

Serthlum hi Mizoram ah chuan thei pawimawh leh lar tak a ni a, thei enkawl leh duat ngai tak ani. Kan chin dan leh enkawl dan ten a la zir tawh loh avangin kan thar tam tawh lo fo thin. Serthlum hi Hmun san lam: 600-1100m, Vawt tehna: 20-32 C, lei thur lam: 5.5- 6.5 pH, lei dur tha leh ban lo lei al lam aiin thur lam deuh, Boruak lum leh vawt inchawih tawhna hmun ,Hmun thengthaw nuam, Tui lakna tur awm theihna hmun ah a tha duh hle a ni.

- ❖ A to bul: China
- ❖ Botanical Name: *Citrus reticulata* Blanco
- Lei leh khur sawngbawl dan tur :**
- ❖ Khur Ft. 2-3 a thuk leh zau in laih tur
- ❖ Phun hma daiha khur lo laih lawk tur ( theih chuan kum hnih hma lamah khur laih lawk tur ani)
- ❖ Lung leh meihawl tin 1-2 chhun hmasak tur
- ❖ 15-20 kg FYM
- ❖ 100g Urea
- ❖ 100g MOP
- ❖ 300g SSP
- ❖ Lei chunglang 30 cm (ft. 1) chawhpawh in a khur hnawh tur
- ❖ Khur chu lei atanga 10cm vela pawnga vur tur

#### Phun hun :

- ❖ May –June ( fur tan tir lam )
- ❖ June- August
- ❖ Bud (a mit zawm) chu lei atanga 15 cm vel ni thei se

#### Phun inkar hlat lam :

- ❖ 5m x 5m

#### Intercropping :

- ❖ Kum 1-5 a nih hma in french bean leh vegetable dang pawh a chin theih
- ❖ Sawhthing, aieng leh bal lam chi a tha lo
- ❖ Lakhuihthei pawh a tha lo

#### Lei tha pek dan tur :

- ❖ Fertilizer te hi a kungpui atanga 20-25cm a hla ah, rin biala pek tur a ni, leiin pan te a khuh leh tur
- Kum 10 a upa tan

#### A tang hlawi ( Pruning) :

- ❖ A kumkhatna ah a zar 50cm lei atanga tehin hlawi vek tur a ni a, chuan a zar ngil tha 4-6 zuah tur a ni.
- ❖ A tang dawngnguakte ( water shoots ) hlawi zel tur
- ❖ A rah lawh zawh ( jan- feb) hi a tang hlawi hun ani
- ❖ Kung khat hleh zawh apiangin hmanruate tih fai zel tur a ni ( a theih chuan)
- ❖ A tang hlawina hmuam hma hi bordeaux paste hnawih zel tur.
  - A tang lian deuh hlek (2cm) chu bordeaux paste hnawih zel tur.

#### Enkawh zui dan :

- ❖ Ser tiak phunte chu lei seh chin atanga 50cm aia hniam peng awm zawngte chu paih zel tur
- ❖ Bordeaux paste in a kung bul chu kum 1 ah wavi thum jan-feb, may-jun, sep-oct ahte hnawih tur
- ❖ Vah a hal fai bawh chuan balhla te phun a tha
- ❖ A kung enkawl leh leitha / tuipek awlsam nan halfmoon terrace psiam ngei a tha
- ❖ Kum tin lei thur ven nan: chinai 5 kg kung tinah pek tur
- ❖ A rah lawh hma a tha
- ❖ Kum khat ah lei tha wavi thum : Feb-March
  - July-August
  - Oct- Nov
- ❖ A rah tla tur ven nan: Growth hormones 2-4 D @ 1g/100 litre a sen laiin, emaw
- ❖ Planofix @ 1ml/ 5 litre ( march- april leh august leh sep)

#### Rannung leh a ven dan:

##### Citrus trunk borer ( *Anoplophora versteegi*)

- ❖ Kum sawm aia naupang serthlum kunga tichhe deuh ber
- ❖ A pangang/ vual ang chuan a kung a eichhe thin
- ❖ A pui in a hawng a eia
- ❖ A kung chu alo ro a, a thih phah thin



#### Enkawh dan

- ❖ Lapuaah petrol / khawnvartui hnawiha a kua hnawh tur. Lei banin a kua chu bel hnan leh tur
- ❖ Bordeaux paste – Dec- Jan
  - March- April
  - Jun- july ah hnawih tur
- Monocrotophos (Nuvacron): 2ml /litre
- Dichlorvos ( Nuvan): 2 ml/litre

#### Citrus leaf miner ( *Phyllocnistis citrella*)

- ❖ A hnahah phunhawrawp angin a rang
- ❖ A hnah pian a tidanglam in a ti chuar bawh
- ❖ A nasat tawh chuan ahnah a tla thin

#### Enkawh dan

- ❖ Polyhause hnuaiah nursery siam in a ti tlem deuh thei
- ❖ Rogor @ 1.5ml/litre
- ❖ Nuvacron @ 2.5ml /litre

#### Scales insect ( *Aonidiella aurantii*)

- ❖ Thlaia awm tuihnang an dawt
- ❖ Honey dew( Khawizu ang deuh) an ti chhuaka, chu tah chuan hmuar a to thin
- ❖ A nasat deuh chuan hmuar a to khat vek thin

Rogor @ 1.5m/litre

#### Citrus butterfly ( *Papilio demoleus*)

- ❖ A no pangang chuan nursery a tichhe nasa
- ❖ A hnah no an ei a, an ti kawh nasa thei hle
- ❖ Ruah sur hun laiin a pung duh bik
- ❖ Enkawh dan:
  - Monocrotophos (Nuvacron) @ 2ml/litre
  - Chlorpyrifos @ 2ml/lit

#### Natna leh a enkawl dan

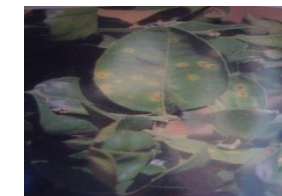
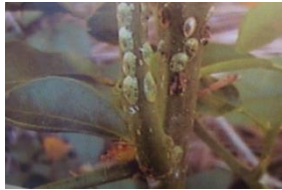
##### Powdery mildew ( *Ser vut buak* ):

- ❖ Hmun hnawng leh vawt-ah an tam duh bik
- ❖ Lapua ang deuh vut buakin a hnah leh atang a bawm
- ❖ Hnah to tantir chu athang thei lovin a tichuar

Sulphur powder 2 gm / litre of water a vawihnih kah tur

#### Bacterial canker

- ❖ Pan khir ang deuh rawng engin a bial
- ❖ Ruah sur laiin atam duh
- ❖ Bordeaux mixture in Feb, Oct leh Dec ah kah a tha



### Citrus gummosis

- ❖ A kung leh a tang atangin Thil ban (gum) a ti chhuak
- ❖ A hawng a lo khi a, a hnu deuh ah a lo ro a, a hawng a tla thin
- ❖ Bordeaux paste ( 50-75 cm) hnawih tur
- ❖ Ridomil MZ-72:  
2.7gm/litre of water+ Bavistin 1gm/litre of water = litre 10 vel siam a, a buk kah nan 4litre, abak 6litrechu leiah kah tur



### Felt disease:

- ❖ A tang leh kung-ah hmuar a to
- ❖ Zawi muangin a kung a ti ro thin
- ❖ Bordeaux mixture thla hnih danah kah tur



### Chaw tha tlakchham vanga harsatna awm thei te

#### Zinc:

- ❖ A hnaha thazam chin a hringa, a dang zawng a eng
- ❖ Multiplex@ 2.5/lit of water



#### Iron:

- ❖ Lei al lutukah ah a awm duh
- ❖ A rah a te thin
- ❖ Ni thlar a han en hian a hnah zung zam chu hmuh theih in ala hringa. Mahse, a nasat tawh erawh chuan a hnah a eng vek thin.
- ❖ 2mg of Ferrous sulphate/1 litre of water



Multiplex@ 2.5g/lit of water

### Calendar of operation for the management of diseases and pest in mandarin:

#### Dec- Jan

- ❖ A tang thi leh nate chu hlawia, bordeaux paste hnawih tur
- ❖ Bordeaux mixture ( 1%) a kah bawk tur

#### Feb

- ❖ Chinai thi @ 3kg/tree

#### March – April

- ❖ 30kg Bawng ek ro tha
- ❖ Borbeux paste in a kung 50cm a sang chinah hnawih tur
- ❖ Bavistin 1g/ litre + Monocrotophos ( 1ml/ lit) a kah tur
- ❖ Ni 15 hnuah Bordeaux mixture 1% in kah leh tur p

### May

- ❖ Rannung liante man khawma thah tur

### June- july

- ❖ Bordeaux paste in a kung 60 cm a sang chin-ah hnawih tur
- ❖ Bavistin 1g/ litre + Monocrotophos ( 1ml/ lit) inkah tur

### August – September

- ❖ A kung lei seh atangin 50cm chin ah bordeaux paste hnawih tur
- ❖ Bavistin 1g/ litre + Monocrotophos ( 1ml/ lit) a kah tur
- ❖ Ni 15 hnuah Bordeaux mixture in kah leh tur
- ❖ Kua a awm chuan lapuaah petrol emaw nuwan@ (2ml / litre) hnawih, akua hnawha, chirh a bel hnan tur

### Bordeaux Paste siam dan :

- ❖ Copper Sulphate 100gm kha tui liter chanve ah chawh ral tur (Bucket hran ah)
- ❖ Chinai (quick lime) 100gm kha tui liter chanve ah chawh ral tur (Bucket hran ah)
- ❖ Copper Sulphate leh chinai chu bucket hranah chawhpawlh tur

### Bordeaux Mixture siam dan :

- ❖ Copper Sulphate 1kg kha tui liter 50 ah chawh ral tur (Bucket hran ah)
- ❖ Chinai 1kg kha liter 50 ah chawh ral tur (Bucket hran ah)
- ❖ Copper Sulphate leh chinai chu bucket hranah pawlh leh tur.

- Serthlum kung bul hi 4ft vela bial in laihzawl ngei ngei tur, hei hian lei tha pek leh tui pek a ti awlsam.



### Prepared by:

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## Mandarin Orange (Serthlum) chin leh enkawl dan



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