



# PACIFIC COMMUNITY

## MANGO PRUT PLAIS



Piksa 1: Bikpela mama mango prut plais (*Bactrocera frauenfeldi*).



Mango prut plais (*Bactrocera frauenfeldi*) (Diptera: Tephritidae) em i wanpela plais nogut wei i save bagarapim ol pruts wantim bikpela mit. Dispela plais i stap long Papua New Guinea (PNG), Solomon Islands, Palau, Federated States of Micronesia (FSM), Marshall Islands, Nauru, Gilbert Islands bilong Kiribati na long northern Queensland long 1974. Em i wanpela popula prut plais long wanem hap yu can panim em. Em i ken stap tu long ol peles stap longwai namel long solwara. Long sampela ailan olsem FSM, em i stap long bikpela namba.

#### DESCRIPTION AND LIFE CYCLE

The adOI mama plais (piksa 1) i save pusim as bilong ol igo insait long sikin bilong ol pruts na putim kiau long liklik grup insait long sikin (piksa 2). Wanpela mama mango prut plais ken putim 25 kiau long wanpela dai. Kala bilong kiau em i krem-wait na saip bilong em i olsem liklik suga grain. Longpela bilong em i 1 mm (piksa 2). Taim mama plais i sutim prut



Piksa 2: Mama mango prut plais i putim kiau na ol kiau bilong em.

wantaim as bilong em, ol gem stap antap long sikin bilong prut nau go insait long prut. Dispela gem i makim prut long sting na dispela sting prut i givim gutpela kaikai long ol yangpela binatang wei i bin kamap long kiau bilong mango prut plais.

Bihain long tupela dai, kiau i save buruk na givim baibi binatang. Kala bilong dispela binatang em i krem-wait (piksa 3) na save kaikai ol mit bilong ol prut wei i stat long sting (piksa 4). Dispela binatang i save igat tripela steps long gro na i save lusim sikin bilong em tupela time. Em i save takim 10\_ dai long kamap bikpela tru na longpela bilong em i 10

mm na pat bilong em i 2 mm. Taim em ikisim dispela sais, dispela binatang i save lusim prut na pundaun igo down long graun na digim em yet igo insait long graun o rabis na sanisim em yet igo long hadpela braunpela kes. Dispela kes em wei bai dispela binatang bai istap na kamap olsem plais (piksa 5).

Bihain long 11-pela dais, dispela hadpela kes bai bruk na plais bai kam antap long graun o rabis wei em bin stap ananit long em.

Sais bilong bikpela mango prut plais (piksa 1) em i olsem ol haus plais na planti hap bilong bodi bilong em i bilak. Em i narakain long ol narapela prut plais bikos em igat dakpela mark long wing: pale naro mark i raun antap long arere bilong wing (ol makim "a" long piksa 1) na tu dakpela mak i krosim wing bilong em ("b"). Noken paulim dispela plais wantaim ol narapela wankain plais olsem *B. caledoniensis* (New Caledonia), *B. trilineola* (Vanuatu) na *B. parafrasfeldi* (Northern Territory in Australia). Namel long 7 na 10 dais bihain



Piksa 3: Yangpela binatang i kamap insait long Surinam cherry.



Piksa 4: Hap bilong guava wei ol yangpela binatang bilong mango prut plais i bin bagarapim.



Piksa 5: Ol mango prut plais taim oli stap insait long hadpela braunpela kes.

plais i bruk long kiau na kamautsait, ol meri plais i save kuap wantaim ol man plais na ol bai putum kiau bihain long 2 o 3 wiks time. Long ol kiau long kamap gutpela, mama plais mas kaikai ol kaikai igat protein olsem ol gem (bacteria) stap antap long lip o prut bilong dispela mama diwai. fruit surfaces in the host tree.

### HOSTS AND DAMAGE

Insait long FSM mango prut plais oli ken bagarapim olgeta guava (31-91% bagarapim) na ol ken bagarapim ol narapela ol prut olsem tropical almonds (69%), Surinam cherry (61%), bata (avocado) (57%), aila (Polynesian chesnuts) (56%), laulau (*Syzygium* apples) (38-51%), kapiak (breadfruits) (37%), sapsap (soursops) (28%), tangerines (20%), faiv kona (*Averrhoa carambola*) (18%), mango (8%) na oranges (4%). Long PNG em i save bagarapim cashew apples, mau banana, mau buai na okari nuts.

### CULTURAL CONTROL

Prut plais olisave stap insait long ol prut i pundown long graun o i mau tumas o i bagarap. Dispela ol nogut prut oli mas kukim long paia, givim long pik long kaikai o putim insait long plastik bag, taitim na larim istap long wanpela wik. Yu ken planim long graun na karamapim wantaim planti graun. Peles unnamit long prut diwai imas stap klin olgeta taim long traime long stopim ol mango prut plais long bagarapim ol prut. Sapos ol kollektivim ol prut taim oli yangpela yet ol prut plais bai ino stap long sampela.

### BIOLOGICAL CONTROL

PNG na Solomon Islands igat ol liklik bi olsave kaikai dispela ol yangpela binatang wei bin kamap long kiau bilong mango prut plais. Dispela ol liklik bi ol inosave kaikaim olgeta dispela yangpela binatang bilong mango prut plais. Tasol olsave kontrolim namba bilong ol long noken go antap tumas. Olsem na yumi olgeta mas lukautim ol liklik bi na usim ol fil kontrol wai wei isave behainim prinsipale bilong Integrated "Pest Management".

### PROTEIN BAIT SPRAYING

"Protein bait spraying" em i wanpela gutpela wai bilong kontrolim ol prut plais. Yu ken kamapim dispela "protein bait spraying" taim yu tanim protein na insektisait wantaim wara na spreim long sampela lip long wanpela diwai. Ol mama prut plais isave painim protein long kaikai na karim gutpela kiau, olsem na protein insait long marasim bai pulim ol ikam na insektisait bai kilim ol. Wanpela kain protein em oli save kolim "Mauri's Pinnacle Protein Insect Lure (MPPIL)" wei oli wokim long Australia. "Protein bait spraying" em ino save bagarapim envarament bikos em isave kilim prut plais tasol na tu ol i save usim liklik insektisait tasol. Ol isave spreim sampela lip tasol na ol ino save spreim ol prut. Wai bilong tanim protein na insektisait long kamapim "protein bait spraying" em olsem:

kapsaitim 50 ml bilong MPPIL na 4 ml bilong Malathion 50% Emulsifiable concentrate na pulmapim kamantap long 1 lita mark wantaim wara

Taim bilong spreim diwai, usim 50-100 ml na spreim ananit bilong ol lip na eria bilong spreim mas 1m<sup>2</sup> long wanpela diwai. Spreim tu ol narapela diwai wei i sanap arere na tu ol prut diwai wei ino karim pikinini. Spreim ol diwai bihain long olgeta 7-pela dai na sapos long ol peles bilong rain, spreim bihain long olgeta 5-pela dai.

### COVER SPRAYS

Ol insektisait olsem dimethoate (Rogor) na fenthion (Lebaycid) em ol isave usim long



Piksa 6: Trep wantaim lure isave ketsim ol prut plais.

olgeta hap olsem "cover spray" long kilim ol prut plais. Dispela wai em ino gutpela long usim long ol Pacific ailan kantri bikos envarament em ino gutpela. Kava spre isave kilim ol gutpela binatang na lusim ol pipia insait ol prut.

#### POST HARVEST DISINFESTATION

wanpela bikpela astingting em bilong kilim ol kiau na binatang bilong ol prut plais wei i stap insait long ol prut. Dispela bai makim ol narapela kantri long baim ol prut. "Fumigation" em i wanpela gutpela wai, tasol ol man ino yusim nau bikos tupela gas ol save yusim em ethylene dibromide wei i save kosim kensa na methyl bromide wei i save brukim down dispela ozone laia bilong atospia. "Heat treatment" em i narapela wai bilong kilim ol kiau na babi prut plais. Long hia ol prut i stap insait long hat aia insait long strongpela box o ol prut istap insait long hat wara. Long Fiji, Tonga na Cook Islands igat "heat treatment" hapeles istap na nau ol isave salim ol nupela pruts long New Zealand. Tasol long ol mango prut plais "heat treatment" em ino wok yet bikos long wanem dispela temprisa wei bai ol kiau na liklik binatang kamap long dispela kiau bai dai em ol man ino save yet.

#### QUARANTINE SURVEILLANCE

Long luk save na givim woning long ol man long kam bilong nupela prut plais wei i save

bagarapim ol pruts, ol man nau i yusim nupela Steiner trep (piksa 6) long ketsim dispela plais. Narapela wok bilong dispela trep tu em bilong usim long sevcim ol plais wei i save stap long dispela hap na tu long moniterim namba bitong plais long wanpela sisen. Koton wol stap insait long trap igat kemikel bilong pulim ol man plais ikam long trap na insektisait long kilim ol plais. Kemikel ol kolim Cue lure i save pulim mango prut plais, melon plais na Queensland prut plais ikam long trap. Methyl eugenol save pulim ol narapela plais wantaim ol Oriental prut plais na papaya prut plais. Katon insait long trep isave holim bikpela amaunt bilong lure (4-pela pat) na liklik amaunt bilong 50% Malathion (1-pela pat). Noken mixim dispela tupela kemikel long wanpela trap. Sekim ol trep bihin long tupela wik na senisim ol kemikel behin long tripela mon. Long luk save long nupela rabis prut plais, ol i save putim dispela tupela trap long waf (bridge) taun, rabis dam na ol hap bilong ol turis.

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