

TRAINING MANUAL

SAPTHEI CHIN LEH ENKAWL DAN



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SMS(Horti.)

KVK, Khawzawl

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SAPTHEI

Botanical Name : *Passiflora edulis*

Family : Passifloraceae

A tobul : Sapthei hi a lo chhuah tanna ram chu Brazil a ni. India ramah chuan chin uar vak ala ni lo hle. Coorg (Karnataka), Kerala hmun then khat ah leh North East ah te chin ani tlangpui.

A chi hrangte :

Passiflora edullis Sims (A nainawk): A hnah a te a, ram vawt deuh hlekah a tha duh hle. A rim hi a eng chi aiin a na zawk a, a tui sawrin a rawng a eng a ni. Natna collar rot, stem swelling (a kung baw), thlai rulhut harsatnate a nei duh.

Passiflora edullis Sims (A nainawk):



Passiflora edullis f. *flavicarpa* Deg (A eng): A nainawk aiin hnah a lian zawk. A tui sawr in a serthlum rawng a ni. Natna collar rot, stem swelling (a kung baw), thlai rulhut harsatnate do theih chin a nei.



Passiflora edullis f. *flavicarpa* Deg (A eng)

Kavery : A nainawk leh a eng thlahpawlh. A thar a hlawk in natna collar rot, stem swelling (a kung baw), thlai rulhut harsatnate do theih chin a nei.

A ngeihzawng boruak, sik leh sa leh lei :

Mizoram climate lum lutuk silo, vawt lutuk silo hi a nainawk chi hian a ngeih hle a, Temperature 20-30⁰C leh ruah tui in sem rual tak leh vurte a tlak loh avangin athar atha thei hle. Nov- March, thal laia tui pek tur awm loh avangte hian a thar a ti tlem thei. Lei hrang hrangah a tha thei, mahse lei tui luan ral zung zung theihna leh lei thur lam tehna a 6.5-7.5 velah a tha thei hle.

A chin pun dan:

A mit zawm:

Nainawk sapthei hian natna a do zawh loh em avang hian natna thenkhat do thei a eng nen zawm a lo ngai thin a, chu chuan natna tam tak a do tir a. A zung lam pangah a eng hmana chu chu root stock an tia, a chung lam a tan anainawk hman thin ani a, chu chu scion an tia.

1. Scion leh root stock len lam in ang lak tur
2. June - July ah scion lak tur, 20 cm vela sei, mit 2-3 emaw nei.
3. Root stock chu tan chhum in, alaiyah 3-4cm zai kak tur.
4. Scion 3-4cm hmawr chu, zai awn tur a lehlam lehlamah.
5. Scion chu root stockah khan zawma, plastic emaw puan emaw a tawn tur.
6. Ni 30-45 velah a tuamna chu a phelth theih.



A chi atang a tihpun :

A tlangpuiin a chi atanga tih pun a ni deuh ber a. Thenkhat chuan a rah hmin tha chu karkhat vel an dah vuai hmasa te tea, ti chuan a chi an la chhuak chauh thin

- 1) A chi chu kui vat tur (a to a tha bik), arah atanga lak chhuah hnuin ni 15-20 chung ngeiin.

- 2) A chi tur hi a kung hrisel leh rah hmin tha atangin lak tur.
- 3) A chi lak chhuah hnuah silfai a pho ro tur.
- 4) A chikuina tur lei chu lehphut vek tur.
- 5) Bawnggek, vawkek te leh phut hnan dap tur.
- 6) Leh phut hnuah sapthei chi chu feet $\frac{1}{2}$ dana hmawlh rin khuar a inch 1 dan zelah dah tur, 1.5 cm a thukin.
- 7) A chi dah hnuah leiin 1cm vela chhahin vur leh tur. Leia vur hnu hian di emaw, saiip emawa chhah lotea khuh tur.
- 8) Tui duh ang tawk pek theihna hmunah chauh sapthei kuina hi siam tur.
- 9) Hnah 2-3 an neih hunah poly bag- ah phun sawn tur.
- 10) Poly bag kan hmang a nih chuan lei leh bawnggek (2:1) chawhpawlh a thun tur.
- 11) Poly bag chu daihlmah dah tur.
- 12) Thla 3-4 hnuah a phunna tur tak takah phun sawn tur.

A tang tan chhum (Cutting):

- 1) Kung rah tha tak atang chauhin a tang lak tur.
- 2) A tang chu 25-30 cm a sei, mit 3 emaw 4 emaw nei ani tur a ni.
- 3) May-June a rah seng hunah a tang lak tur.
- 4) A phun na turah thla khat leh a chanve emaw thla hnih velah emaw phun sawn tur.

Phun dan:

Phun tur chu 30-40cm vel tala sang a ni tur ani. May-June thla a phun ani tlangpui. A khur feet hnih tala thuk a laih nise, khur tinah bawnggek lei tha 15kg tal telh ni thei se, Half moon terrace tlangram ah siam tur, leitha kal ral tur vennan. Phun zawhah a bul vel lei chu tihngheh hle tur. A kar hlat lam hi a thlur leh a thlur 3m, a kung inkar 3m vel tal ni thei se.

Zam tir dan:

Kniffin system



Mau, rua, thing tuai 3-4m a in karah phun tur, wire 3-4 vel zam tur, wire inkar hlat lam 30cm. A zam chhoh a, thirzai a han man theih nan a bulah mau/ thing etc kezungpui tiat vel, a khangin a man ngheh theih tur phun vek tur. Buara hrui pawh a hman theih . A zikpuin thirzai a han thlen veleh, a zik sih chhum tur.

Pergola/ pandal system:



Thirzai zam kawkalh nukin 2-2.5m vela sangah thir emaw, mau emaw a do kan tur ani. A tang chu pakhat chauh zam chhoh tir phal a ni a, wire a thlen hunah tam tak chawr tura tan chum tur. Hei hi Mizorama kan hman uar ber a ni.

Lei tha pek:

Kum tuana a rah deuh reng avangin lei tha pek deuh reng a mamawh. Bawngkek, vawkek, ar-ek etc bakah hnim hnah tawih pek reng tur. Chemical fertilizer pawh a rah tih tam nan leh a kung than that nan pek a tha.

Upat lam	Dec-Jan	Feb- March			June-July		Sep-Oct	
	Bawngkek	Urea	SSP	MOP	Urea	MOP	Urea	MOP
Kum 0-1	15 kg	100	100	200	100	50	50	50
1-2	20 kg	150	150	250	150	50	50	50
2-3	20 kg	150	150	250	150	100	100	100
Kum 4 chin	20kg	150	150	250	100	100	100	100

Tui pek :

Dec- April velah hian tui pek theih nise. Sapthei kung hian tui duh ang tawh a hmuh that loh chuan arah a tlem phah thei.

A tang hlawi :

A zik chawr thar atangin sapthei hi a rah thin. A zikpuin thirzai a han thlen veleh a zik sih chhum tur. In zam thuah lo bawh se, a in zam thuahna laiah a rah tam thei lo. Kum 4-5 hma hian a thar a hlawk tlangpui. Hemi hnu hian regular taka hlawi a pawimawh. A rah zawh June-July emaw, thlasik lai emaw a hlawi thin tur.

A rah seng :

Phun atanga thla 9 -10 velah an rah tan a. A zawm chi leh a tang atanga phun anih chuan thla sarihvelah an rah tlangpui. Ni 70-80 a par atangin arah a puitling thei a. Sapthei rah hi polythene bag-ah 7-9⁰C velah kar thum chhe miah lovin a dah theih. A thar theih dan tlangpui chu a eng leh Kavery hi 16-20 kg kung khatah a thar thei a. A nainawh chi ah chuan 8-10 kg vel hi kung khatah a thar tlangpui.

Sapthei tui siam dan (for commercial)

Mamawh te :

- | | | |
|------------------------------------|---|--------------------------------------|
| 1. Sapthei | - | 1 litre |
| 2. KMS | - | 3 gms (for squash), 1 gm (for juice) |
| 3. Chini | - | A thlum tawk |
| 4. Sapthei essence emaw Tartrazine | - | Tlemte (a rawng tih mawi nan) |

A siam dan :

1. Sapthei chu phel a, atak lak chhuah phawt a, Chumi hnuah sawr a, amu paih tur.
2. KMS, Sapthei Essence emaw Tartrazine (colour) leh chini chu telh a, uluk taka chawhpawlh tur a ni a, bur thianghlimah boruak lut thei lo a chhin phui tlat tur a ni. Hetiang hmang hian MIFCO leh sumdawng hoten Sapthei tui an siam a, sumdawnnan an hman dan a ni.

Natna ven leh enkawl dan

Stem swelling :



A kungah bawk lian pui pui a rawn awm, a tir lamah chuan pawl awm pawhin a lang lova, a rei hnu chuan a kung chu a ler lam a tangin a thi mai thin. Thla 7-8 annih vela tangin a rawn lang tan tlang pui. Virus leh fungus in kawp in a thlen nia hriat a ni a, natna pudarhtu rannung pawh tel ve a sawi ani.

A ven dan

- Sapthei kung khatah zar tam tak zuah loh tur
- Confidor 0.5 ml tui litre khatah pawlhin kah thin tur

Leaf blight (Damping off):

He natna hian sapthei tiak a bei fo thin ani. Lei seh chinah a lawnga , tui val ang deuh a lo awm thin. A kung pui tlingah a hnah puitling tawhsa atanga tanin a zikah leh a rahah a pakai thin

A ven dan

- A tiak a beih chuan – Ridomil MZ-78, 2gm tui litre khata pawlhin kah tur
- Kui hma a kah in a veng bawk
- A kung puitlinga beih chuan: Ridomil MZ-78 2gm tui litre khata pawlhin kah tur/emaw Dithane M-45 in emaw kah tur
- beihna lai chu a rawng a lo dala, a uk leh thin

Collar rot/ Root rot



Sapthei kung leh a tang chawr tharte a lo duma, a hnah a tlain a kung a vuai thin. A rah a beih chuan a vutbuak angin durh/lawng a in siam a, a tla thin

A ven dan : Ridomil MZ-78, 2gm tui litre khatah pawlhin ni 10 danah kah tur

Hnah val chi hrang hrang (Septoria val leh Alternaria val)



He natna in a beih sapthei te chu a hnah-ah emaw a rah-ah emaw val (spot) a lo awm a, a nasat chuan a darh zau zel a, a chang pheh chuan a hnah chanve lai a khuh thei. Chubakah a rah quality a tha thei lo a ni.

A vendan

- A tang hrisello te leh natnain a beih te chu hlawi a halral vek tur a ni a, hei hian natna pung tur a veng thei.
- Copper oxychloride emaw Mancozeb in May-September thla chhungin kar thum danah kah thin tur a ni a, hei bakah hian ni 10-14 danah October-April thla chhungin kah thin tur a ni.

Rannung ven leh enkawl dan

Fruitfly

A rah tet/sen laiin a zuk thin a, a puitlin hnuah a sak tulhin bawk a insiam thin; a puitlin hmain a tla bawk



Fruit fly in sapthei hnah a tih chhiat dan

A vendan

- A tang ro, eng leh hrisello te chu November thla (Vawi hnih thar zawhah) hlawi vek tur.
- 2. A vennan chuan a chah (bait) siam tur a ni a, 200ml kurtai/chini tui (jaggery soln.)+ 200ml sertui (fruit juice) + 20ml systemic insecticide (confidor/nuvan) chawhpawlh chu burah chhin lovin sapthei huanah a khat tawka dah tur a ni.
- 3. He rannung hian fanghma leh bean te pawh a bei nasa a, amaherawhchu, sapthei hi an duh zawk a, chuvangin heng thlai bulhnaia sapthei kan chin chuan sapthei hi an bei nasa lehzual dawn a ni.
- 4. He rannung hian a par tantirh leh a rahsen lai atanga a beih avangin a tir te atanga ven a ngai a, a nasatna hmunah chuan a chah kan siam bakah khian malathion 1ml/lit of water a kah tel in nasa takin a veng a ni.

Mite :



Mite in sapthei hnah a tih chhiat dan

Te reuh te te mita hmuh tham loh an ni. A kung leh hnah a bawma, a hnah a lo kirin a khawr nasa hle thin baw, sapthei rah a ti puitling loin a kung a ti than thu baw a ni.

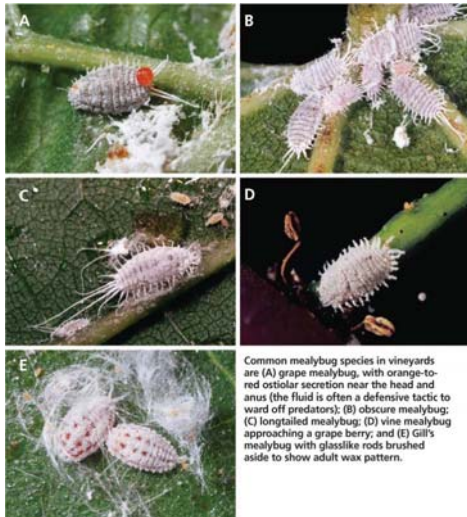
A vendan

Dicofol / O Mite 1.5 ml tui litre khatah pawlin ni 15 danah vawi thum kah tur.

Passion Fruit Mealy Bugs (*Planococcus pacificus*)

Hei hi rannung var, a zikno leh a par, hnah ro leh rah karah te a hlawmin a awm thin a. A chang chuan a rah pawh an bawm thin. Nipui chawhnu lam leh favang lamah an tam duh. A

kung a tuihnang an zuk avangin a than a ti thu a, a hnah a ti tla a, chubakah rah tha thei lo leh a kung thihna hial a thlen thei a ni. He rannung hian thil thlum (honey dew) a pek chhuah reng avangin hmuar natna dangin (sooty mould hrik) a rah leh a hnah te a bawm duh.



Mite in sapthei hnah a tih chhiat dan

A vendan

- A nasat loh chuan Pu vana kawrkilh-te (lady bird beetle), khawibel-te (wasp's parasite) leh rannung dangten an veng tawk hle a.
- A nasat erawh Confidor (imidacloprid) 24 -32 ml tui litre 16 ah pawlh in vawihnih vawithum tal kah tur.

ECONOMIC ANALYSIS OF PASSION FRUIT CULTIVATIO 1 unit = 1hac

Sl.no	Particulars	Quantity	Rate	Amount
I	1st year			
	i) Seedings	1250 nos	1/-	1250.00
	ii)G.I wire	8.0 qtls	7,950/-	63,600.00
	iii)Pit digging and planting	20MD	103/-	2,060.00
	iv)Collection of wooden post	30MD	103/-	3090.00
	v)Erection of trailing(pergola)	30MD	103/-	3,090.00
	vi)Weeding	50MD	103/-	5,150.00
	vii)Transportation	L.S	L.S	2,000.00
	Total of 'I'			8,024.00
	Overhead charge including office expenses survey & investigation, monitoring, evaluation @ Rs.10			8,024.00
	Total of 1st year			88,264.00
II	2nd Year			
	i) Secateur	1 Nos	402/-	402.00
	ii) Sprayer	1 Nos	1,500/-	1,500.00
	iii) Water storage tank	1 Nos	L.S	6,000.00
	iv) PVP pipe	L.S	L.S	4,000.00
	v) P.P measures	L.S	L.S	1,500.00
	vi) Training of pruning	10 M.D	103/-	1,030.00
	vii) Weeding	8 MD	103/-	8,240.00
	viii) Organic manure	5 qtls.	1200/-	6,000.00
	Total of 'II'		29,172.00	
	Overhead charge including office expenses survey and investigation, monitoring, evaluation etc@ Rs 10%			2,917.00
	Total of 2nd year			32,089.00
	G. Total of I + II			120,353.00

ECONOMIC OF PASSION FRUIT CULTIVATION

1. 1ST Year
 - i) Expected yield/ha = 62.5qtls.
 - ii) Return from sale of 62.5qtl @ Rs 1,000 = Rs. 62,500.00

2. 2nd year
 - i) Expected yield/ha = 125qtls
 - ii) Return from sale of 125 qtls. @ Rs 1,000/qtl = Rs. 1,25,000.00.

3. Gross income upto 2nd year = Rs. 1,87,500.00

Income will be stabilized from 3rd year onwards @ Rs. 125 qtls/hac