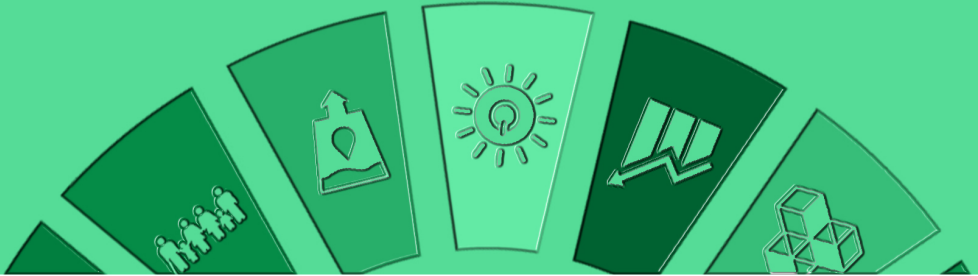




Department of Science & Technology
Ministry of Science & Technology
Government Of India
SEED Science for Equity,
Empowerment & Development



ZORAM MIL TECHNOLOGY



TOMT SOLAR COLD STORAGE
Mizoram, Mizoram
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Department of Science & Technology, Govt. of India
Implementation by: Mizoram Science, Technology & Innovation Council (MISTIC)
Directorate of Science & Technology, Govt. of Mizoram
2018-19



**SCHEDULED TRIBE CELL
MIZORAM SCIENCE, TECHNOLOGY & INNOVATION COUNCIL (MISTIC)
DIRECTORATE OF SCIENCE & TECHNOLOGY**

ZORAM MIL TECHNOLOGY

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THUHMA

Science leh technology lama hmasawwna hi ram hmasawwna tehfung pawimawh ber a ni ti ıla kan sawi sual awm lo e. Khawvela ram changkang leh thunei ber berte hi Science leh Technology zirna leh hman țangkaina lama hmahruaitu, chumi lama sum leh pai pawh sêng tam ber berte an ni.

India ram sorkar pawhin hemi lama hmasawwna tur hian theihtawp a chhuah a. Zirna in țha tak tak a din bakah a taka Science thiamna hman țangkaina tur, Research & Development laboratory eng emaw zat a buatsaih bawk. Chungte chuan anmahni hawi lam țeuhah technology țha tak tak an siam chhuak a, mi tam takin hmun hrang hrang an hmang țangkai mêk a ni.

Hmun thenkhatah hman țangkai a nih mêk laiin, heng technology te hian hmun kilkhawr zawka awmte hnen a la thleng zo tâwk lo niin a lang a. Keini Mizoram ngei pawh hian kan mamawh mila hman țangkai theih tur technology țhate kan la hmelhriat tâwk lo a tih theih awm e. Hemi kawnga inhrilhriatna kawng khat atan hian Scheduled Tribe Cell, MISTIC chuan Virtual Technology Expo a buatsaih a. He expo-ah hian R&D laboratory leh private company thlan bikte hnen ațangin Zoram Mil Technology engemawzat pho chhuah niin, a mamawhtuten an lo zir chian a, an lo hman țangkai theih turin lehkhabu hmanga chhawp chhuah a lo ni ta a ni.

19.04.2022



(Er. H. LALSAWMLIANA)

Chief Scientific Officer & Member Secretary
Mizoram, Science, Technology &
Innovation Council

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1. Solar Cold Storage (Inficold India Pvt. Ltd.)

(Ni zung chakna hmanga thlai leh thei vawn thatna)

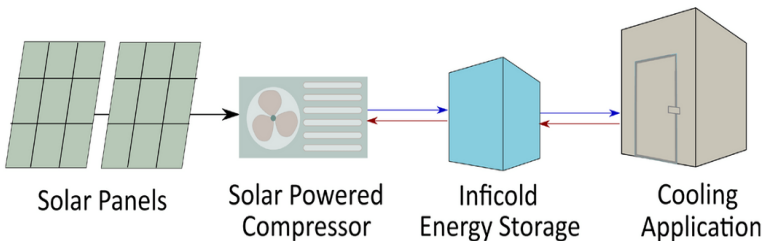


He Cold Storage hian ni zung chakna chu energy yangkai dangah chantirin, tuizema tui dah khawl sâ chu vûrah a chantir a. Chu vûr bâwm aţang chuan khawl hmangin boruak vawt a hip chhuak a, vawn thatna pindan chungah thlai emaw, thei emaw vawn that tur mamawh mil zelin boruak vawt a pe chhuak ta thin a ni. Tih vawh nan vur siam sa a hman avang hian boruak vawt siam turin battery lian pui pui hman a ngai ve lo a, hei hian nasa takin a enkawlina senso a ti hniam a ni.

He khawl that bikna chu amah leh amaha inthawhsak thei (automatic) a nihna hi a ni. Vûr insiam sa kha pindan chung tih vawh nan a hmang a, vûr chu a lo kiam ve zel a. Ni sa a hmuh veleh mihringin a khawl va on chawp ngai loin vur siamtu khawl chu amahin a lo nung a, vûr a siam char char a, tui awm zawng vura a chantir (100% charge) zawh hunah amah bawkin a in *off* leh mai thin.

Chhun zan zawmin a vûr siam sâ chu boruak vawt pek chhuah nan a hmang char char a, vur siam belh a mamawh chuan ni sa a hmuh hunah amahin a in *on* leh mai ðhin a ni.

Ni a sat ðat chuan rei lo teah a khâwl hi a in *charge full* (vur 100% a siam) a, chumi vûr inkhâwl sa hmang chuan ni 3/4 thleng pawh ni zung tel loin hna a thawk thei. Hun rei tak ni sâ hmuh tur a awm loh thulha amah venpui turin a khâwlah hian *electric current* pangngai a vuah tel theih bawk. *Current* hman a ðul hunah pawh mihring va *on/off* a ngai lo a, a khâwl hian a mamawh ang zelin *solar* emaw, *current* pangngai emaw a hmang mai thei a ni. Mihringin a tih ve tur chu a thil dah tur azira *temperature* mamawh zat *set* chauh a ni a, a bâk zawng chu khawl hian amahin a thawk thei a ni.



He khâwl ðat bikna dang leh chu ralkhat aţanga hna a thawh leh thawh loh enfiah (*monitor*) theih a nihna hi a ni. Kan thil dah luh mila *temperature* duh zâwng kan *set* fel tawh chuan, *temperature* te, *humidity* leh *data* ðangkai dang, khâwlin hna a thawh ðat leh ðat loh hriltu turte kha a hmuna va en zel ngai loin, *phone* leh *computer* hmangin

ralkhat aṅanga lo en mai theih a ni a, hei hian a dahtu leh enkawltute a chhâwk zangkhai hle.

Temperature a vawn theih hi 0°C leh 20°C inkar niin, *humidity* hi 85%-95% inkar a ni a, Mizorama kan thar chhuah lar zualte chu hemi *temperature* leh *humidity* huam chungah hian vawn ṭhat theih tura ngaih a ni.

A dawn hlâwk zawng (capacity) hi 5MT aṅanga inṭanin mahni duh leh mamawh dan mil ang zela siam theih a ni. A chungah pindan awm zat tur pawh mamawh dan anga siam theih a ni.

Hetiang khawl hi MISTIC chuan KVK Campus, Khawzawlah hlawhtling takin a lo en chhin tawh a ni.



Solar Cold Storage at KVK, Khawzawl

2. Bulk Milk Cooler (Inficold India Pvt. Ltd.)

He khâwl hna thawh dan hi a chung a *Solar Cold Storage* târlan tak nen hian a inang a. Ni zung chakna hmanga vûr a siam chu bawngnute vawn that nan a hmang ve thung dawn a ni.



A dawn hlawk zawng (capacity) hi 250 litre ațanga ințanin mahni duh dan mil zela siam theih a ni.

Inficold biak pawh theihna:

Mr. Jayant Chandavarkar

Head, Sales Department, Inficold India Pvt. Ltd.

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3. OP-12 Biofertilizer (CSIR-NEIST)

OP-12 biofertilizer hi *rhizobacteria strain* chi khat, *RJ12* hmanga siam, lei tha a ni. Thlai thanlenna atana pawimawh damdawi chi hrang hrang - *ammonia*, *hydrogen cyanide (HCN)*, *siderophore* leh a dangte a siam theih avangin thlai thanlenna puitu atan an hmang thin a ni. He *biofertilizer-a bacteria* awm hian *ammonia* siam chhuakin, thlai to laiah *nitrogen* angin a pe chhuak leh a, he *nitrogen* a pek chhuah hi thlai thanlenna tura puitu pawimawh berte zinga mi a ni. *OP-12 biofertilizer-a bacteria* hman hi mihring tan a hlauhawm loh bakah kan chhehvela thil nungte tan pawh a hlauhawm loh a ni. He *biofertilizer* hi tui tlemna hmunah a tangkai zual em em a, ruahtui tlak loh lai pawhin tha takin thlai a to thei a ni.



OP-12 biofertilizer

4. CVCP Biofertilizer (CSIR-NEIST)

CVCP biofertilizer hi *Plant Growth Promoting Rhizobacteria (PGPR)* chi khat, *Chromobacterium violaceum (MTCC 8071)* hmanga siam, lei ðha a ni. He *biofertilizer* hian thlai ðhanlenna kawngah nasa takin a pui a, lei ðha dang nen hman kawpin a thawk chak lehzuol a ni.



CVCP biofertilizer

5. TP-16 Biofertilizer (CSIR-NEIST)

TP-16 biofertilizer hi *Plant Growth Promoting Rhizobacteria (PGPR) strain* chi khat, *Pseudomonas aeruginosa TP16* hmanga siam, lei ðha a ni. He *biofertilizer* hian lei ðhatna a belhchhah bakah thlai thar chhuah zat a ti pung thei bawk a ni.



TP-16 biofertilizer

6. Organic Fertilizer – SUFAL (CSIR-NEIST)

Organic fertilizer hi damdawi (*chemical*) tel lo, hnim leh thlai aṅanga siam lei ṭha a ni a, kan chhehvela thil nungte tan pawh a hlauhawm loh a ni. Thil nung, hnim leh thlai ṭawihral aṅanga siam a nih avang hian chakna (*nutrients*) a pai tam bik a, thlai a ṭhan chak bakah thar chhuah zat a ti pung bawk a ni. Organic fertilizer hmang a thlai thar chhuah te hi mihring tan a hlauhawm loh a, damdawi hmang a thlai thar chhuah aiin a hrisel zawk bawk. Lei ṭha dang nen khai khin chuan SUFAL hi a ṭha bik hle a ni.



SUFAL

7. High Yielding Variety of Patchouli (CSIR-NEIST)

Patchouli (Pogostemon patchouli Hook) aṅanga hriak sâwr chhuah hi *linalool* leh *linalyl acetate* damdawi siamna ṭha tak a ni a, heng damdawite hi rimtui siamna hmunah an hmang nasa hle a ni. Patchouli hi ram lum, 25-35°C bawr vel leh hmun hnawng ṭha (70 - 75% humidity), kum khata ruahtui 150 aṅanga 325 cm vel tlâkna hmunah a ṭha duh em em a, thlai emaw thing dang te nen pawh chîn kawp theih a nih mai bakah a ṭhang ṭha zawk bawk.



Patchouli

8. High Yielding Variety of Lemongrass (Jor Lab L-8) (CSIR-NEIST)

Lemongrass (Cymbopogon flexuosus) hi di lam chi, sêr rim nam a ni a, hmasâng atâ hriak lâkna pawimawh tak a ni. *Lemongrass* hian damdawi chi khat *citral* a pai a, he *citral* hriak hi thil tih rirtui nan, hmai hnawih leh inchulh rirtui atan, sahbawna telh atan leh rirtui siamna hmunah an hman a ni. *Species* hrang hrang 80 chuang awmin, India ramah chuan 10 atanga 12 vel awm anga chhût a ni. *Lemongrass* hi ram lum leh hnawng, ni sa tamna hmunah a t̄ha duh hle a, kum khata 250 cm vel ruahtui tlakna hmunah a t̄o t̄ha ber a ni. *High yielding variety lemongrass* atang hian hriak 1% lai mai a lâk chhuah theih a, variety pangngai h chuan 0.4 – 0.8% hriak chauh a lâk chhuah theih thung. Chumi awmzia chu *HYV lemongrass* chingtute sum lak luh hi a lêt thawk a ni thei dawn tihna a ni. *Lemongrass* hriak hlutna hi a *citral* pai tam leh pai tam lovah a innghat a, *HYV lemongrass* te hian 78% vel *citral* an pai a, hei hi a *variety* pangngai aiin 22% laiin a tam zawk a ni.



9. High Yielding Variety of Citronella (Jor Lab C-5) (CSIR-NEIST)

Citronella (*Cymbopogon winterianus* Jowitt) hi hriak lakna hnar ðha tak a ni. He hriak hi *perfume, cosmetics, sahbawn, bati* leh *agarbati* leh thil dang tih rimtui nana hman a ni. *Citronella* hi ram lum, 20 - 38°C bawr vel leh hnawng ðha, (70% humidity), ni sa tamna hmunah a ðha duh hle a, kum khata 200 aþanga 300 cm vel ruahtui tlakna hmunah a ðo ðha ber a. Heng bakah hian lei me (balu lei), tui tlin theih lohna hmuhah a ðha bik bawk a ni. Hun rei lote chhunga *citronella* tam zawk thar theihna tura a *variety* siam danglam hi a chingtute tan a hlawkin, sum lak luh a tam phah thei a ni.



Citronella

10. Herbal Mosquito Repellent Ointment and Vaporizer (CSIR-NEIST)

Boruak lum leh uap hian thosi a ti pung duh em em a, hri chi hrang hrang an thehdarh theih avangin fimkhur a ngai hle. He *Herbal Mosquito Repellent Ointment* leh *vaporizer* hi thosi laka invenna atan hnim hring chi hrang hrang atanga siam a ni. He *Ointment* hi taksaa hnawih chi a ni a, taksa lang thei laiah chauh inhnawih tur a ni. *Vaporizer* hi *electric plug* a vuah luh tur a ni a, tuihu a pek chhuah hmangin thosi a ti hlum/hnawt bo thei a ni.



Hnim hring atanga siam thosi hlauh

11. Herbal Mosquito Repellent Incense Sticks (CSIR-NEIST)

Agarbati (incense stick) hi India ramah chuan puithuna thil atan te, in leh a vel tih rimtui nan te hman a nih bakah thosi hlauh atan an hmang thin bawk a ni. Hmun lum leh uap, thosi inthlahpun chakna hmunah phei chuan agarbati chhit hi an uar hle a ni. Ram leilunga awm sa hnim hnah hmanga siam mai theih a ni a, khawl man to tak tak a ngaih loh avangin tu te tan pawh sumdawna awlsam leh sum hmuhna tha tak a ni thei a ni.



Agarbati

12. Anti-arthritis ointment (CSIR-NEIST)

India mipui zaa sawm panga hian ruh lam natna (*arthritis*) an nei niin mi thiam ten an chhut a, chung zinga hriat tlanglawn ber chu *osteoarthritis* leh *rheumatoid arthritis* an ni. Arthritis natna enkawl dan kawng tam tak zinga pakhat chu hnim hring aṅanga damdawi siam chhuah hi a ni. *Herbal Anti-Arthritis* damdawi hian ruh lama harsatna (*arthritis*) neite nasa takin a chhawk thei a ni.



Anti-arthritis damdawi thenkhat

13. Herbal fungi-destruct cream (CSIR-NEIST)

Herbal-fungi-destruct cream hi hnim hnah aţanga siam a ni a; *anti-fungal* leh *anti-bacterial cream* niin vun natna thlen thei hrik (*bacteria* leh *fungi*) inthlah pung zel tur a ven theih avangin vun natna chi hrang hrang - *ringworm*, *candidiasis*, *onchomycosis* leh a dangte tan damdawi ţha tak a ni. He *cream* hi vun na laiah hnawih tur a ni a, hei hian hri inkai darh zel tur a ven bakah rei lo te chungin hri a ti hlum thei a ni. *Fungi* avanga vun lama harsatna hrang hrang nei mi 1600 chuangin he *fungi-destruct cream* hi an dampui tawh a ni.



Herbal fungi-destruct cream

14. Liquid Deodorant and Cleaner (CSIR-NEIST)

Thil rimchhia ti botu (*deodorant*) leh thil tih faina (*cleaner*) hi chhuat, *tile, glass, ceramic* leh a dangte tih faianan leh tih rimtui nan an hman thin bakah thosi hlauh a nitel bawk a ni. He *deodorant* leh *cleaner* hi mihringte tan leh kan chhehvela thil nung dangte tan pawh a hlauhawm loh a ni. Damdawi in, mi mal in, *clinic, hotel* leh *restaurant*-ah te *liquid deodorant* leh *cleaner* hi an hmang nasa hle a ni. Khawl lian leh man to tak tak hman a ngaih loh avangin *medium* leh *small scale industry* te tan sum lak luhna tha tak a ni thei a ni.



Liquid deodorant leh cleaner

CSIR-NEIST biak pawh theihna:

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15. Bio-formulation for bamboo and wood care (CSIR-NEIST)

Thing leh mau te hi rannung leh hmuar (*fungi*) vangin a chhe duh em em a. Chu chuan a siamtute leh a hmgangtuteah harsatna a thlen theih avangin he *Bamboo and Wood care formulation* hian thing leh mau hmuar chhe tur a veng a, a ti tlovin a ti chak thei bawk a ni. He damdawi hian kan chhehvel leilung leh boruak a khawih danglam loh va, mihring leh thilnung dangte tan a hlauhawm loh bawk.



Bamboo leh wood care formulation

16. Low chilling Apples (CSIR-IHBT)

Apple hi hmun vawtah chin a ni tlangpui a, hmun lumah hi chuan an rah ṭha thei meuh loa ngaih a ni. Tin, a pâr hunlai hian boruak vawt a mamawh nasa bik em em a; *apple* kung hian par turin 7°C a vawt boruak chu darkar 500 aṭanga 1000 chhung tal a mamawh a; nimahsela he *low chilling apple variety* hi chu darkar 200 chhungin boruak 7°C aia hniama par thei tura duan a ni. Tin, he *apple* chi ṭha chi hi hmun lum deuhah pawh chin theih tura duan a ni bawk.



Low chilling apple

17. STEVIA – A natural zero calorie sweetener (CSIR-IHBT)

Stevia (Stevia rebaudiana) hi thil tih thlumna *natural sweetener* ða tak a ni a, a hnaha damdawi chi khat awm, *steviol glycosides* hi chini aiin a let 300 velin a thlum zawk a, mihring tan pawh a hrisek zawk bawk a ni. *Stevia* hnah aþang hian *steviol glycosides* an la chhuak a, chu chu ti dip/phut lehin tuiñlah te an siam chhawng leh ðhin a; chini pangngai aia a ðat zawk avangin zunthlum nei leh taksa rihna ti hniam duh ten an hmang nasa hle a ni. *Stevia* thlai hian hmun lum, 31°C vel bawr a mamawh a, kum khata ruahtui 140 cm vel tal a tlakna hmunah a ðo ða ber a ni.



Stevia powder



Stevia liquid drop

18. Monk fruit (CSIR-IHBT)

The monk fruit (Siraitia grosvenorii) hi amaha thlumna pai, *calorie* hniam tak nei a ni. *Calorie* a pai tam loh avang hian rihna tihniam duh tan pawh a ðha em em a ni. *Monk fruit* thlumna petu hi damdawi chi khat, *triterpene glycosides*, *mogrosides* an tih bawk a ni a, chini aiin a let 300 velin a thlum zawk a ni. Monk fruit hian ðha tak a ðhang turin khaw vawt lutuk lo, 16 - 20°C vel bawr leh kum khata ruahtui 150 aþanga 200 cm vel tlakna hmun a mamawh a, heng hmunah te hian a ðo ðha ber bawk.



Monk fruit (fresh leh dry)

19. Agrotechnology for Heeng (CSIR-IHBT)

Heeng (Ferula assa-foetida) hi hnim chi khat, hmuihmer dip (condiment) atana hman ðhin a ni. Hei bakah hian a hnâi (resin) hi damdawi atan leh rimtui siam nan te an hmang bawh. India ramah chuan *Heeng* hnâi (*resin*) hi eitur siamna bawhlo ah te, *ayurvedic* damdawi siam nan te, *asthma* damdawi atan te an hmang nasa hle.



Heeng

20. Roasted Barley Grain Based Beverages (CSIR-IHBT)

Barley fang, chhuan hmui hnua her dip leh hi *coffee* leh thingpui aiah hman a ni fo ðhin a. *Barley* dipah hian *caffeine* a awm loh avangin a kha (bitter) ve lo va, damdawi dang eng mah pawlh a nih loh avangin a hrisel em em bawh a ni.



Barley phut

21. Biofertilizer – PGPR1 (CSIR-IHBT)

PGPR1 biofertilizer hi Himalaya tlanga awm *bacteria* chi hnih, *Pseudomonas trivialis* leh *Arthrobacter psychrochitiniphilus* hmanga siam lei tha a ni a, thlai thanna atana pawimawh – *Auxin* leh *Siderophore* te siam chhuak turin thlai a pui a ni. Biofertilizer te hi hrik nung (*microbes*) pai an nih avangin thlai tana chaw tha (*nutrients*) an siamchhuak zung zung a, chu chuan thlai thanna kawngah nasa takin a pui thei a ni. Damdawi (*chemical*) tello a nih avangin biofertilizer hmanga thlai thar chhuah te hi mihring tan leh kan chhehvela thil nungte tan a hlauhawm loh bakah a hrisel zawk a ni.



Biofertilizer-PGPR1

22. Hydroponic and Aeroponics Technology for Production of Spice Crop (CSIR-IHBT)

Hydroponic chu lei hmang lova thlai chin dan hi a ni a, lei aiah hian thil tuiril, thlai tana chaw ðha pai tam leh chakna pe thei an hmang tlangpui thin. *Aeroponics system*-ah ve thung chuan thlai zung kha tuirila dah lovin boruakah a awm a, a zung chu chaw ðhain an phuh (spray) zawk thin a ni. *Hydroponic* leh *aeroponic system* hmanga thlai chin te hi room chhung 22°C a lum leh 65% a hnawngah vawn an ni. Heng technology pahnih hmanga thlai chinte hi natna chi hrang hrang lakah an him a, kum tluanin an thar chhuak thei bawk. Hei bakah hian leia thlai chin aiin a let thumin *biomass* a siam chhuak hnem zawk a, a *quality* pawh a ðha zawk a ni.



Hydroponic system hmanga thlai chin ðhenkhatte

23. Vitamin D2 enriched Shiitake mushroom (CSIR-IHBT)

Shiitake (Lentinula edodes) hi pâ ei chi a ni a, damdawi atan pawh a ÷ha em em a ni. *Vitamin D* hi ruh hriselna leh kan taksa raldona ti chaktu atan kan mamawh ÷hin a, *Shiitake* a *vitamin D2* dah belh hian ei tur ÷hatna a belhchhah a, damlo te tan pawh damdawi ÷ha tak a ni thei a ni.



Shiitake mushroom

24. Protein & Fiber Enriched Foods (CSIR-IHBT)

Kan ei leh in aţanga chakna kan hmuh tam theihna turin chaw ţha kan tih mai, *protein* leh *fiber* te hi ei leh inah dah belh (fortified) an ni fo ţhin. Hetianga chaw ţha kan dah belh hian ei leh ina chakna awm a belhchhah bakah mihring tana hrisel lo thil thlum a pai tlem bik a ni. Mi malin kan ni tin *protein* leh *fibre* mamawh zat zaa sawm hnih lai a puhruk thei a, damdawi eng chi mah pawlh a nih loh avangin a hrisel bik bawk a ni.



Protein leh fiber telna chhangphut leh snack bars

25. Iron And Zinc Enriched Spirulina Based Food Products (CSIR-IHBT)

Spirulina hi p̄at ek, *blue green algae (cyanobacteria)* aṅanga siam a ni a, chaw ṅha tinreng; *protein, vitamin, provitamin A (β carotene), iron leh zinc* a awm a ni. Heng bakah hian thaṅ ṅha *omega 6* leh *antioxidants* a awm bawk. *Spirulina gram 30* vel hian mi malin a ni tin *iron leh zinc* a mamawh zat zaa sawm hnih lai a pe thei. Damdawi eng chi mah pawlh a ni lo va, thla 6 chung a dah ṅhat theih bawk. *Spirulina* hi a dip, in tura pawlh chi leh ei nghal mai theih tea siam a ni.



Spirulina phut



Spirulina snack bar

26. Multigrain High Protein Mix (CSIR-IHBT)

Protein mix hi *millet*s, *cereals* leh *pulses* dip hmanga siam a ni. Tui lum, bawngnhnute leh thei tuiah pawlh mai theih a ni. Chhangthawp siamna atana hman chhangphutah pawh an telh bawk ñhin. *Protein Mix* gram 50 vel hian thahrui/chakna (*energy*) 200-250 Kcal lai a pe thei. Mi malin ni tin *protein* a mamawh zat zaa sawm hnih *protein mix* hian a pe thei a, *calcium* leh *iron* mamawh zat zaa sawm leh *fiber* mamawh zat zaa sawm panga a pe thei bawk. Damdawi leh bawlhlo dang eng mah pawlh a nih loh avangin a hrisel zual a, thla sawm vel a dah ñhat theih bawk a ni.



Protein mix

27. Gluten-Free Foods from Buckwheat (CSIR-IHBT)

Gluten chu *protein* chi khat *wheat* leh *barley*-a awm a ni a, chhangphut hmeha a ti bantu ber a ni. India mipui zingah mi maktaduai 60-80 vel hi *gluten* ei thei lo an awm a ni. *Buckwheat* hi thlai chi, *gluten* awm lohna niin chaw tha tam tak, *protein*, *rutin*, *polysaccharides*, *dietary fibre*, *vitamin* leh *mineral* a pai tel a ni. Hei vang hian *buckwheat* hmanga siam ei tur chi hrang hrang hi *gluten* ei thei lote tan chaw tha tak a ni. *Buckwheat* hi her dipin chhangphut siam nan leh *chow* siam nan a hman theih bakah ei nghal theih tur chi *snack bar* siam nan a hman theih bawk a ni.



Buckwheat atanga siam snack bar leh chow

28. Bamboo Candy (CSIR-IHBT)

Mautuai chhum hmin, chini tuia chiaha, pho ro leh hi *Bamboo Candy* an vuah a ni. Mautuai (*Bamboo shoot*) ah hian *mineral* leh *fibre* a tamin, thisen a thau chhe awm zat a ti hniam thei bawk a ni. Mautuai aṅanga siam chithlum hian thau a pai tlem a, *fibre* leh *mineral* chi hrang hrang (*calcium*, *potassium*, *phosphorous*) a pai tam a, damdawi dang pawlh loh a nih bawk avangin chi thlum dang aiin a hrisel zawk a ni.



Mautuai chi thlum

29. Crispy fruit & vegetable technology for reducing post-harvest losses (CSIR-IHBT)

Kan thei leh thlai thar chhuah zaa sawmhnih panga hi sawngbawlna leh dah thatna hmun a awm loh avangin a chhe thin nia chhut a ni a, heng thlai chhe mai tur venna atana thei leh thlai tih ro/dah ro hi a pawimawh hle. Thei leh thlaia chaw tha awm te, a rawng, a rim leh a tui dan te vawng tha chung a tih ro hian thlai thawih ral mai mai tur a ti tlem thei a ni.



Thei leh thlai dah ro thenkhat

30. Value Added Tea Products (CSIR-IHBT)

Thingpui hnah hian *polyphenols* zaa sawmhnih lai a pai a, chung zinga zaa sawmriat vel chu damdawi chi khat *catechins* an ni a; *catechins* hi *antioxidant* ðha tak a ni tel bawk a ni. Thingpui hnah hi a hrisel em avangin ei leh in chi hrang hrang - zu, damdawi, *vinegar* leh thil dang siam nan hman ðhin a ni.



Thingpui hnah atanga siam damdawi, vinegar leh wine

31. Compost booster – Microbial consortium (CSIR-IHBT)

Kan bawhlawh, ṭawih thei thilte (*organic wastes*) sawngbawl a, lei ṭhaa chantir zung zung hi thil pawimawh tak a ni a. Tlang ramah hian phai ram aia boruak a vawh zawk avangin thil a ṭawih har bik hle a. Tin, kan bawhlawhte a han ṭawih a, lei ṭhaa a han chan ve hnu pawh hian phai ram lei ṭhate *quality-ah* a tluk pha lo ṭhin a ni. Chutiang a nih avang chuan thil a lo ṭawih ral zung zung theih nana puitu leh leiṭha *quality* ṭha zawk siam chhuak thei *Compost booster* hi thil ṭangkai em em a ni a. He *Compost booster*-a awm hrik (*bacteria*) te hian thlai hnah chhe tawh leh lak tlak tawh lo te chu ti ṭawihin lei ṭhaah an chantir zung zung thei a, a rim chhe lutuk turte pawh a veng tel thei bawk a ni.



Compost booster

32. Herbal Incense Cones (CSIR-IHBT)

Agarbati hal hian mei khu leh *gas* chi hrang hrang a pe chhuak a, he mei khu ah hian *cancer* thlen theitu damdawi chi hrang hrang *polycyclic aromatic hydrocarbons*, *carbonyls* leh *benzene* te a awm bakah hengte hian thawkna lama harsatna an thlen thei bawk a ni. Hei vang hian thlai hring aṅanga siam, mei khu hlauhawm pe chhuak lo rimmtui hal chi (*incense*) hman hi a pawimawh hle a ni.



Hnim hnah aṅanga siam agarbati cone

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33. Bamboo Composite Material – AMPRI-Wood (CSIR-AMPRI)

Mau hi hmanraw ṭha tak, kan thing hman m êk thlak theitu a ni. Khawvel pumah India ram hi mau thar tam ber dawttu kan ni a, hetiang a ni chung hian kan hmang uar lovin, kan sawngbawl tam lo hle. *Ampriwood* hi bungraw chi hrang hrang siamna atana hman theih tura duan a ni a, chung zinga langsar zualte chu in emaw huan emaw hungna (*fence*), bang, in sakna ban (*beam*), *ceiling*, in chhung bungrua (*furniture*) leh a dangte an ni.



Bamboo composite hmanna thenkhat

34. Bamboo Timber (CSIR-AMPRI)

Mau hi *timber (thingzai chi khat)*-a siam tur hian sawngbawl dan *step* hrang tam tak a awm a, mau chingtu ten an mau thar chhuahte an phel sin a, a chang bawk an paih a, a chhiat lohna turin *chemical treatment* an pek hnuah an pho ro leh a, *industry*-ah sawngbawl leh turin an pe ðhin a ni. *Industry*-ah hian *resin* hmangin an *coat* a, kan mamawh dan tur a zirin a pianhmang siam danglamin an chulmâm leh ðhin a ni.



Bamboo timber

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