad ba long shiah. Hynrei lada lah ban ioh pyrshang ban pynduna ia ka jingkhapngiah shisien, ka rukom pom kan suk bha bad ban pyndonkam wat ha ki jait siej kum u *Bambusa bambos*.

Ka rukom thung da ki tyllong bad la ki thied rit, bad u tyllong bad u tang bad u tyllong khleh bad u tang bad kum ba la batai ha kane ka thup ai jighnikai la bthah tang na ka bynta kito ki jait siej kiba mih marwei. Hynrei kim iahap ha kito ki siej ki ba mih lympung.

Ka rukom thung da ka bynta u tang ka long kaba seisoh ha ki jait siej kum u *Melocanna baccifera* bad *Schizostachyum dulloo*. ■

KA RUKOM THUNG DA KABA PYNDONKAM DA KI BYNTA U TYLLONG: KI LYNTI BA DEI BAN BUD



Ka Rukom Pynroi Da Ki Bynta Ba Ot

KA RUKOM PYNROI DA KI BYNTA BA OT, lah ban dei na u tang ne ki tnad, ka long ka lad kaba bha, bad myntoi khamtam ha ki jait siej kiba mih lympung kiba don ki bynta ba kongsan ha kaba pynmih ia u jingthung (siej) ba bha bad ba koit ba khlain. Ki bynta ki kynthup ia ki mat jong u tang, ki tnad bah, ki thied ba mih shabar ha u tang, bad la lap ba ki don ha ki siej ba heh bad kham rben u pungmat.

DA KABA OT IA KI BYNTA U TANG

Kane ka rukom pynroi ka dei halor ka jingshisha ba ki bynta jong u tang jong kiba bun ki jait siej ki lah ban pynmih ia u jingthung na ki shylluid kiba bha. Kane ka rukom ka iadei bha ia ki siej ba mih shi lympung hynrei ym ia ki siej ba mih marwei (*monopodial*).

U tang ba ot u dei shibynta jong u jingthung ba kynthup barabor u wei ne teng khat 2 - 3 tylli ki mat. Ka bynta jong u siej ba ot ka dei ban long na u tang bym palat ia ka ar snem ka rta. Dei ban ieh ia ki shylluid bad ki tnad ha ki mat.

Ka don ka rta ha kaba u jingthung u lah ban pynmih bha ia ki thied na ki bynta ban pynroi ia u jingthung. Ki jait siej bapher bapher ki don ka jingiapher ha ka rta ban sei thied, na ka daw ba bun kum ha ka rukom mih bad rukom san ki shylluid, bad ka jingdon ki jingbam ba la tyngkai.

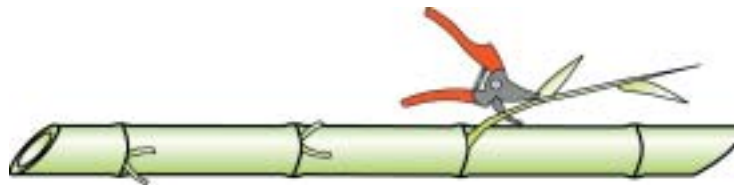
Ka jinglong ha ka jingtrei kam ki bynta met bad ka rukom heh rukom san jong u tang ka ktah bha ha ka ban pynmih ia ki jingthung ba dang lung. La don ka jingthoh ba ka don ka jingiapher ha ka jingtyngkai ia ka bam, bad ka rukom san jong ki tynrai rit ba la thung ha ki bnai ba pher ba pher, ka por kaba bha eh ka dei shwa ba u jingthung un wan biang sha ka kyrdan ba u ju sdang bad khie biang. U bnai March, April bad May ki dei ki bnai ba bha eh ban pynkhreh ot ia ki bynta jong u tang na ka bynta ban pynkhreh ia ki bynta ba ot.

Lah ban pynim ia u siej da kane ka rukom ha ka aiom kaba biang bad na ki bynta jong u tang uba bha khlem da pyndonkam ruh ia ki dawai hormones. Phewse ki dawai hormones ki iarap ha ka jingpynsei tynrai bad pynkham thikna.

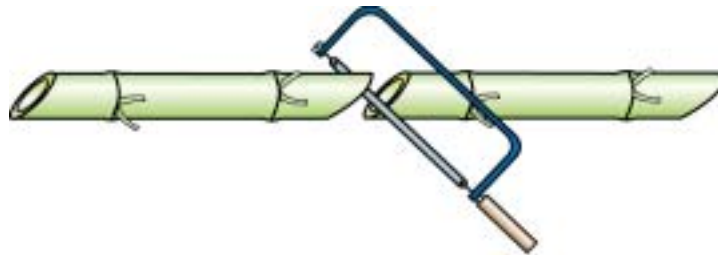
Ki Auxin ki dei kiwei na ki kynja dawai ba pyndonkam barabor ban pynmih thied bad pynlong thied bah ha u siej. Ka IBA (*Indol Butyric Acid*) bad NNA (*Napthalene Acid*) ki dei kiwei pat ki jait auxin ba ju pyndonkam bha; ia ka NNA ym da kham pyndonkam namar ba kam da thikna. Nalor ki auxin kiwei pat ki kynja dawai kum u boric acid, conmarin la ju pyndonkam na ka bynta ban pynsei thied.

KA RUKOM PYNTREI KAM

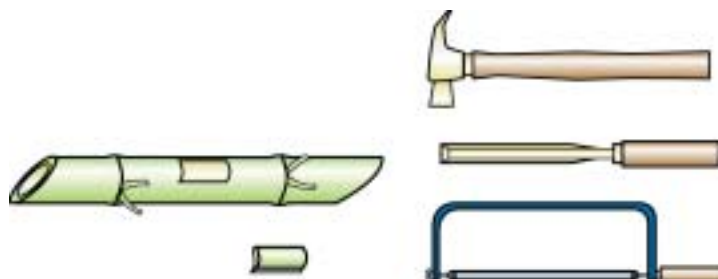
- Ot ia u tang bad bret noh ia ki bynta shalor jong u tang. Ieh noh tang ia kito ki bynta jong u tang ba ka jingheh kaba kham long ryntih.
- Lor ia ki tnad u tang ba la pynneh ha ka jingrong kaba tang 5 - 10 centi meters. Da sumar bad ym dei ban pynmong ia kito ki shylluid kiba don ha u tang

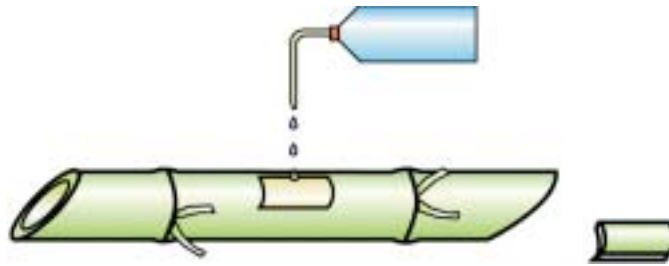


- Ot lyngkhot ia u tang ba la jied. Ia ki jait siej ba kham jrong pung, iehnoh tang uwei u mat ha man uwei u lyngkhot. Ia ki siej ba kham lyngkot pung ieh kumba 2 - 3 tylli ki mat ki ban donkam. Ot pashli ia u tang bad ieh kumba 5 - 10 centimeters na baroh ar liang jong ki mat. Bret noh ia kito ki lyngkhot kiba don ki shylluit ba la ju lor.

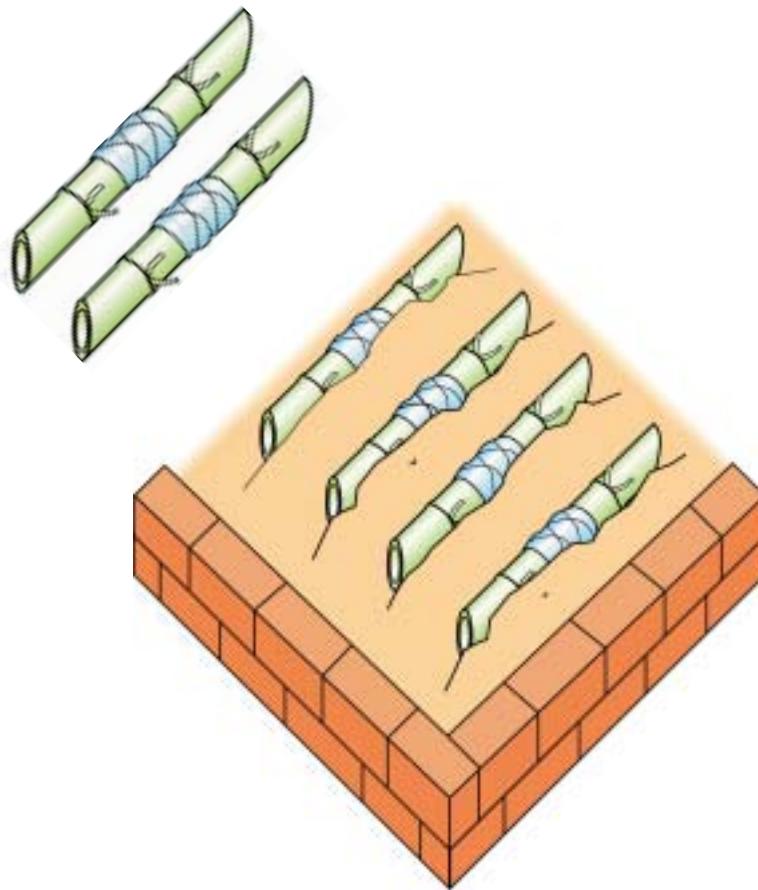


- Ha kito ki lyngkhot tang (*culms*) ba don 2 - 3 tylli ki mat, sam thliw hapdeng jong ka lyhung ki mat. Theh lane inject kumba 100 - 200ml ka dawai hormone kum ka IBA (200 ppm concentration i.e. 200 mg/ litre ka um/ kiad) ha kane ka thliw. Lada ka thliw ka heh tap noh da ka plastic. Ha kito pat ki lyngkhot met bah ba don tang shi mat wieh beit ia ki ha ka dawai kumba 24 kynta.





- Pynkhreh ia ki jaka thung ha ki bunn ba don 1 meter ka pynkiang bad 5 - 15 meters ka jingrong (ka shong ha ka jing don jaka). Ha trai jong ki bunn dei ban siang da u shyiap rew ba kham heh ba kot haduh 10 - 15 centimeter na trai. Halor kata sa tap pat da u shyiap bani haduh ka kynjang kumba 10 - 15 centimeters na trai.



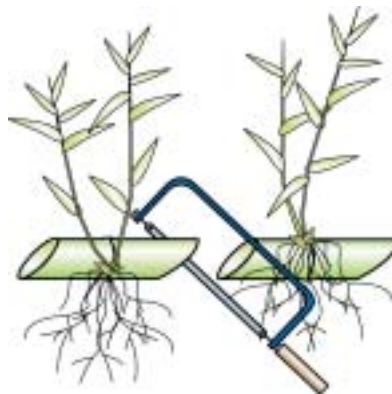
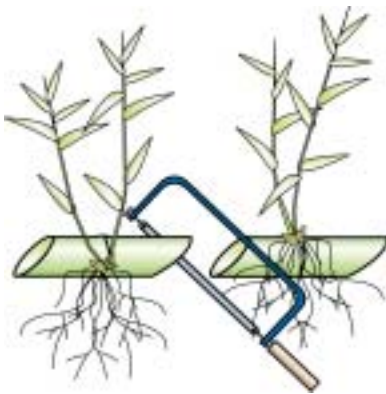
- Shwa ban thung, wiah ia ki tduh ha ka dawai khniang kum ka Bavistin (0.1%)
- Buh ia ki lyngkhot jong u tang da kaba pynthiah halor ki bunn, ha ka jingngai kumba 15 - 30 centimeters uwei na uwei bad ha kata ka rukom ba ki tnat jong uwei u lyngkhot ba ot un nym phai lang sha kajuh ka phang jong ki tnat jong u lyngkhot ba ha syndah. Buh ruh ia ki lyngkhot ha kata ka rukom ba ki bynta ba don ka dur ot kin phai shapoh khyndew bad ia ki shulluit la buh ban phai ha ki ar liang



Ha ki jaka ba long dew shyiap ia ki bunn lah ban shna beit. Ka jingthmu ka dei ban pynlong ia ka jingni ka khyndew, ba jiar um, ba ioh lyer khnang ba ki jingthung rit (siej) kin heh kin plung bha.

- Thung ia ki lyngkhot ha ka bynta ba halor ba long ni u shyiap, kumba 3 - 5 centimeters halor u shyiap ba kham rew nangta tap ia ki lyngkhot da u shyiap bani kumba 3 - 6 centimeters
- Ai jingiada/ tap ia ki jaka thung. Ki jar kiba don ha iew kiba ai kumba 75% ka jingkah dum, dei ban pyndonkam. Lah ban shna ia ki rynsan da ki siej bad phlang traw ban tap.
- Ai um thikna ia ki jaka thung haba donkam.

Ki shylluit ki sdang mih lung hapteng 10-15 sngi. Ki thied pat ki shim por kumba shiteng bnai haduh shi bnai shwa ban mih. Ka jingsdang long u tyllong bad u shylluit ki shim por haduh 4 - 6 bnai ban sdang paw shabar. Ka jingsei lung na ki lyngkhot ka kdew ba ki lah long ban rah sha ki jaka thung. Tih noh ia kito ki lyngkhot ba la mih thied, bad lyngkhot tyllong bad buh ia ki ha ki pla plastic na ka bynta ban thung ne ban pynbun shuh shuh.



Ka Jingphikir

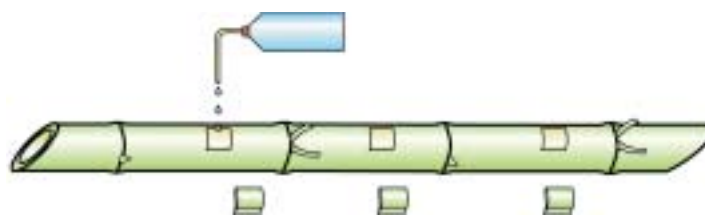
Lada donkam ban pynkit ia ki bynta lyngkhot ba ot sha ki jaka ban nang kham pynroi, ia ki tduh ot jong ki lyngkhot dei ban sop da ka byrni ba jhieh/ sngem ban pynduna ia ka jing tyrkhong.

Ki Jingdkoh

Barabor ki jait siej kiba kham rben ki kynroh pungmat kum ha u (*Bambusa balcooa* bad *Dendrocalamus hamiltonii*) ki mih bha da kane ka rukom. Ki siej ba stang ka kynroh pungmat bad ba kham rit kum u *Melocanna baccifera* bad *Ochlandra Travancorcia* ki kham duna ha ka jingmih bha da kane ka rukom.

Ka Rukom Ot Lyngkhot Ia U Met Bah Ha Ka Dur Ka Shawiang/ Bisli

Kawei pat ka rukom ot lyngkhot ia ki met bah la tip kum ka flute technology (ka rukom ot ha ka dur ka shawiang). Ha kane ka rukom ki lyngkhot ba don ar mat, 3 mat ne shibun ki mat la pynkhreh bad sleh da u Dwai kum u Chlorpyriphos 20% E.C, Basvistin bad Streptocyclin. Sam ka thliw kaba 1 x 1 inch hapdeng ki mat jong u tang ba la ot, bad theh ia ka um ha kata ka thliw. Ia ka thliw pat la tap da ka plastic ban iada na ka jingrung khyndew.



Pynkhreh ia ki kharai kiba 6 inchi ka jing jylliew (ka shong ha ka jingheh u siej) ha ka jingjingai kaba 36inchi. Ia kine ki kharai la synreit da ka um ba la khleh lang bad ka choropyriphos kumba 2ml/ 1 liter ka um ban iada na ki lynrah/ kruin.

Ia ki lyngkhot tang ba ot ba kynthup ia ki mat la buh ha ki kharai ha u bnai April, May bad tap pat da ka khyndew kumba 2inchi. Ka jingkiew ha ka jingshit bad jingsngem hapoh ki lyngkhot ba la ot ka pynmih speh kloï tang hapoh 10 - 20 sngi. Ki tyllong/thied ki sdang long hapoh 60 - 80 sngi na ka bynta ban thung sha kper.

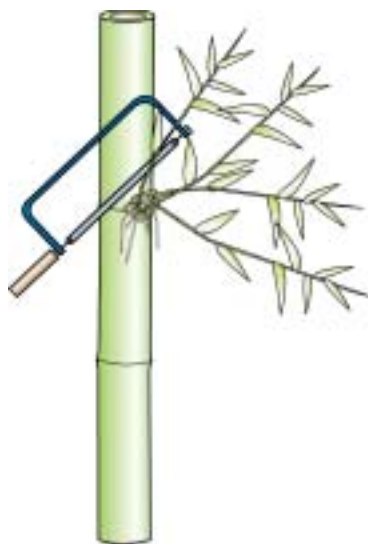
KA RUKOM THUNG DA KI TNAD BA LYNGKHOT

Ha ki jait siej kiba rben, (*Bambusa balcooa*, *Dendrocalamus asper*, *Dendrocalamus hamilltonii*) ki ba mih tnad bha, ka rukom pynroi lyngba ki tnad lah ban pyndonkam ha ka ban pynmih shibun bah ki tynrai thung. Ka jingrit ki tnad bad ka jing lah ban pynmih shibun ki tnad lyngkhot khlem da pynjutor ia u tynrai kmie ka pynlong ia ki ban long kiba bha ha ka ban pynroi da kane ka rukom. Ka don ka jingiasyriem ha ka dur jong ka trai ki tnad ba at pyllun bad u tyllong jong u tang. La lap ba ka jingdon jong ka jingat ba long kum ha u tyllong ka long kaba donkam ban pynthikna ha ka ban pynseisoh bha da kane ka rukom.

Ki tnad ba la ot kiba don lypa ka jinglong ban pynmih thied bad tyllong ha trai kum ki bynta ba ot ba la mih thied bad tyllong ha shwa (tip kumba long thied lypa, ba long tyllong lypa) ki mih bha ban ia kito ki tnad lyngkhot ba ju leh barabor. Ia ki thied bad ki tyllong lah ban pynmih jubor da kaba ot ia ka bynta ba shalor u tang bad wengnoh ia kito ki tang ba dang shu mih na ki lympung siej.

Ki Rukom Pyntrei Kam

- Jied ia ki tnad na u met bah kiba don ka rta kumba shisnem shiteng haduh ar snem bad ki bym don jingpang.





Ki bynta tnat ot, ba la pynmih thied lyer

- Ot ia ki tnat bad don ryngkat bad kito ki bynta ba at pyllun ha trai kiba don ki thied da ka jingiarap ka kurat.
- Ia ki tnat dei ban ot lut phoin khnang ban khuid naduh na trai. Donkam ban ot ia ki bynta ba sha khlieh bad sha trai ruh.
- Shna ia ki lyngkhot tnat da kaba pyndonkam da ki kanshi khap tnat dieng ban khap ia ki sla bad ki tnat rit. Uwei pa uwei u lyngkhot tnat u dei ban don 2 - 6 ki mat kiba don ki shylluit ba koit ba khlain bad ki dei ban jrong kumba 50 - 80 centimeters bad ka shong ha u jait siej. Khap khatduh phoin ia ki sla shwa bad buh ia ki lyngkhot ha ki bunn pynroi.
- Buh ia ki lyngkhot ha ka dawai pynmih thied (nuksa IBA, 200 ppm) kumba 24 kynta ban iarap ha kaban pynmih thied.



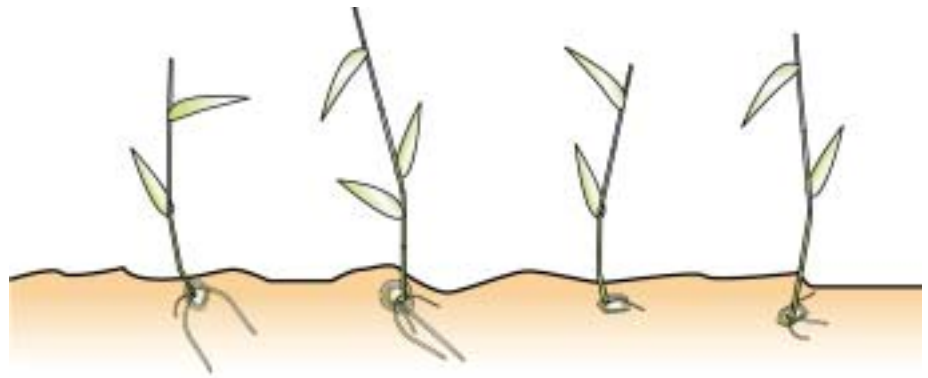
Ki lyngkhot ha ka dawai pynmih thied

- Set ia ki dak ba ot da ka bthing.
- Wieh ia ki lyngkhot shwa ban thung ha ka dawai pyniap khniang kum ka Bavistin (0.1%)
- Thung ia ki lyngkhot da pynieng ha ki bunn ba la shna kynton, ha ka jingjai kaba 2 - 3 centimeters u wei na u wei pat, bad ha ka jingjylliew kumba 7-10 centimeters, bad pynskhem ia ki khyndew ha trai jong u jingthung da kaba khniot bha. Ka jaka thung/ bunn ki dei ban don ki khyndew ba khleh lang u shyiap bad ka eit mrad ba ri ha ka bynta 1:1:1.
- Pynkhreh/shna na ka bynta ban da bad ban pynsngem.

Ki speh shylluit ki noh tang hadien 7 - 10 sngi. Ki thied pat ki mih bha hapdeng 30 - 60 sngi (ia kito ki lyngkhot ba shna ha u April - August) lane 55 - 70 sngi. (na ka bynta kito ki lyngkhot shna ha u October - November) .



Ki lyngk hot ha ki bunn



Weng ia ki lyngkhot ba ot na ki bunn/ jaka sara bad thung ha ki pla plastic (15 x 23 centimeters) ba don u shyiap bad eit masi ba la khleh ha ka bynta 3:1. Pyneh ia ki lyngkhot da kaba buh ha ka jaka ba dum kumba 3 - 5 sngi. Ki sla thymmai ki mih hadien 6 - 8 bnai, bad la long ban thung sha ki kper.

Ka rukom pynkha/pynroi da ki sara lah ban leh lang bad ka rukom pynroi da ki lyngkhot tnat ba ot ban pynmih shibun ki symbai thung.

Ki tynrai u siej *Bambusa nutans* ha ki pla plastic



Ka Jingphikir

- Lada ia ki lyngkhot tnad donkam ban kit sha ki jaka bunn pynroi, dei ban buh ia ki ha ka jaka ba long sngem da kaba buh ha ki pla byrni ne ki pla plastic ryngkat bad u skum kurat ba sngem ban iada na ka jingtyrkhong. Dei ban da sumar ba ki pla plastic ba thep ia ki lyngkhot ki long kiba pjiar um bha ban lait na ka jingpyut.
- Ki lyngkhot tnad ba la sdang mih tyllong bad thied rit dei ban kham pyndonkam ha kaba pynroi.

Ki Jingdkoh

Ki jait siej kiba don ki tnad kiba rit sha khlieh jong u met bah kum u *Thyrostachys oliveri* bad ka *Thyrostachys siamensis* kim long ban pynroi da kane ka rukom.

KA JINGTIP HALOR KI JAIT SIEJ BAPHER BAPHER

Ha ki por ba mynta ka rukom pynroi da kaba pyndonkam da ki bynta jong u tang siej ka sdang ban trei kam bad la pyrshang ia kane na ka bynta bun ki jait siej ba la tip. Lait noh na u *Thyrostachys oliveri* bad katto katne kiba kynthup ha ka jait jong u *Dendrocalamus strictus* ha kaba dang duna ban ioh jingshai.

Ka rukom pynroi da ki lyngkhot tnad ka long kaba jop na ka bynta ki jait siej kiba mih thied bad thied bah ha trai jong ki tnad. Ia ka jingmih ki thied ban long thied lah ban pynwandur da kaba ot ia ki bynta ba sha khlieh jong u tang. Ki jait siej ha kaba ka rukom pynkha kaba long seisoh bha ka dei ha kito kiba kham rben u ktang kum u *Bambusa balcooa*, *Bambusa nutan*, *Bambusa polymorpha*, *Bambusa vulgaris*, *Dendrocalamus giganteus* bad *Dendrocalamus halimtonii*.

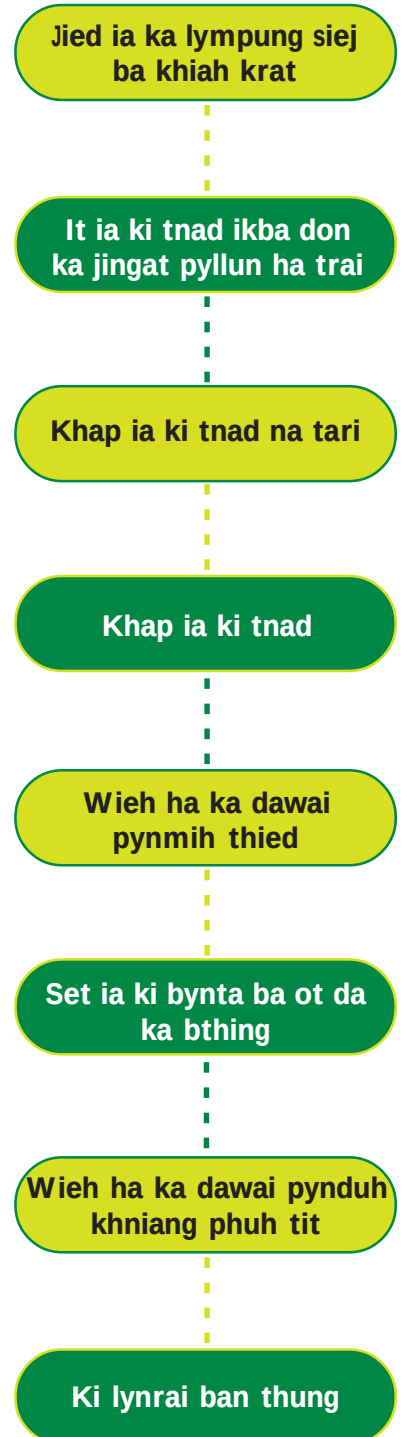
Ka rukom pynroi ba tip kum ha ka dur shawiang/bisli ka long paka bha ia ki siej kum u *Bambusa balcooa* (barua) bad *Bambusa nutans*. ■

KA RUKOM PYNROI DA KI LYNGKHOT U MET BAH: KI LYNTI BA KONGSAN

Ki lyngkhot na u tang



Ki lyngkhot na ki tnad



Ka Rukom Pynroi Da Kaba Pynmih Thied Khlem Ot Ia Ki Bynta Jong U Siej

Ka dei ka rukom ha kaba ia u met bah ne u tnad la buh ha ka dawai pynmih thied khnang ban pynroi. Kane ka buit stad pynroi ka iasyriem bad ka rukom ot lyngkhot ia ki bynta u jingthung. Ha kane ka rukom ki thied ki mih khlem da pom ia ki bynta na ki jingthung kmie. Ki thied ki mih hadien ba ia ki bynta jong u tang la tap ha ki dawai ha kata ka dur ba kin pynmih ia ki thied bad ia ki jingthung ba thymmai.

Ha India ia kane ka rukom pynmih thied ki shait pyndonkam teng khat, hynrei ym barabor .

Don saw jait ki rukom pynmih ia ki thied:

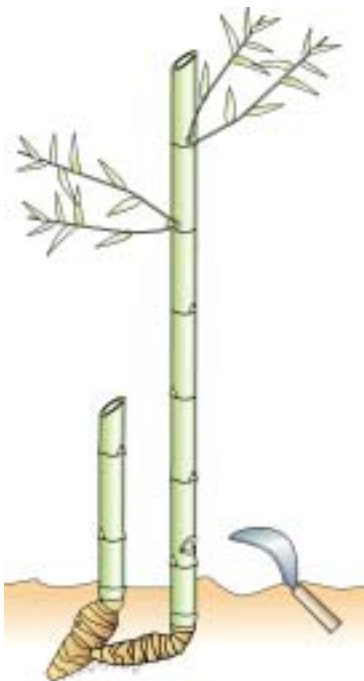
- Ka rukom ba buh ha khyndew.
- Ka rukom ba leh ha u tynrai/ met bah/ diengkhong.
- Ka rukom pynmih thied ha suin/ lyer.
- Kaba pynmih thied ha ki sara tynrai.

Ka dawai/ ban iarap sei thied ka dei ka kynja sboh ha kaba ki symbai kin lah ban pynim ialade shwa ban thung ha ki kper sara. Ia ka khyndew na kper ym lah ban pyndonkam ha ka ban pynmih thied. Ka long kumba khem sbak ha ka por ba ka jhie bad ka kloi ban kem jingpang. Ka dawai ban san ki thied ka dei ban kyrshan bad ban pynneh ia ki lyngkhot shi jaka. Kane ka dawai ka dei ban ai lad ia ka lyer ba kan rung kan mih bad pynsngem ha trai jong ki lyngkhot. Ka dawai suhthied ka iada na ki khniang bad iarap ban pynduh ia ka jing wan ki khniang jingpang. Ki dawai suh thied ki ba shait pyndonkam ki kynthup ia ki mar rep kum ki ksai snepkor, u stait, u tang kba, ki sla, ka eit masi, shyiap bad ki sohpaillen.

- Ia ka rukom pynmih thied ha khyndew bad ha u diengkhong hi, u shyiap bad u snep jong u snepkor lane ka eit masi bad u shyiap la lap ba ki ai ka jingmih kaba bha.
- Ki ksai snepkor, u tyllai skum bad u niut maw ki long kiba seisoh bha ha kaba pynmih thied ha suin.
- U shyiap u iadei bha ha kaba pynmih thied, ia ki sara tynrai.

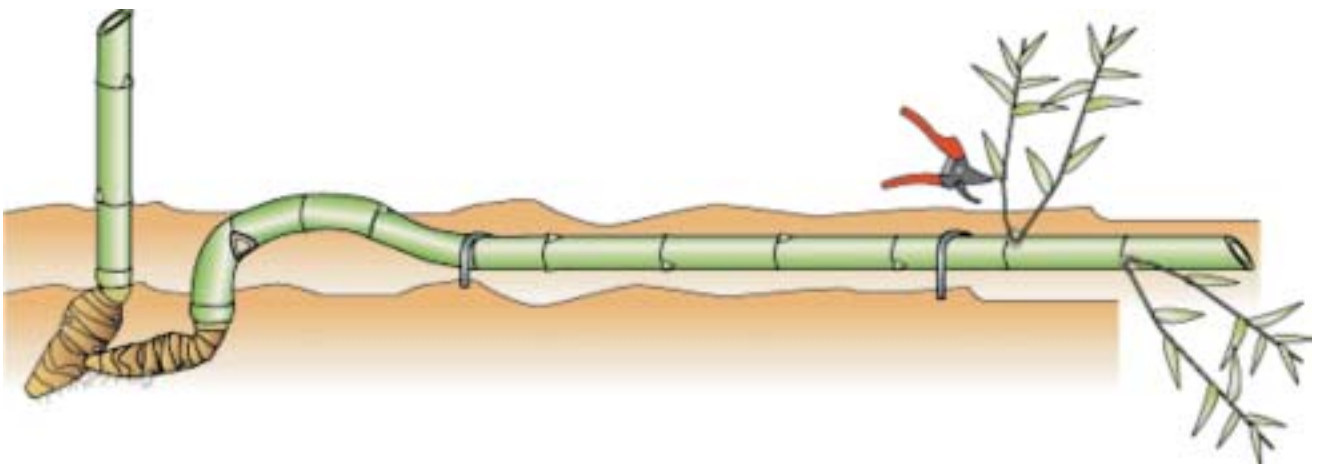
KA RUKOM PYNMIH THIED HA KHYNDEW HI

Ha kane ka rukom, ki thied ki mih/san hadien ba ka bynta jong u tang ka ia kynduh bad ka sla khyndew.



Ka Rukom Trei

- Jied ia u met bah uba dang kham rit ba duna 2 snem ka rta bad u ba koit ba khiah na ka tynrai kmie ka byn don jingpang.
- Pynkhreh ka kharai (10 - 12centimeters ka jingjylliew) kaba jrong ban thep ia ka bynta u tang kaba don 5 - 6 tylli ki mat.
- Ot noh ia ki bynta ba sha khlieh bad ki bynta ba sdang long rit jong u met bah . Kane kan iarap bha ia ka jingsan ki shylluait ha ki mat.
- Pynsah ia ki sla bad ki tnad ha ki mat ba don sha jrong (kumba 5 - 6 mat) bad ha ki mat ba don sha trai kumba 4 - 5 mat khlem pynkhih. Ha ki bynta ba ha pdeng, khap lut baroh ki tnad, ki sla kynthup ia ki tnad rit.
- Pynkhun ia u met bah ha khyndew. Lada jia ba ym khun ot malu mala ha trai, ban eh ia u met bah bad sieh ia u ha ki kharai ba jyndong.
- Tap ia ki bynta met bah ba don ha kharai da ki dawai ban pynmih thied. Kyllan ia ki bynta ba tap jong u met bah ban pynstet mih thied da ki dawai.



- Ai um man ka por, hynrei ym dei ban ai than. Ka jinglang um kan pynsniew ia u jingthung.
- Ki thied kin mih na ki mat. Ia kine dei ban peit bad bishar na ka por sha ka por.
- Ynda la mih ki thied, pyniakhlad ia ki mat ba mih thied ryngkat bad 7 - 10centimeters u tyndong na baroh ar liang.
- Thung ia kito ki mat ba la mih bha ha ki jaka thung sara ne ki kper.

KA RUKOM PYNMIH THIED NA U DIENGKHONG

Ha kane ka rukom pynmih thied, ia u tang la ot bad ieh noh tang 2 - 3 ki mat ba sha trai. Ia u diengkhong la kyllan da ka dawai IBA ba 200ppm, tep ryngkat bad ka dawai pynmih thied da ka khyndew kumba 1 - 2 centimeters ka jingrben. Ki speh ki mih hadien 150 - 180 sngi bad lah ban pyniakhlad bad thung noh. Ia kane ka rukom la lap ba ka long kaba jop tang ha ki jait siej *Bambusa longispiculata*.

KA RUKOM PYNMIH THIED HA LYER

Kane ka kynthup ia ka ban jied ia u tang uba dang shi snem ka rta, bad pynkhun da kaba ot ha trai, khnang ba ki mat kin kot. Ia u met bah dei ban ai jingkyrshan da u dieng bad ia ki tnad la khap haduh 2-3centimeters, da peit bha ba ki shylluid ba la iohthiah kin ym sniew. Ia ki tnad dei ban lor ha ka por pyrem (May - March). Khleh lang ia ka khyndew, ki sla iap bad buh sawdong ki mat.



Ka jingpynkhun ia u siej
ban pynmih thied ha lyer

La teh arsut ia u tang da u sai snep kor/bad pynskhem da u tyllai ha baroh ar ki tduh. Bunsien tang hadien shibnai ki shylluid ki mih lung. Ha ki 3 - 4 bnai ba bud sdang mih sa ki thied. Nangta sa pyniakhlad na u tynrai kmie bad thung ha kper.

Ban pynsngem sah ia kito ki bynta ban pynmih thied, ka por slap ka dei ka por ba bha ban leh ia kane. Kane ka rukom ka iadei bha bad kito ki jait siej kiba rben ka kynroh u tang kum u *Bambusa vulgaris*, *Dendrocalamus giganteus*, kiba kham lyngkot tnad hynrei kiba at pyllun pat ha trai.

KA RUKOM PYNMIH THIED NA U SARA TYNRAI

Ia u sara ba la don 6 - 12 bnai ka rta, la buh arsut ha ka sla khyndew ha ka syrtap shyiap ka ban long ka jaka pynmih thied. Ia u tang la tep kumba 1.5 - 2centimeters hynrei ia ki tnad ha ki mat la ai lad ba kin paw shabar. Bun na ki sara ha kane ka por ki don tang kumba 2 - 4 ki mat bad uwei uwei u don 6 - 8 ki mat. Ki thied ki mih na ki mat hapoh 60- 90 sngi, lada tap ha u bnai April-May. Ia ki jingthung thymmai la khap da ka kanshi khap dieng bad thung ha ki pla plastic ba la thep da u shyiap bad ka eit masi ha ka 3:1 bynta.

Kane ka rukom leh ka long kaba jop bha ha u jait siej kum u *Bambusa polymorpha*. Tang ba kam long kaba jop ne thikna ha ki jait siej kum u *Dendrocalamus strictus*, *Bambusa bambos*, *Bambusa tulda*. Kane ka rukom ka kham shitom bad ka bym myntoi na ka bynta ban pynmih shibun lane ia kito ki jait siej kiba mih shi lynnong. Donkam ban shna ia ka jaka trei kaba paka hajan ki lympung siej kaba long kaei kaei ka jingkynto kaba eh ban leh ban pynmih shibun ki siej.

KA JINGTIP SHAPHANG KI JAIT SIEJ

Kaba pynmih thied ha khyndew ka long kaba jop ha ki jait siej kum u *Bambusa bambos*, *Bambusa nutan*, *Bambusa polymorpha*, *Bambusa tulda* bad *Bambusa vulgaris*.

Ia ka rukom pynmih thied pat ha suin lah ban pyndonkam ha kiba bun ki jait siej kum ha u *Bambusa bambos*, *Bambusa nutans*, *Bambusa tulda* bad *Bambusa vulgaris*, *Dendrocalamus brandisii*, *Dendrocalamus giganteus*, *Dendrocalamus hamiltonii* bad kumjuh ruh ha u *Schizostachyum dulloo*.

Ka rukom pynmih thied pat na ki sara tynrai ka long paka bha ha ki jait siej kum u *Bambusa polymorpha* bad khyndiat khyonsoit ha u *Dendrocalamus giganteus*, *Dendrocalamus hamiltonii* bad *Melocanna baccifera*. ■

**KA RUKOM PYNROI DA KABA PYNMIH THIED HA LYER:
KI LYNTI BA KONGSAN BA DEI BAN BUD**

Jied ia u lypung siej ba
la iaw bad ba khiah krat

It ia u tang ba ar snem
ka rta

Tih ia ki kharai

Weng ia ki bynta ba
shalor u tang

Khap ia ki tnat

Pynkhun bad sieh ha
madan ia u tang

Tap ia ka kharai da ki
jingkhleh pynmih thied

Pyniakhlad ia ki bynta ki
mat ba la sei thied

Thung ha ki bunn

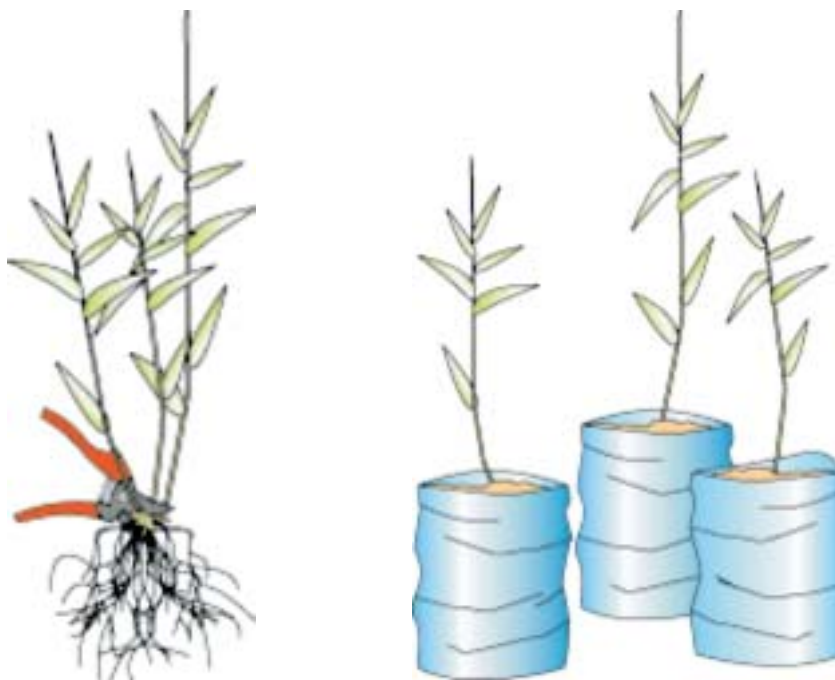
■ Ka Rukom Pynroi Na U Tynrai Sara Ban Pynmih Shibun

KI SARA JONG U SIEJ KI DON KI JINGLONG tynrai ba ki lah ban pynbun ki tynrai khun da kaba ot ia u tyllong ha ki bun lyngkhot. Uwei uwei u lyngkhot u kynthup ia ki thied bad ki siej lung bad na uwei uwei u sara tynrai lah ban pynkha shibun ki tynrai. Ha kane ka rukom ba ju leh la lap ba ka iadei bha ha kito ki jait siej ki ba pynmih ia ki symbai ki ba bha.

Ka Rukom

- Bet lain ter ter ia ki symbai ha ki bunn ba la khleh lang u shyiap, ka khyndew bad ka sboh mrad ba ri ha ka bynta 1:1:1
- Phut ia ki sara ha ka por ba ki la don 2-3 sla (8-10centimeters ka jingjrong) bad thung pat ha ki pla plastic ki ba la don lypa u shyiap bad ka eit masi ha ka bynta 3:1.
- Tih ia ki sara hadien 3-4 bnai ne haka por ba ki la mih 3-4 ki siej lung. Weng ia ka khyndew ban paw u tyllong.
- Pyniakhlad ia uwei uwei u siej lung rit ha ryndang jong u tyllong da ka jingiarap ka khanshi khap tnad dieng, ha kata ka dur ba uwei uwei u jingthung u don lang ia u tyllong bad ki thied rit.





Ki jingthung kiba la pynmih na ki symbai ki lah ban pynmih ia ki tyllong bad thied rit bad ki shylluid kiba paka hapoh ka 4 bnai. Ka jingpynmih tynrai na kaba ot ia u tang bad ia ki tnad wat la ki lah ban pynmih shibun ki jingthung hynrei kane ka shimpor shibun wat shi snem ruh.

- Khap noh ia ki bynta ba shalor jong u jingthung da ka ba ieh noh tang 2 tylli ki mat ba u nym heh shalor bad ban pynmih bun ki lung siej.
- Tap ia ka dak ot da kaba tah da ka bthing
- Tah ia ka bynta ba ot da ka um Bavistin (0.1 %) shwa ban thung ha ki bunn pynroi ne ha ki pla plastic.
- Sa thung biang, ai um bad buh ia ki ha ki jaka ba dum kumba 3-5 sngi ba kin kham eh shwa ban rah ia ki sha ki jaka thung sara.
- Pynkhreh 50% na kito ki sara pynkha (*proliferated*) na ka bynta ban thung ha ki kper, ki ba sah pat thung biang ha ki bunn na ka bynta ban pynroi.

Ia ki sara ba la pynkhreh na ki lyngkhot u tang bad na ki lyngkhot tnad ruh lah ban pynroi ha kajuh ka dur.

Ka por ba u jingthung u san ka dei ka por ka ba bha eh ban pynroi.

Ki jingphikir

- Lada ia kane ka rukom pynroi la bteng slem bha da u juh u tynrai, kane ka lah ban pynmih ki jingthung ki ba thut ha ka heh ka san, lane phuh syntiew. Na kata ka daw dei ban pyndonkam da ki jait tynrai ba la jied bha ha kaba nyngkong.
- Ha dien ba la dep pynkhuid ia ka khyndew na u tyllong bad ki thied rit dei ban khap noh ia ki thied rit ba la iaw.

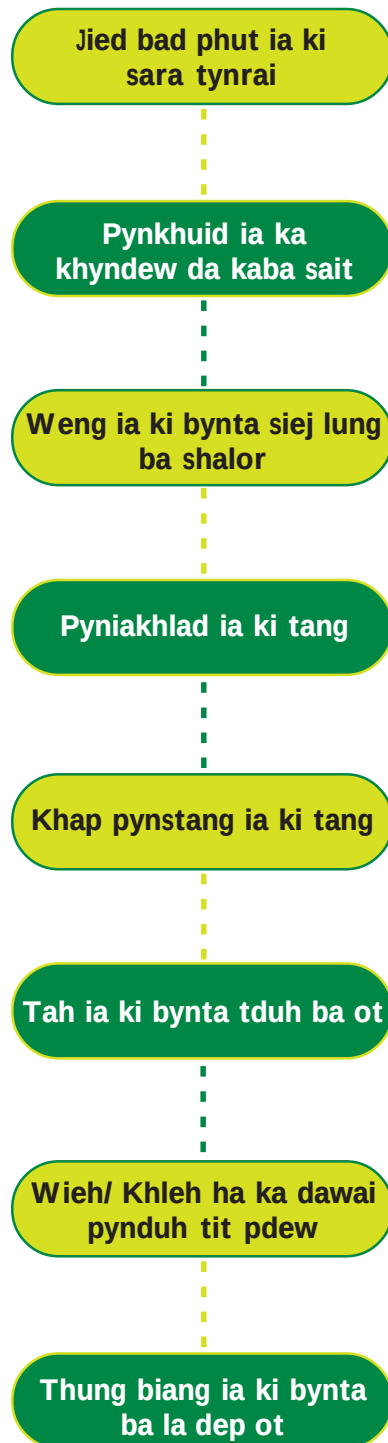
Ki jingdkoh

Kane ka rukom pynkha ne pynroi ka ia dei bha ia kito ki jait siej heh kiba rben ktang bad kiba pynmih ia ki symbai ki ba bha. Ia ki jait siej ba stang ktang kum u (*Melocanna baccifera*), *Ochlandra travancorica* bad u *Schizostachyum dullooa* la ioi ba lah ban pynroi tang kumba 20-25%

Ki Jingtip Shaphang Ki Jait Siej

Ki siej heh ba rben ktang ki pynmih ia u symbai ba bha ki ia dei bha da kane ka rukom pynkha. La lap ba kane ka rukom ka trei kam bha ha ki jait siej kum u *Bambusa nutans*, *Dendrocalamus giganteus*, *Dendrocalamus hamiltonii*. ■

KA RUKOM PYNKHA/PYNBUN TANG NA USARA TYNRAI BAN PYNMIH SHIBUN TYLLI: KI LYNTI BA KONGSAN BA DEI BAN BUD



KI RUKOM : Ki Jingmyntoi Bad Ki Jingdkoh

Kito ki rukom pynkha ba pher ba pher ba la batai haneng ki don ka jingmyntoi bad jingduh myntoi. Kita ki dei kumne harum.

Ka rukom	Ki jing myntoi	Ki jingduh myntoi
Da ki symbai	Ba ioh ei na ka mariang, bym rem; ba ia dei ha ka ban pyn kha shibun.	Kham niar ne duna ka jingioh symbai Ka por mih symbai bym thikna ha ki katto katne ki jait siej. Ym tip bha ia ka rukom lum, kynshew ia u symbai bad ban sumar. Bym thikna ia ka jingim ki symbai. Bym thikna ha ka jinglong ka jingpher ba bun jait/jingsan u jingthung.
Na u tyllong	Ba shait leh barabor, bad ka long kaba jop. Na u tyllong khleh khyndiat u tang :- Ka long kaba bha na ka bynta ki bun ki jait siej. Na shibynta u tang bad u tyllong: Ka long ka ba myntoi ia ki siej ba stang ktang.	Ka iahap ha ka ban pynmih shibun. Tang khyndiat eh u thied bah lah ban ioh na u tynrai kmie. Ki tyllong ki kham heh bad ka long kaba jynjar bad lut ksan ban kit. U thied bah u kham rem dor ban ia ki wei ki bynta ua siej. Kaba shim por bad lut ksan.
Na ki lyngkhot u tang bad ka rukom ot ha ka dur sha wiang/bisli.	Ka ba suk ban pyntrei kam. Ka rukom im ka long paka naka bynta ki siej ki ba rben ktang. Ia ki tynrai suk ban ioh bad ban ot. Ka rukom ha ka dur shawiang/bisli: Ki im bha ki jingthung na ka bynta ki katto katne ki jait siej ne ki jaka ba kham sniew ka suin bneng.	Bym ia hap na ki bynta ki jait siej kiba don ki pungmat ba jrong bad ba stang.
Da ki lyngkhot tnad	Ka kham tad, iadei ha ka ban pynkha shibun, ba lah ban leh baroh shisnem lynter. Ka bha na ka bynta ki jait siej ba rben ktang.	Kam iahap ia kito ki jait siej ba stang ktang bad ba rit ki tnad.
Ka rukom mih thied ba pyndei khyndew ka rukom pynmih thied ha suin.	Ka bha na ka bynta ban pynkha bun, ia kito ki jait siej ba mih uwei shi jaka. Ka bha na ka bynta ban pynkha ia kito ki jait siej kiba mih uwei shi jaka.	Ba donkam shibun ki nongtrei; duna ki ban im; donkam ka jaka ba madan sawdong u tynrai kmie. Ba donkam shibun ki nongtrei; ba shitom ban sumar khamtam ha ki kper ba heh.
Ka ba pynkha na ki thied ki sara	Pynmih shibun ki tynrai ban thung ha ki bun snem, ba duna ka bai kit. pyndonkam ia ki tynrai ba dang thymmai	Ki bor ki jingthung ki duh noh lada pyndonkam slem ban ioh bynta na kajuha ka iawbei ban
Ka rukom pynkha shibun bha tang na u wei u tynrai (Macro-proliferation).	Kaba duna ha ka lut ka sep, ka iahap bha ha ka ban pynmih shibun ki tynrai.	Ki jingthung ki duh bor lada pyndonkam slem than ban thung; man ka por donkam da ki ba dang thymmai.

Ka Rukom Sdang Bad Pyniaid ia Ka Jaka Pynmih Ia Ki Sara Tynrai

KA RUKOM SDANG IA KA JAKA PYNMIH SARA/TYNARI

Lah ban pyndonkam da kano kano ka rukom pynkha/pynroi ha kano kano ka rukom kat kum ka jingdonkam ne jingpyntrei kam; ban pynmih tang ban thung ha ki kper bad ha rud iing, lane ban pynkha shibun da ki phew hajar na ka bynta ban khaii.

Ki nongrim ba kongsan ha ka ban sdang ia ki jaka pynmih sara ki dei:

- Mang ia ki kam ban trei.
- Jied ia ka rukom pynkha/pynroi ka ban pyndonkam.
- Jied ia ki thymmei ki tynrai ban pynkha/pynroi.
- Jied ia ki jaka kiba biang ban pynlong jaka sara.
- Pynkhreh ia ka dur thaw buit ban buh ia ki jaka bapher ha ka per sara.
- Ka jingpynkhreh ia ka jingpyniaid ki lynti ban trei ha ka ban pynroi
- Ka jingpyrkhat lypa kumno ban pynduh ia ki khniang bad ki jingpang ba bun jait kiba lah ban pynjulor ia ki tynrai sara.

Ka jingheh ka jingtreikam

Ka rukom/kyndon trei kam ka shong eh ha ki iew ki hat lane ha ka jingpyndonkam ia kito ki tynrai ba la pynmih. Kane pat kan kdew ruh ia ka jing pynlut pynsep, ka rukom pyntrei bad ka jait mar (*resources*) ka ba ngin sa pyndonkam. Lada ki kam ban trei ki duna ne ba tang katto katne por, wat lada trei ha ka nongrim ba ka rukom pynkha bad rukom sumar kaba paka, ym da donkam ban pynheh ia ka bai seng kaba lah ban shu sah kut. Ha kawei pat ka liang, lada ka jingthmu ka dei na ka bynta ban pynmih shibun, dei ban pyrkhat lypa ia baroh ki kam bad ban pynbeit ia ka rukom trei ha baroh ki liang.

Ki Rukom Pynkha /Pynroi

Ki don bun jait ki rukom ba ngi lah ban jied bad ia ka jingjied la pynshong nongrim halor kine harum:

- Ki kam ban trei.
- Ki jait siej ban pynkha/pynroi.
- Ka thymmei ki symbai (*Sources*).
- Ka jingingai na ka iew ne ki jaka sara.

Barabor ia ki jaka thung sara dei ban pyrkhath kata ka dur ba ka rukom pynkha ka dei ban bud tang kawei ka rukom bad baroh ki nongtrei ki dei ban long ki ba tbit bad ba la dep shah hikai kumno ban trei.

Ka Thymmei la Ki Tynrai

Ki thymmei ban lum ia ki tynrai thung kiba bha dei ban jied lypa, bad buh pynshongdor ia ka jingdonkam bad ia ka dor.

Ka Jaka Ban Jied

- Ka kper sara ka dei ban long ha ki jaka ba madan.
- Ia ka jaka sara dei ban jied barabor hajan ka jaka thung katba lah.
- Ia ka tyllong um na ka bynta ban ai um ia ka jaka thung siej dei ban da jied bha. Ka tyllong um ka dei ban long kaba lah ban ai um kaba biang baroh shisnem lynter.



Ki tynrai siej ha ki bunn sara



Ki tynrai siej *Bambusa tulda*

- Ia ka jaka ban pynlong nursery dei ban jied hajan ka jaka pynroi khnang ba baroh ki kam ba ia dei lah ban leh da kaba suk.
- Ia ka nursery dei ban da ker bha ban iada na ki mrad ba wan pynjot.
- Ka jingshit palat ka pynthykhong ia ki symbai thung bad kiwei kiwei de. Ha kajuha ka por dei ban ailad ia ka jingshai khnang ba ki jingthung kin lah ban shna jingbam ia lade. U jingthung ba tlot u kem pang klooi. Ka jingtap najrong ka donkam ha ki bynta ba jur slap ban iada ia ki jingthung ba dang rit na ki jingjaw slap. Ka dei ban don ka jingshna na ka bynta ban iada. Ia kane lah ban leh ha ka dur jong ka rynsan ba jrong kat ban biang ba long ban tap malu mala da u phlang.

Ka Rukom Shna Ia Ki Bunn Pynroi

Ia ka jaka thung tynrai sara dei ban shna ha kata ka dur ba ka pynkiang kan long 1.2 m bad ka jingjrong kan long kat kum ka jaka, ka jingjrong ba 8-10m kan kham bha, Dei ban shna hapteng ki bunn ia ka lynti kjat ka ba 0.7-0.8m. Ka jaka thung ka dei ban don ki bunn kiba ia ka khyndew la rah kham sha jrong na sla khyndew bad da kaba tih bha ia ka khyndew bad khleh lang ia ka khyndew, u shyiap bad ka eit masi ha ka bynta ba 2:1:1. Ka jingrah ia ki bunn kham ha jrong ka pynthikna ban jiar ia ka um bad pyntuit na kynriang.

Ia ki maw ki niut dei ban weng lut ban pynthikna bad ka jingmih jong ki sara kam long kaba kynrum kynram. Ia ki bunn dei ban da pynbeit bad pynjliah bha khnang ba ki symbai kin nym shah rong ha ka um sha ki nala ne ki jaka ba them. Kane kan pynthikna ba ka jingai um kan long ryntih ha baroh kawei ka bunn, khnang ba nym don ja ka thliw ne them ba kiei kiei kin lang.

Shitaiew shwa ban thung/bet ia baroh ki bunn dei ban synreit da ki dawai pyniap khniang ban iada na ki dkhah/kruin; bad kiwei kiwei ki khniang bad tit pdew.

Ka Rukom Pyndonkam Ia Ki Pla Plastic

Ki pla plastic ba pher ba pher dei ban pyndonkam kum ki khiew ban thung ia ki lyngkhot siej kum ba kdew harum:

- Ia ki lyngkhot tang:- 40 centimeters x 50 centimeters, 0.1mm ka jingrben.
- Ia ki lyngkhot tnad: 15 centimeters x 23 centimeters x 0.1mm ka jingrben.
- Ia ki lyngkhot tynrai ba pynmih thied - 15 centimeters x 23 centimeters x 0.06 mm ka jingrben.

Ia ki lyngkhot ba thung ha ki pla plastic dei ban buh shwa shi taiew haki jaka ba kah dum (kumba 50-60%) shwa ban buh ia ki ha ka sngi. Ki bunn ba don ka pynkiang kumba 1.2 meter kin don 4 tylli ki pla plastic heh ha ka shi lain bad kot haduh 12-15 tylli ki plastic ba rit. Ka jingjrong kan shong ha ka jinglong ka jaka; ka lah ban kot na 6-8 meters.

Ki tynrai siej ha ki pla plastic



Ki tynrai siej ha ka kper sara hapoh ki syrngiew ka jingtap



Ka Rukom Sdang Bad Pyniaid ia Ka Jaka Pynmih Ia Ki Sara Tynrai

Khnanng ba ki thied kin nym ia soh kyrdot, lang ha ki pla plastic bad suh shapoh khyndew ha ka pla plastic dei ban kynriah jaka man ka lai bnai. Lada don ki lyngkhot ba sdang phuh syntiew, ia kum kita dei ban weng shisien don na ki kper.

Ka jingai um, thiew niut, ka kah dum bad ai dawai khniang dei ban leh kat kumba donkam. Pynthikna ba ia ki symbai/ tynrai jingthung dei ban thung ha ki lain. Kane kan pynsuk haka por ba thiew niut.

Ka rukom Pynduh/Pyniap Ia Ki Khniang/Jingpang

Ka iap rynieng, ka thoh dak, ka iap sla ki dei ki jait jingpang ba ju iohi kynrei ha ki sara tynrai siej.

- Ka iap rynieng ka dei ka jinglong ba pyut u symbai. Da ka ba pyndonkam ia ki rukom trei ba paka lah ban pynduh ia ki jingpang na ki jaka pynmih sara. Dei ban kiar na ka jingai um than bad ki jinglong dum. Ia ki jait jingpang lah ban iada da ka ba khleh ia ki symbai da ki dawai pyniap khniang, tit pdew shwa ban thung ban pynduh ia ki jingpang.
- Ka jingpang thoh dak snur thapbawa ka shait boi ha ki jaka ba sngem bad shit, ka ktah bha ia ki tynrai siej jong ki jait siej kum u *Bambusa bambos*, (*Dendrocalamus brandisii*). Ka jingpang ki paw kum ki dak jngem ha ki met jong ki sara hajan khyndew bad saphriang sha baroh u jingthung lait noh na ki ar-lai ki sla lung . U jingthung bad ki sla ba kem pang ki kylla rong. Ia kine ki jait jingpang lah ban pynduh da ka ba pynduna ia ka jingdum ha ki bunn bad ka jingai um. Ka jingai dawai khniang ruh ka long ka ba donkam.
- Ka pang thoh sarang sla ka ktah ia baroh ki jait siej. Ka jingpang ka sdang kum ki dak rong dpei-kylla rong ktieh ba rit ha ki sla ba la iaw bad ki sa heh bad nang iar pat. Ki jingthung ki ba la shah ktah jur ki tlod bad ktah ia ki sla. Ka jing ai iada ka dei da ka ai dawai khniang.
- Ia ki jingpang thoh sla ba la pynlong da ki ba bun ki jait tit pdew. Ka jingktah jur jong kine ki jait jingpang ka shong ha ki jait siej bad ka rukom trei kam ha ki jaka pynmih sara. Dei ban bud ia ki rukom ai dawai kat kum ka bynta ba la bthah bad mang .

KA RUKOM KYNSHEW BAD KIT IA KI TYNRAI THUNG

Ia ki tynrai thung katba lah dei ban pynkloi ban thung. Teng khat donkam shisha ban buh shwa ia ki tynrai thung na ki ba bun ki daw, lane bym pat dep pynkhreh ia ki jaka thung ne na ka jinglong ka suin bneng. Ha kum kine ki khlep ia ki tynrai dei ban buh ha ki jaka ba dum. Donkam ban synreit um thikna, bad kane ka shong ruh haka jinglong ka suin bneng, bad ka por ban buh. Ka jingai um kan iarap ban pynsngem bad ai bor ia ki thied.

KA RUKOM KIT

Barabor don kam ban kit ia ki tynrai na ki jaka sara sha ki jaka thung bad kane kan long bunsien haba thung ha ki jaka ba heh, namar ban thung shisyndon ka long ka bym lah long. Lait noh haba thung da ki thied bah, khlem da kdew ia ki rukom pynkha/pynroi baroh khoit ki tynrai donkam ban da sumar ne buh ha ki jaka per sara ne jaka ba la pynkhreh ban ioh sumar biang kumba katto katne bnai shwa ban thung.

Bun na ki jaka sara ki pynmih iaki tynrai thung ha ki pla plastic. Barabor ia kine ym dei ban ai um shwa ban kit, ban iada na ka jingshong tynrong bad ka jingpait ka khyndew sawdong ki thied rit bad ki thied bah. Ha ki jaka ba shit bha ym donkam ban bud ia kitei ki kyndon ne lada donkam ban kit ia ki sha jngai.

Haba rah ia ki tynrai tyllong dei ban pynthikna ba la kyllan ia ki da ka khyndew, nangta thep ha ki pla byrni bad buh da pynieng khnang ba ki shylluid kim ym julor.

Bunsien ka long ka ba donkam ba ki jaka pynmih sara ki dei ban long ki ba khuid. Dei ban lum barabor ia ki niut ki jaboh namar ki ai lad ia ki khniang ba kin wan. Wat ai lad ban don ki jaka ba lang um. ■

KA GLOSSARY

a

apical dominance: ha ki katto katne ki jingthung, ki shylluid ba mih ha kynriang, hapdeng ka khnap jong u sla ki bym san ban pynlong tnat, khamtam ha kaba nyngkong; ia kane la tip kum ka jinglong halor duh

b

bud: u shylluit uba don ia ki bynta met symbai kiba san ban long syntiew, met bah ne sla; la sop ia kine ki shylluit hapoh ki sla kyrpang ba la khot i sla shylluit stang

bulbous: iasyriem ia u kynja piat, uba pyllun ne at

broadcasting: ka rukom ban bet symbai da kaba kawang saphriang halor ka sla khyndew

C

caryopsis: u soh jong u phlang, ha kaba u snep syrtap ba shabar jong u symbai u iadait ia ka kynroh ovary; u soh ba tang uwei u symbai, ba tyrkhong bad bym ju pait ne kob

clone: ka kynhun ki cell kiba long kumjuh ka jinglong, jinghiar pateng ba wan/ mih na u juh u cell ne ka jait met

clump: ka lypung siej ba kynthup bun ki tang siej

culm: ba la tip kum u 'siej' ne u tang, ba lah ban sngewthuh kum u bynta ba shajrong jong u siej lait noh u tyllong

culm shoot: u tang lung ha ka kyrdan ba u heh u san.

cutting: u bynta jingthung ba la dkhat bad lah ban buh hapoh khyndew ne um ban pynmih thied

d

desiccant: u kynja dawai uba kjit jingsngem bad ba lah ban pyndonkam kum u dawai pynrkhiang, nuksa, u silica gel jingiar; ki tang ki ieng marwei ym kum ka lypung siej

e

explants: ki bynta u siej ba la pynkhlad ban pynlong

morphology: ka saian jong ka rukom dur bad jinglong ki jingthaw ka bynta met jong ki jingthaw ba im ia ki tynrai ban pyndokam ha ka tissue-culture

f

farm yard manure (FYM): ki tait na ka rep ka riang ne jong ki mrad ba ri ban ban pyndonkam ha kaba pynsboh ia ka khyndew

flowering: ka jingjia ha ka jingim u jingthung ha kaba pynlong ia ki kynhun ba kyrpang jong ki sla ba kin mih ha ka jingthmu ban shim bynta ban kha roi da kaba phuh syntiew ban pynmih symbai

g

genotype: ka dak khubor barieh kaba iadei bad ka jinghiar pateng kaba don ha baroh ki jait jingim; la pyndonkam ia kane ban shna bad pynneh ia u jingthaw ba im

genus (genera): ka kynhun ba don ka jinglong kaba pher na kiwei ki kynhun jingim; ka kynhun mariang/ jingim ha ka kyrden pdeng kaba kynthup ia kiwei pat ki kynhun jait jingim kiba ha tduh ha ka jingpynkhlad ban ithuh (species)

i

inflorescence: ka jingmih kynhun kynhun ki syntiew shi jaka ha u jingthung ba la pynbeit ha kata ka dur ba ki pher na uwei u jait jingthung na uwei pat

internode: ka bynta jong u tang siej, tnat ne u tyllong hapdeng ar ki mat ba bud ter ter ba la khot ruh kum u 'pungmat'

m

monopodial bamboos: ki siej kiba mih ha ki jaka kiba ka jingkhriat jingshit ka long pdeng bad teng khat ba lah ban shah ia ka jingdait thah, la pyni dak da ki tyllong kiba jrong bad ki pungmat kiba ryntih ha ka jingwan dur, kiba ka lynter ka jrong ban ia ka

n

node: ka mat ne jaka ba mih tnat sla ne u shylluit, ba la kdew da u lain ba shynna bha

o

offset: u tyllong ryngkat bad u tang, ba la pyndonkam ban pynroi ia u siej

p

petal: u dob syntiew ba la pynlong da ki jait sla ba sop ki ban khring ia ki kniang ban wanrah pui pui syntiew (pollens)

pruning: ka jingngor ne jingpynduna ia ki tnat u jingthung ba la iap ne ba shah pynjulor bad pyniaid ban pynkhie im ia ka jingsan bad jingplung ki jingthung

r

rhizome: u metbah ba shapoh khyndew ne u bynta jong u metbah ba don ki mat bad ki pungmat ba tap da ki snep stang ne sla bad ba ju mih thied ha ki mat; la ju khot ia u ruh kum u 'tyllong'

rhizome neck: ka bynta ba khim jong u tyllong uba pyniasoh ia ki bynta ba kham rben

root primordium: u bynta thied ha ka por ba sdang ban khie ban sani

S

scale leaf: ki sop stang ba syriem ia ki sla na ka bynta ban iada ia u tyllong

secateur: ka tiar ot ba kyrpang

species: ka thup sdang ha ka ban pynithuh bad pynlong kynhun ha ka jinglong jan/ jngai ki jingthaw ba im; ka kynthup ia baroh ki jingthaw kiba long jan bad ba iasyriem bha bad ba lah ban iashongkha bad ki khun kiba shah kha ki syriem ne don ka jinglong kum ki kmie ki kpa jong kajuh ka kynhun

stigma: ka bynta ba bit halor jong u syntiew kynthui; u pdiang ia ki pui pui syntiew, bad iarap ha ka jingkha roi

sympodial bamboos: ba long kynrei ha ki jaka shit; ki tang siej ki ialeh ban mih synrop ban pynlong ka lypung siej

W

winnowing: ka rukom ban pyniakhlad ia u symboh na ki stait

KI KOT BA PYNMIH KA NMBA

An Annotated Bibliography (CD), Bibliography, T 200/ \$20

Palat 3000 ki kyrteng ki thup ba la lum da ka KFRI, Peechi kiba kynthup ia bun ki jait kam kiba ia dei ha ka liang u siej; ha man kawei pa kawei ka thup la air uh ia ka pasoh.

The Bamboo Book, Field Guide (FG 01 02/04) T 150/ \$15

Ka nonglamkhmat ia u siej; khamtam ia kito ki lympung siej ba long kynrei ha ka jaka shit. Ka nongkdwlynti bad ka nongpyni dak ban ithuh ia ki jait siej kiba pher kiba don kynrei ha ri India. Ia ki dak pynithuh la pynkhreh ha kata ka rukom ha ki jinglong dak kiba lah ban ioi bad pyniapher hapdeng jong ki jait siej.

Bamboo Flooring, Market Assessment (MA 01 02/04) T 250, \$25

Ka jingpynshongdor ia ka iew ka hat hapoh ri ia ki lyntang siang tyngkong ba la shna na u siej bad kiwei pat ki jait mar bad ka buit pyniaid iew.

Bamboo Furniture Components, Market Assessment (MA 02 02/04) T 250/ \$25

Ka jingpynshongdor ia ka iew ka hat hapoh ri jong ki miej, ki shuki, ki almari bad kiwei kiwei ki tiar buh/ shong ba la shna na u siej ba khleh lang bad kiwei ki jait mar bad kumjuh ka buit ban pyniaid iew.

Building with Bamboo, Training Manual (TM 01 02/04) T 200/ \$20

Ka kitab jinghikai ban tei/ shna iing da ki siej bad ki jait mar ba la khleh bad u siej. Ia kane ka kitab la thoh da ka TRADA, UK da ka jingkyrshan lang jong ka DFID.

Bamboo Shoot Processing, Training Manual (TM 02 02/04) T 100/ \$10

Ka kitab jinghikai na ka bynta ka imlang sahlang/ ka kynhun ba shna ia ki lung siej, da kaba pyndonkam ia ki tiar kiba suk bad kiba tat.

Propagating Bamboo, Training Manual (TM 03 11/04) T 150/ \$15

Ka kitab jinghikai kaba iadei ha ka jingpynroi ia u siej lyngba ki symbai bad ki bynta siej.

Cultivating Bamboo, Training Manual (TM 04 11/04) T 200/ \$20

Ka kitab jinghikai kaba ai bun ki jingtip shaphang ka jingrep ia u siej kaba thew kyrpang ia kito ki kper siej ha ka jingpyniaid kaba paka.

Kino kino ki briew kiba kwah ban thied ia kine ki kot, kin sngewbha ban phah ia ka crossed (a/c payee only) bank drafts ne ka cheque jong ka bank ha Delhi ba la thoh ha ka kyrteng "TIFAC". Ia ki bank draft dei ban thoh ba dei ban siew ha New Delhi. Ia ki cheque ki bym dei ha Delhi dei ban ai sa T60 nador ka dor jong ka (ki) kot na ka bynta ka jingpyniaid ia ki cheque (\$2 na ka bynta ki cheque na ri nongwei).

- Ki dor ia ki kot ba la pynmih hangne ki kynthup ia ka bai song bad bai phah parcel ha India bad shabar ri.
- Na ka bynta ki orders kiba palat T3000 kan don ki jingpynduna dor 10% kat kum ka rukom

Ia ki cheque/ draft dei ban poi sha ngi ha kane ka address harum:

National Mission on Bamboo Applications (NMBA), TIFAC

Vishwakarma Bhawan, Shaheed Jeet Singh Marg

New Delhi 110 016

India.