



सत्यमेव जयते

GOVERNMENT OF MEGHALAYA

Ki rukomban thung ia u Lemongrass



Ki jait lemongrass ban pynroi: var. Krishna, U ba
ia hap ha ki jaka bajur slap bad ba sharing



CSIRWtMAP

In Collaboration with
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Institute of Natural
Resources, MBDA

Shaphang ki jingthung ki ba pynmih ia ka jingsma iwbih (Aromatic crops) ha ka Jylla:

Haba phai ha kane ka juk jong ka jingdon jong ka stad saian (Technology) ha ka ba ia dei bad ki dawai kynbat ne ki jingthung ki ba pynmih ia ka jingsma iwbih (Medicinal and Aromatic plants), la shem ba shibun ki jingthung kiba don ia kane ka jinglong ba kyrpang kum kine ki don ha ka jylla jong ngi ruh, ki don ruh ka jingkyrmen na ka bynta ka jingioh jingmyntoi da kaba shna ne pynwandur ha ki rukom jingpyndonkam ka ba man la ka sngi, da ka jingiarap jong ki buit stad saian ba lah ban leh hi da ki nongrep.

Ka jingpynmih ia kane ka jingthoh kan long ka jingiarap ha ka jingpyni lynti na ka bynta ka jingioh jingmyntoi jong ki nongrep, kan kyntiew ruh ha ka jingioh jingkot ka jylla Meghalaya lyngba kane ka rukom rep (Farming system). Ha ka jing ia dei ba kyrpang bad ka jinglong jong ka mariang (agro climatic condition) ha ka jylla Meghalaya, ka jing long tynrai (natural) jong ka khyndew ha ki jaka ba pher ba pher jong ka jylla, ka long ka ba ia hap bha ia une u jait jingthung u ba lah ban ai jingmyntoi (Commercial crops), ia kane ka rukom rep la kyntiup kyrpang ha poh ka Aroma Mission.

Ka jinglong ba kyrpang jong kine ki jait jingthung:

- Kine ki jait phlang kiba don ia ka jingsma iwbih, ki don ruh ka jinglong ba kyrpang ha ka ban pynbha ia khyndew bad ruh ki ba lah ban iarap ban kyntiew ha ka jingioh jingkot jong ki nongrep.
- Ki ba lah ban sumar/pynsan hi da ki nongrep.
- Kiba lah ban heh ban san ha baroh ki jaka jong ka jylla Meghalaya.
- Ki iarap ruh ha ka ban pyneh pynsah ia ka um bad ruh ban iada ia ka jingrong noh ia ka khyndew sboh.
- Ka long ruh ka jingrep kaba lah ban iaineh ha ka juh ka jaka khlem da donkam ban kylliang ia ka jaka rep.

Ki kyrteng jong ki kait jingthung ki ba don ia ka jingsma iwbih bad kiba kyntiup hapoh ka Aroma Mission (Sources: CSIR-CIMAP)

- Menthol Mint (*Mentha arvensis*)
- Damask (*Rosa damascene*)
- Khus (*Chrysopogon zizanioides*)
- Lavender (*Lavandula officinalis*)
- Geranium (*Pelagonium graveolens*)
- Palmarosa (*Cymbopogon martini*)
- Rosagrass (*Cymbopogon nardus*)
- Java Citronella (*Cymbopogon winterianus*)
- Wild marigold (*Tagetes minuta*)
- Patchouli (*Pogstemon cablin*)
- Tulsi (*Ocimum*)
- Rosemary (*Rosmarinus officinalis*)
- Sea wormwood (*Artemisia maritime*)

Kyteng saian (Botanical Name): *Cymbopogon flexuosus*

Kynhun/Longing (Family): Poaceae

Kyteng kyllum (Common Name): Lemongrass

U Kynja dawai ba kham kyrpang ba u ne u jingthung u don (Main Chemical Constituent): Citral.

Ka jinglong ka khyndew bad ka jinglong ka mariang (Soil and Climate): Ka khyndew ba sboh (Loamy), khyndew sboh ba khleh shyiap (Sandy Loam), Ki jaka ba shit lhop ha ka por lyiur bad syaid ha ka por tlang (Tropical) sha duh ki jaka ba long shit ha ka por lyiur bad ba khriat daithah ha ka por tlang (Sub-tropical).



U Lemongrass

Ka por ban thung (Planting time): Lber (March), Naitung (June) bad Jylliew (July).

Ka por ban ot (Harvesting time): Nyngkong eh 100-120 sngi, ba bud nangta 100-190 sngi na ka por ba thung.

Ka jingiohnong/hectare/shisnem (Net profit): Rs.60, 000 Approx.

U jait jingthung ba kham im bha (Improved variety): Krishna.

U Lemongrass (*Cymbopogon flexuosus*) u dei u wei u jait jingthung u ba lah ban pynmih ia ka umphniang ba sma iwbi (Essential oil) bad u ba don kham bun ki kynja dawai ba khot citral, u ba ju kham shait pyndonkam ha ka jingshna ia ki umphniang ba sma iwbi (Perfume) bad ruh ban shana dawai Vitamin A. Ban tip ba ka umphniang ka don ne em ha ka jinglong (quality), kata ka ba bha ne ba duna ka shong eh ha ka jingdon jong u kynja dawai citral. Ka ri India ka pynmih haduh 700 ton ka umphniang lemongrass bad ka ba bun eh la shalan shabar ka ri. Kan kyntiew ruh ia ka ioh ka kot lada ngi lah ban pynmih kham bun (Quantity) ia ka umphniang jong u lemongrass namar ba ka jur bha ka jingdawa bad ruh u long u ba suk wat ban thung ha ki jaka bym ju pyndonkam lane jaka ba tyrkhong um. Ia ka umphniang lemongrass la pyndonkham kham bun da ki karkhana shna sen (perfumery industries) bad ruh ia une u kynja dawai citral ba ioh na u ka umphniang lemongrass la pyndonkam ruh ha ka ban shna ia ki dawai pyniap khniang jingpang (Germicide). Ia ki phlang lemongrass ba la tyrkhong lah ruh ban pyndonkam ha ka por ba shna umphning (Distillation process) da ka ba thang ban pynkhluid ia ka mashin (Distillation unit). La pyndonkam ruh ha ka ban shna kot sada lane kynja lyntang lyngkhot (Cardboard). Lah ban ot ia une u jingthung haduh 3-4 sien ha ka shi snem bad u lah ban pynmih umphniang haduh 100-159 kilo ka umphniang na ka shi hectare, kata ka shong eh ruh ha ki jait khyndew (**Sources: CSIR-CIMAP**).

Ka jait Khyndew bad ka jinglong ka mariang (Soil and Climate): U lemongrass u lah ban san lut ha jan baroh ki jait khyndew kata naduh ka khyndew ba long jew (acidic) haduh ba long bun mluh (Saline/alkaline) ha ryngkat ka rukom thew ia ka jinglong kaba jew ne ba bun mluh kata ha ka rukom khein saian ka long haduh ka pH 9.5 khlem kano kano ka jingtah ia ka jingioh (yield) ia ka umphniang. Ha ki jaka khyndew ba longsbh shyiap bani malu mala bad desaw ki don kam ia ka suinbneng ba long shit lyhop (Humid climate) bad ruh ki don kam kham bun ia ka sngi. Lah ruh ban thung kumto khlem da ai um (rainfed crop) ha kaba ka jinghap slap kam dei ban duna naka 800mm ha ka shisnem.

Ka rukom pynkhreh ia ka khyndew (Preparation of land): Shoh kham ni ia ka khyndew ha shwa ban thung. 2-3 sien puh ne lur ia khyndew bud nangta lum ia ki nuit bad pynmadan bha ha kata ka rumkom khnang ban suk ban thung ne sumar.



Kaba pynkhreh ia ka khyndew shwa ban thung

Ka por ban thung (Planting time): Lah banpynkharoi da kaba bet da u symbai lane da kaba thung da u tynrai (slips). Na ka bynta ban ioh ia ka umphniang ba bha bad ban ioh kham bun kan kham bha ban thung da ki tynrai ba la pyniakhlad na ka shikynhun ki tynrai (clumps). Ka por ba kham biang ban thung ka dei naduh ka taiew ba khatduh u bnai Jylliew (June) lane taiew ba nyngkong u bnai Naitung (July), watla katta ruh ka shongeh ha ka jinghap slap. Hynrei, ha ki jaka ba don tlong um ban ai um (irrigation) lah ban leh ha kano kano ka por lait noh ha ka por ba jur bha ka jingkhriat (Naiwieng haduh Rymphang). Ia ki tynrai ban thung hap ban ot ia ki thied ba kham jrong bad ieh antad shi inshi lane ar inshi bad weng noh ia ki sla iap. Ia kine ki jingthung lah ban thung ha ka jingngai kumba 60×30 cm lane 60×45 cm na u wei ha u wei u tynrai, watla katta ruh ka shongeh ka ka rukom long ka khyndew.



Ka jaka Sara Symbai



Ki Jyntag (Slips) jong U Lemongrass



Ka rukom thung haba dang sdang thung nyngkong

Ki jait jingthung ba kham kyrpang (Improved Cultivars): Pragati, Praman, Cauvery, Krishna, Chiharit bad Nima ki dei ki symbai ba kham kyrpang jong u lemongrass ba lah ban ioh na CSIR-CIMAP, Lucknow, Utter Pradesh.

Ki sboh bad jait dawai ba hap ban ai (Manures and Fertilizer): Khein antad don kam la kumno kumno 150 kilo ka sboh dawai shini (Nitrogen), 60 kilo ka sboh dawai dpei (Phosphorus) bad 60 kilo

ka sbob dawai saw bani (Potash) ha ki jaka ba don tlong um ban ai um ia u jingthung (Irrigated lemongrass). Ai pura ia ki sbob dawai dpei (Phosphorus) bad sbob dawai saw bani (Potash) ryngkat bad 1/3 ka sbob dawai shini (Nitrogen), hap ban ber ha ka lyngkha shuwa ban thung kata kamut ha ka por ba puh/lur khatduh eh. Ka bynta ba sah jong u dawai shini (Nitrogen) hap ban ai mar mar katjuh ha baroh ki por ba la dep ban ot, kata ha baroh 3 ne 4 sien ot ha ka shisnem. Bad ym da donkam ban ai dawai sbob ha ki jaka bym pat ju thung jingthung.



Ki jaka rep ia u Lemongrass

Rukom ai um (Irrigation): Ka jingdonkam um une u jait jingthung ka long ka ba duna bha. Watla katta ruh, na ka bynta ban ioh ia ka jiniohnong ba pura kan kham bha ban ai um la kumno kumno 10-12 sien ha ka shisnem ia une u jait jingthung ha ki jaka ba khriat daithah ha ka por tlang (Subtropical parts). Ha ki jaka bym don kam ban ai um, ka por ban ai um ka dei naduh u bnai Nohprah (December) haduh u Lber (March). Donkam ban ai um ha man la ka por ba la dep ban ot.

Ka por ban ot (Harvesting): Hap ban ot ia une u jingthung da kaba ot ia u jyntang la kumno kumno 20-30 cm kham ha jrong na ka sla khyndew. Ha ka por ba rep nyngkong 2-3 sien ot lah ban ioh ot bud nangta ha ki snem ba bud 3-4 sien ot lah ban ioh ot da kaba suk ha ka shi snem. U ne u jait jingthung u dei u ba lah ban im kham bun snem, kata la kumno kumno u lah ban im haduh 5 snem kynthih.

Ka jingioh (Yield): Lada khein kyllum la kumno kumno haduh 100-120 kilo/hectare/snem lah ban ioh ia ka umphniang na une u lemongrass kata haba khein kat kum ka rta ka jingjrong jong u ban im lane pynmih umphniang kaba long haduh 5 snem.

Ka jingiohnong na kane ka rukom rep (Economics of Cultivation): Haba khein kyllum ia ka jingioh nong (net profit) lah ban ioh haduh Rs. 60,000/hectare/shisnem na u lemongrass kata lada khein kat kum ka rta ka jingjrong jong u ban im lane pynmih umphniang kaba long haduh 5 snem.

DISTILLATION: KA RUKOM BAN SHNA IA KA UMPHNIANG

Ka distillation ka dei kawei ka rukom shna ia ki umphniang ba kham kyrpang (essential oil) ha kaba shi tyllup ka pyrthei ki kham pyndonkam. Palat 90% ki umphniang (essential oil) la pynmih da kane ka rukom shna ba la tip kum ka distillation. Ha kane ka rukom shna ia ka umphniang, ia uno uno u bynta

jong u jingthung ba mut ban shna umphniang la shet pyntham bha bad ka um haduh ba ka umphniang ka ba don ha u jingthung kan kylla jynhaw lang bad ka um. Ia ka jynhaw um-umphniang hap pynpjah da ka ba pyndonkam da ki tiar pynpjah (Condenser). Ynda ka la pjah kane ka jynhaw-umphniang kan sa kylla um biang, hadien katta sa pyniakhlad ia ka um bad ka umphniang da kaba suk namar ba ka um bad ka umphniang kan nym ia khleh lang.



Ka Umphniang Lemongrass

KA KOR SHAN UMPHNIANG (DISTILLATION UNIT) BA LA SHANA KYRPANG LANE PYNWANDUR BHA DA KA CIMAP

Ia ki kor shna umphniang ba la shna da ki trai shnong lane paitbah ki ba long tad dor, ba kloï ban shna bad ba kham duna ka jinglut ki kham duna ha ka rukom pynmih umphniang bad ruh ka umphniang kam da bha paka.

Ban kham ioh bun bad kham pynbha ia ka umphniang, ka CIMAP ka la shna ia ka kor ba kham kyrpang ka ba lah ban shet san spah kilo haduh ar hajar kilo ki bynta jong u jingthung ha ka shisien shet. Kine ki mashin ki kham i skhem bad ruh ba la shna bha da ka stil ha ka bynta ban shet ne thep ia u jinthung ka bym nym bit jakhlia (Stainless steel). Kane ka mshin ba la shna da ka CIMAP la pyniasnoh lang da ki tyndong nar ba lah ban rung ka tdem, ka ne ka iarap ban pynduna ia ka por ba kan shit/khluid ka um, ka ba pynduna ruh ia ka jinglut jong ki dieng thang lane rnga haduh 20-30%. Ia kane ka kor la pynwandur bha khnang ban pynsuk suk, da buh ia ka jaka ban thep diengiap/diengthang, u atoskhana bad ia ka jingkhlang ban iada ia ka jingsaphriang ka dieng ba klang. Ia ka tyndong nar ba rben ba lah ban shah ia ka jingkhluïd (furnace) la pyniasnoh lang ha u atoskhana ba jrong ba kham pynduna ia ka jingsaphriang ka tnem dieng ha ka jaka ba trei. Ia ka karma still ka ba don ha poh une u tyndong nar la pyniasnoh bad u tiar pynpjah (consenser) u ba kloï bha ban pynpjah ia ka jynhaw um u ba iarap ruh ban pynduna ia ka jingduh ei ka umphniang. Ia ka um ba khleh lang bad ka umphniang ba la lang hadien ba la pynpjah da u ne u tiar pynpjah la ailad ban tuid lyngba ki tyndong nar ba la shna kyrpang ha ka ban pyniakhlad ia ka um bad ka umphniang. Ia kane ka kor shna umphniang la pyndait lang bad u kynjri tan ha ka jingtap (lid) khnang ban suk ha ka por ba trei. Ka CIMAP ka la shna pynwandur da ki nar bad la shalan bun tylli ki kor ha ki nongrep/nongseng kam lade (entrepreneurs) ha kylleng ki jaka ka ri.



Ka Kor shet umphiang