Host Plant Records for Fruit Flies (Diptera: Tephritidae: Dacini) in the Pacific Islands: 2. Infestation Statistics on Economic Hosts

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Abstract. Detailed host records are listed for 39 species of *Bactrocera* and 2 species of *Dacus* fruit flies, infesting 98 species of commercial and edible fruits in the Pacific Island Countries and Territories, based on sampling and incubating in laboratory almost 13,000 field collected samples, or over 380,000 fruits. For each host-fly-country association, quantitative data are presented on the weight and number of fruits collected, the proportion of infested samples, the number of adult flies emerged per kg of fruits and, whenever available, the percentage of individual fruits infested. All the published records of each fly-host-country association are cited and erroneous or dubious published records are rectified or commented. Laboratory forced infestation data are also cited and reviewed.

The Dacini is a very large group of tephritid fruit flies, with over 800 described species, chiefly in the genera *Bactrocera* and *Dacus*. Of these, at least 80 are known to infest commercial and/or edible host fruits and fleshy vegetables, causing direct damage to fruit and frequently resulting in trade restrictions. Reliable host plant lists for the Dacini have been published, covering South East Asia (Allwood et al. 1999), Australia (Hancock et al. 2000), and the Pacific Islands (Leblanc et al. 2012). These lists were based on extensive host fruit surveys covering well over 130,000 field collected samples, but did not provide quantitative data indicative of the severity of infestations.

The present paper, a follow-up of the recently published host list in the Pacific Islands (Leblanc et al. 2012), provides quantitative details on levels of infestation for 98 species of commercial and edible fruits, hosts to 41 species of fruit flies (Table 1). For each host-fly-country association, we include details on the weight and number of fruits collected, the proportion of infested samples (as infested / total collected), and the number of adult flies emerged per kg of fruits, based on all the collected samples and on the samples from which flies have emerged. Counts are based on number of adult flies emerged in all cases except in the Federated States of Micronesia, where they are based on the number of pupae, all yielding *Bactrocera frauenfeldi*, recovered from each sample. Emergences per kg (all samples) are listed as "unknown" for all Cook Islands records, because information on the total number of samples collected for each host was not available. We also include data on the percentage of individual fruits infested, based on incubating individual fruits in separate containers. All the quantitative data presented in the tables were generated by host fruit surveys initiated under

the Regional Fruit Fly Projects in the Pacific (RFFP) (Allwood 2000b, Lidner and McLeod 2008). All these records previously appeared in Leblanc et al. (2012), and we list all the other literature records of each fly-host-country association under the citations headings. We also rectify the erroneous or dubious records published in past literature.

Materials and Methods

Field survey and fruit holding methods were described previously (Leblanc et al. 2012), and the results presented here are expanded from that same publication, except as follows. For Tonga and Papua New Guinea, the number of collected samples, therefore proportion of positive samples, has been corrected to include only samples from the islands where each fruit fly species is present, rather than the entire country. The French Polynesia data is divided into the period when *B. dorsalis* was contained during eradication efforts (1998–2001), listed as FrPo[1], and past the eradication effort, when *B. dorsalis* became firmly established (2002-2009), listed as FrPo[2], to the point of suppressing populations of *B. tryoni* and *B. kirki* through competition (Vargas et al. 2007, 2012). Data for *B. dorsalis* on Nauru are based on host fruit surveys carried out in October and November 1998, prior to the initiation of the eradication program (Allwood et al. 2002). Finally, the breadfruit-infesting species previously referred to as *B. curvifera* was recently renamed *B. speculifera*, a previously described species resurrected from synonymy (Drew and Romig 2013).

Data from laboratory host status tests are also included, based on the cited published literature, or based on Heimoana et al. (1997), wherever no reference is cited. Heimoana et al. (1997) reported results of host status tests, following the New Zealand MAFF protocol 155.02.02: Specifications for Determination of Host Status as a Treatment. In these tests, punctured fruits at the stages of ripeness targeted for export were exposed to gravid female flies in laboratory cage tests. If any development occurred, the tests were repeated using intact fruits to confirm the host status. Results from these tests are presented here, because fruits that are non-hosts in laboratory tests are potential candidates for export without postharvest treatments. However, a positive host under these confined artificial conditions, even on intact fruits, does not necessarily mean that the tested fruit is a host under natural field conditions.

Results and Discussion

Forty-one species of dacine fruit flies are associated with either cultivated or edible fruits (33 species) or cucurbits (8 species). These species may be ranked in pest severity according to host range (Table 1), levels of infestation (Figs 1–4) and invasiveness.

Topping the list is oriental fruit fly (*B. dorsalis*) (Fig. 1a), a major polyphagous pest reared from 116 host species in southeast Asia (Allwood et al. 2013), that has invaded the Mariana Islands (1935, eradicated since 1965), Hawaii (1946), Nauru (1992, eradicated in 1999), and French Polynesia (1996), where it quickly became the dominant pest, outcompeting *B. tryoni* and *B. kirki* (Vargas et al. 2007, 2012). Asian papaya fruit fly (*B. papayae*), an equally destructive pest (193 hosts in Allwood et al. 1999) likely conspecific with *B. dorsalis*, was detected in Papua New Guinea in 1993 and Palau in 1996, where its host records are underestimated due to incomplete host fruit surveys. Second on the list is Queensland fruit fly (*B. tryoni*) (Fig. 1b), the dominant fruit pest in Australia, reared from 234 host species (Hancock et al. 2000). It invaded New Caledonia in 1969, where it became

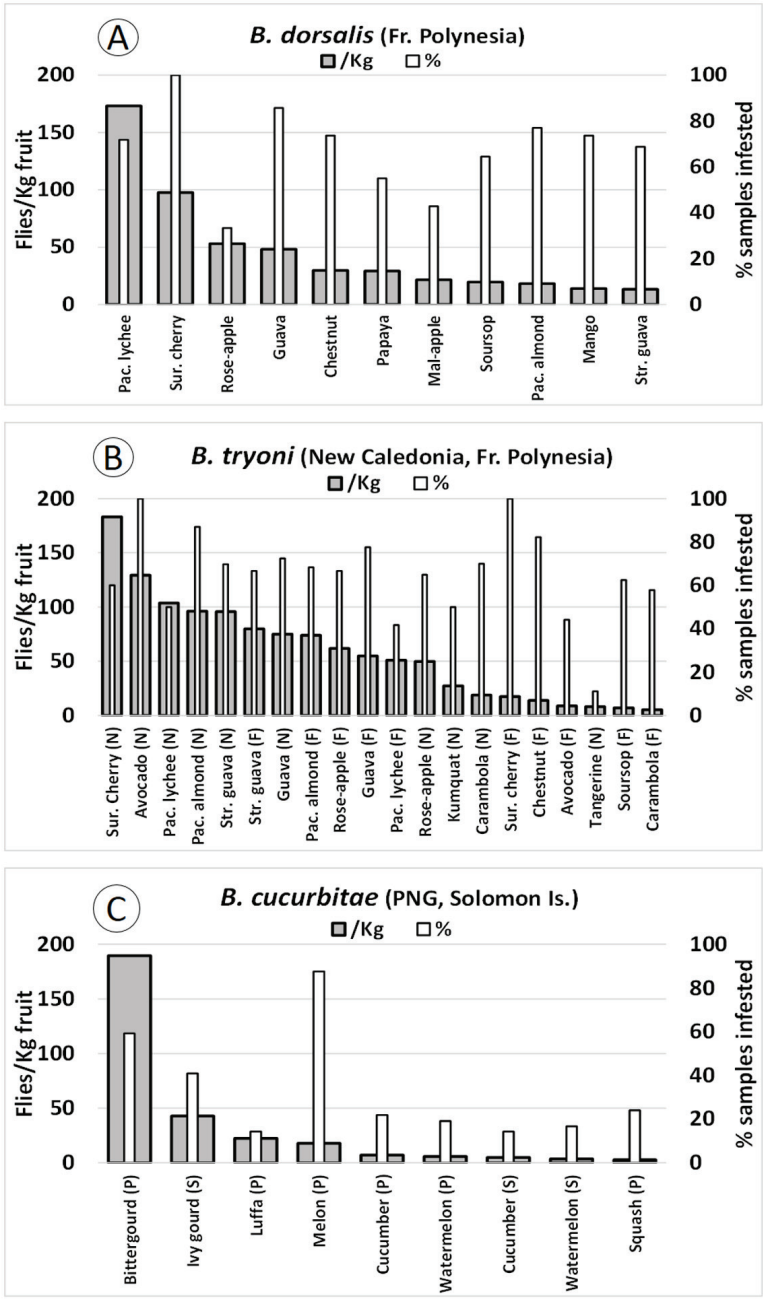

Figure 1 A–C. Mean number of flies emerged per kg fruit and percent samples infested for the most infested hosts for oriental fruit fly (*Bactrocera dorsalis*) (A), Queensland fruit fly (*B. tryoni*) (B), and melon fly (*B. cucurbitae*) (C).

Table 1. Summary information on the species of *Bactrocera* and *Dacus* associated with commercial and edible host fruits in the Pacific Islands region.

Species	Lure	Host families	Host genera	Host species	Commercial/ edible hosts	Distribution
B. (*Bactrocera*) *atramentata* (Hering)	CL	1	1	1	1	Papua New Guinea (Bismark)
B. (*Bactrocera*) *bryoniae* (Tryon)	CL	4	4	4	4	Australia, Papua New Guinea (Mainland, Bismark)
B. (*Bactrocera*) *curvipennis* (Froggatt)	CL	20	30	41	33	New Caledonia
B. (*Bactrocera*) *distincta* (Malloch)	CL	3	7	8	5	American Samoa, Fiji, Futuna, Samoa, Tonga
B. (*Bactrocera*) *dorsalis* (Hendel)	ME	20	29	40	35	Tropical Asia, French Polynesia, Hawaii. Eradicated from Guam, CNMI and Nauru
B. (*Bactrocera*) *facialis* (Coquillett)	CL	30	49	64	30	Tonga (southern group)
B. (*Bactrocera*) *frauenfeldi* (Schiner)	CL	31	47	73	43	Australia, Micronesia (FSM), Indonesia (West Papua), Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands
B. (*Bactrocera*) *kirki* (Froggatt)	CL	19	28	42	31	American Samoa, French Polynesia (except Marquesas), Fiji (Rotuma only), Niue, Samoa, Tonga, Wallis and Futuna
B. (*Bactrocera*) *lineata* (Perkins)	CL	3	3	3	1	Indonesia (West Papua), Papua New Guinea (Mainland)
B. (*Bactrocera*) *melanotus* (Coquillett)	CL	18	23	31	25	Cook Islands
B. (*Bactrocera*) *moluccensis* (Perkins)	CL	1	1	1	1	Australia (Torres St Islands), Indonesia, Papua New Guinea (widespread), Solomon Islands
B. (*Bactrocera*) *mucronis* (Drew)	CL	5	6	6	3	New Caledonia
B. (*Bactrocera*) *musae* (Tryon)	ME	2	2	2	2	Australia, Papua New Guinea (Mainland, East New Britain)
B. (*Bactrocera*) *neohumeralis* (Hardy)	CL	1	1	1	1	Australia, Papua New Guinea (Mainland)
B. (*Bactrocera*) *obliqua* (Malloch)	None	3	4	5	3	Papua New Guinea (Bismarck Archipelago, Bougainville)
B. (*Bactrocera*) *ochrosiae* (Malloch)	CL	4	4	5	2	Guam, CNMI, Hawaii (Molokai)
B. (*Bactrocera*) *papayae* Drew & Hancock	ME	9	10	13	11	Tropical Asia, Papua New Guinea (Mainland), Palau
B. (*Bactrocera*) *paramusae* Drew	CL	1	2	2	1	Indonesia (West Papua), Papua New Guinea (Mainland)
B. (*Bactrocera*) *passiflorae* (Froggatt)	CL	28	36	49	34	Fiji, Niue, Wallis and Futuna
B. (*Bactrocera*) *passiflorae* (sp.nr.) [1]	CL	17	18	20	13	Fiji, Tokelau, Tonga (Niuas Group), Tuvalu
B. (*Bactrocera*) *perfusca* (Aubertin)	CL	4	4	4	3	French Polynesia (Marquesas)

B. (*Bactrocera*) *psidii* (Froggatt)	CL	16	22	31	25	New Caledonia
B. (*Bactrocera*) *quadrisetosa* (Bezzi)	None	1	1	1	1	Solomon Is, Vanuatu
B. (*Bactrocera*) *samoae* Drew	None	9	11	11	1	Samoa
B. (*Bactrocera*) *simulata* (Malloch)	CL	1	1	1	1	Papua New Guinea (Bougainville), Solomon Is, Vanuatu
B. (*Bactrocera*) *speculifera* (Walker)	ME	1	1	1	1	Papua New Guinea (Mainland, Bismark)
B. (*Bactrocera*) *trilineola* Drew	CL	17	24	31	21	New Caledonia (according to Mille 2008), Vanuatu
B. (*Bactrocera*) *trivialis* (Drew)	CL	10	12	17	9	Indonesia (West Papua), Papua New Guinea (Mainland)
B. (*Bactrocera*) *tryoni* (Froggatt)	CL	28	45	68	56	Australia, New Caledonia, French Polynesia, Pitcairn Is
B. (*Bactrocera*) *umbrosa* (Fabricius)	ME	1	1	2	2	SE Asia, New Caledonia, Palau, Papua New Guinea, Solomon Is, Vanuatu
B. (*Bulladacus*) *eximia* Drew	None	1	1	2	1	Papua New Guinea (Mainland)
B. (*Bulladacus*) *penefurva* Drew	None	2	2	3	2	Papua New Guinea (Mainland), Solomon Is
B. (*Gymnodacus*) *hastigerina* (Hardy)	None	1	1	1	1	Papua New Guinea (Mainland), Solomon Is
B. (*Notodacus*) *xanthodes* (Broun)	ME	20	24	34	22	American Samoa, Cook Is (Southern group), Fiji, French Polynesia (Austral group), Nauru (eradicated), Niue, Samoa, Tonga, Wallis & Futuna
B. (*Paradacus*) *decipiens* (Drew)	None	1	1	1	1	Papua New Guinea (East New Britain)
B. (*Paratridacus*) *atrisetosa* (Perkins)	None	3	7	8	6	Papua New Guinea (Mainland)
B. (*Sinodacus*) *strigifinis* (Walker)	CL	2	2	2	2	Australia, Indonesia (West Papua), Papua New Guinea (mainland)
B. (*Sinodacus*) *triangularis* (Drew)	CL	1	1	1	1	Papua New Guinea (Bismarck Archipelago, Bougainville)
B. (*Zeugodacus*) *cucurbitae* (Coquillett)	CL	4	11	13	13	Tropical Asia, Guam, Hawaii, Nauru (eradicated), CNMI, Papua New Guinea, Solomon Islands
D. (*Callantra*) *axanus* (Hering)	CL	1	1	1	1	Australia, Papua New Guinea (mainland, Bismarck Archipelago)
D. (*Callantra*) *solomonensis* Malloch	CL	1	4	5	5	Papua New Guinea (Bougainville), Solomon Is

[1] *B.* (*Bactrocera*) *passiflorae* (sp.nr.) is described in Drew and Hancock (1995).

the dominant species, displacing the indigenous *B. curvipennis* and *B. psidii* (Amice 1997), and French Polynesia in 1970, where it displaced *B. kirki* (Vargas et al. 2007, 2012), and subsequently spread to Pitcairn. It also invaded the Cook Islands (2001), from which it was promptly eradicated (Allwood 2002). On the top three list we also include melon fly (*B. cucurbitae*) (Fig. 1c), a destructive cucurbit pest that invaded Hawaii (1895), Papua New Guinea, the Solomon Islands (1984), the Mariana Islands (1936), and Nauru (1982, eradicated in 1999). It is noteworthy that Pacific Islands other than those cited above lack cucurbit pest fruit flies altogether, and can export a diversity of fresh cucurbit produce, based on non-host status (Heimoana et al. 1997).

Secondary to the top three species cited above are polyphagous fruit pests indigenous to the Pacific Islands. Among the more widespread species are mango fly (*B. frauenfeldi*) (Fig. 2a), present in Papua New Guinea, the Solomon Islands, and most of Micronesia, where it can be locally extremely abundant due to host availability throughout the year (Leblanc and Allwood 1997). Widespread on the Polynesian Islands are *B. kirki* (Fig. 2b), *B. passiflorae* (Fig. 2c), and the Pacific fruit fly (*B. xanthodes*) (Fig. 3a). Among these, *B. kirki* invaded French Polynesia in 1928 and *B. xanthodes* invaded the Austral group of French Polynesia in 1998. Although polyphagous, the latter species tends to breed predominantly on breadfruit, papaya and avocado ((Fig. 3a). Other more localized polyphagous species that did not expand beyond their native range in the Pacific include *B. curvipennis* and *B. psidii* in New Caledonia (Fig. 3b), *B. melanotus* in the Cook islands, *B. trilineola* in Vanuatu (Fig. 3c), and *B. facialis* in Tonga, a seemingly relatively benign pest of fruits (Fig. 4), yet an extremely destructive pest of chilli peppers.

Finally, two species with a narrow host range, yet formidable pests, are worth mentioning. Breadfruit fly (*B. umbrosa*) outcompetes other fruit flies on breadfruit in the Melanesian countries west of Fiji and in Palau, and can infest up to 75% of ripe fruits. Banana fly (*B. musae*), restricted to Australia and Papua New Guinea, infests even young green fruits (Smith 1977). Although several other species have been reared from banana, it was invariably from overripe fruits, and Pacific Island countries other than PNG are generally allowed to export bananas at the green stage.

Host fruit survey data determined that tropical almond, Pacific lychee, strawberry and common guava, Malay apple and other *Syzygium* species, soursop, Surinam cherry, breadfruit, Polynesian chestnut and avocado are the major hosts, sustaining large populations of all the polyphagous species (Figs 1–4). Most of these host trees are very common, planted among dwellings and occurring as feral trees, throughout the Pacific Islands, and their seasonal or year around fruiting cycles greatly influence abundance of these pest flies (Amice and Sales 1997, Leblanc and Allwood 1997, Tora Vueti et al. 1997). Although the graphs and data on the tables show very high levels of infestation, the stage of maturity of the sampled host fruit varied widely, from green to very ripe or rotten, with a general bias on sampling ripe fruit. Therefore these figures tend to overestimate the levels of infestation that are otherwise usually lower at the stages at which these fruits are generally harvested for consumption or commercial purposes. For this reason, we caution readers to give careful consideration to the stage of maturity in host status assessments for market access (Allwood 1997).

The data presented in this paper have profound implications in all areas of fruit fly research, areawide management and

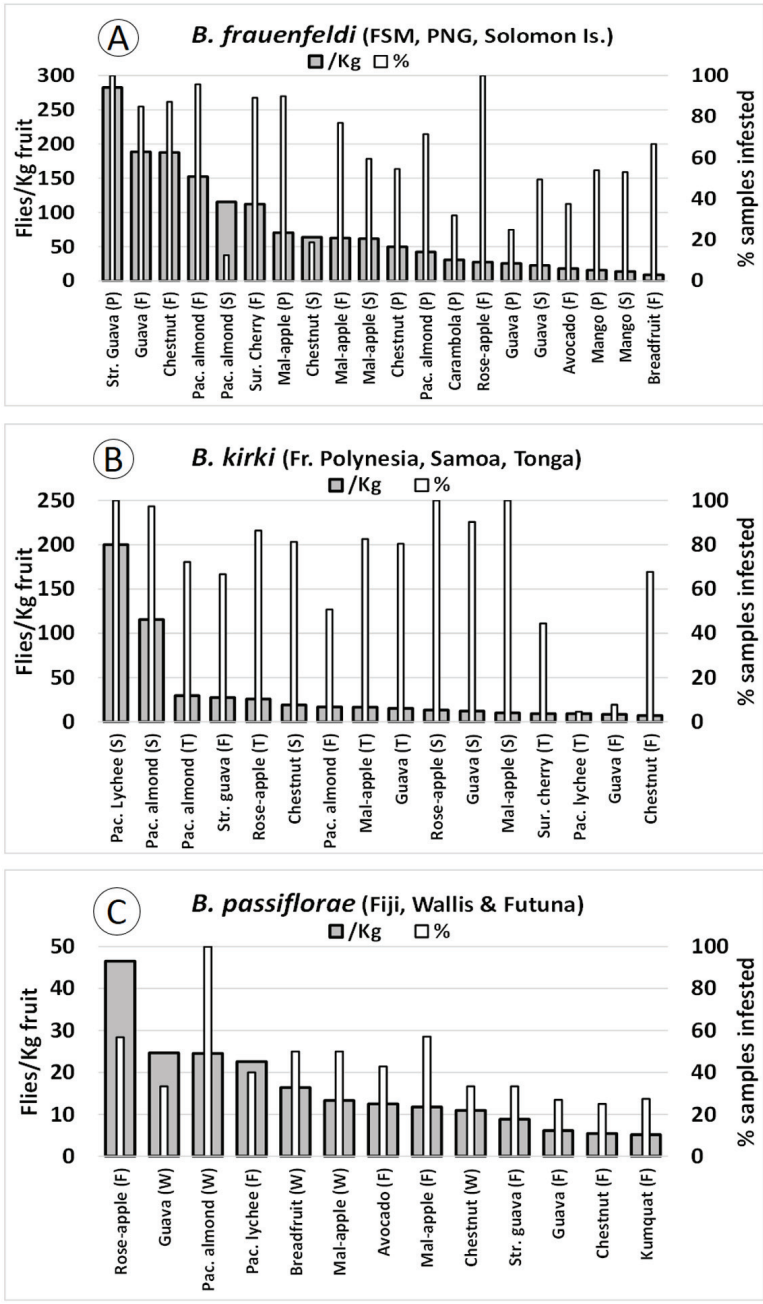

Figure 2 A–C. Mean number of flies emerged per kg fruit and percent samples infested for the most infested hosts for mango fly (*Bactrocera frauenfeldi*) (A), *B. kirki* (B), and *B. passiflorae* (C).

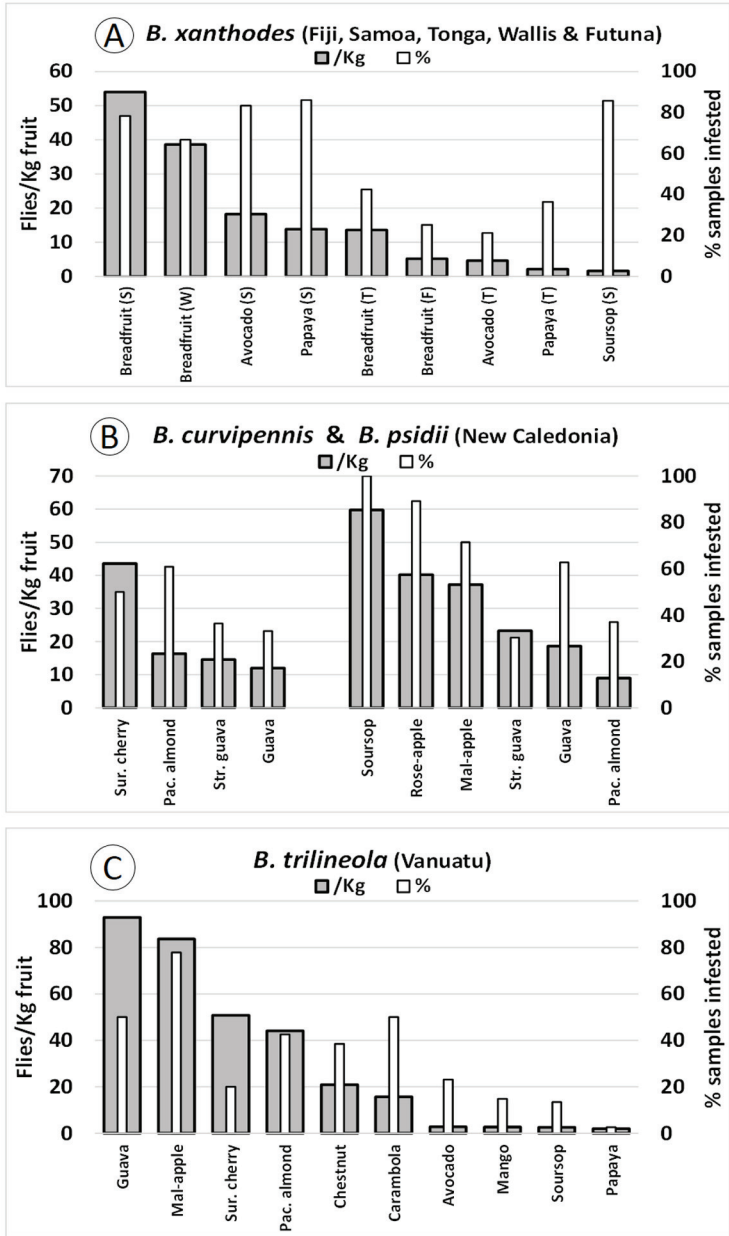

Figure 3 A–C. Mean number of flies emerged per kg fruit and percent samples infested for the most infested hosts for Pacific fruit fly (*Bactrocera xanthodes*) (A), *B. curvipennis* (B), *B. psidii* (B), and *B. trilineola* (C).

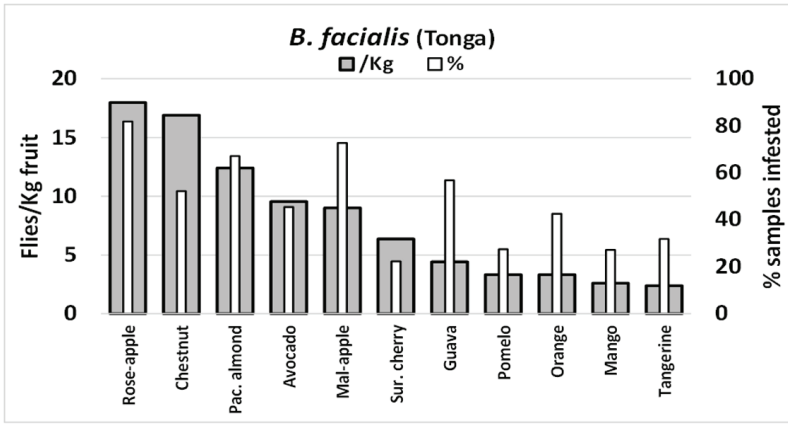

Figure 4. Mean number of flies emerged per kg fruit and percent samples infested for the most infested hosts for *Bactrocera facialis*.

biosecurity measures (Allwood 1997). For research, host information can provide guidelines on what hosts should be collected to obtain a large number of flies to set up and rejuvenate laboratory colonies of fruit flies for host status testing and postharvest treatment development. For areawide management, these data will help research and extension specialists inform growers on less susceptible host crops to grow and which highly infested hosts in the vicinity of the cultivated crops to focus on in trapping and bait spraying (Aluja et al. 2009). For biosecurity, the understanding of host susceptibility to each fly species is essential in the formulation of emergency response plans and effective implementation of eradication programs, targeting the most susceptible hosts in priority, as was successfully achieved in Nauru (Allwood et al. 2002) and the Cook Islands (Allwood 2002). These data will also help importing countries in assessing risks of introducing pests through legal trading or illicit importation of contaminated host fruits (FAO 2007).

Host Plants and their Recorded Fruit Fly Species

In the following tables, for the country French Polynesia (FrPo), FrPo[1] = *B. dorsalis* contained, FrPo[2] = *B. dorsalis* established.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
ANACARDIACEAE: *Anacardium occidentale* L. Cashew.							
B. curvipennis	NCal	72	2.52	2/3	15.08	26.03	6, 29, 30
B. facialis	Tonga	499	24.59	1/10	0.08	0.37	27, 40
B. frauenfeldi	PNG	1930	105.61	11/31	3.82	6.95	9, 23, 36
B. papayae	PNG	1092	52.05	1/22	0.04	0.56	23
B. passiflorae	Fiji	369	21.67	3/25	0.60	2.40	33
B. psidii	NCal	72	2.52	1/3	0.40	1.11	6, 29, 30
B. trilineola	Vanu	1	0.07	1/1	85.71	85.71	1
B. tryoni	NCal	72	2.52	1/3	2.38	10.71	6, 29, 30

Other field infestations: *B. kirki* in Tonga (New Zealand DSIR collection label data). *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991).
Damage assessments: 5.2 (range among samples: 6–66) % of ripe fruits infested by *B. frauenfeldi* in Papua New Guinea (East New Britain Province), based on 501 fruits (Leblanc et al. 2001).
Note: The cashew host record for *B. perfusca* was erroneously reported in Leblanc et al. 2012. Cashew is not known to be a host for *B. perfusca*.

ANACARDIACEAE: *Mangifera indica* L. Mango.							
B. curvipennis	NCal	1339	198.80	9/68	0.57	1.52	6, 8, 29, 30
B. dorsalis	FrPo[1]	770	203.62	15/100	1.22	7.79	22
	FrPo[2]	7758	1641.56	393/533	13.81	16.48	42, 43
	Nauru	519	43.19	20/28	58.12	71.00	
B. facialis	Tonga	2868	288.86	22/81	2.60	8.85	10, 27, 40
B. frauenfeldi	FSM	1007	139.65	16/32	4.69	9.05	20, 24
	Nauru	1910	151.79	55/117	11.17	19.19	5
	PNG	580	109.24	28/52	15.75	20.80	9, 23, 36
	Solo	427	72.01	27/51	13.53	21.25	17, 41
B. kirki	FrPo[1]	770	203.62	6/100	0.15	2.94	12, 22
	FrPo[2]	7758	1641.56	21/533	0.06	1.45	42, 43
	Samoa	61	10.62	3/8	1.32	4.07	39
	Tonga	2954	299.94	6/85	0.15	1.32	27, 40
B. melanotus	Cook	55	14.94	6	unknown	2.68	10, 18, 44
B. papayae	PNG	108	24.27	1/16	0.33	11.94	23
B. passiflorae	Fiji	1910	304.37	13/142	0.63	2.19	16, 33, 37, 38
*B. passiflorae**	Tonga	86	11.08	1/4	3.70	16.53	
B. psidii	NCal	1339	198.80	9/68	0.43	1.50	6, 10, 29, 30, 44
B. trilineola	Vanu	216	33.69	4/27	2.64	10.74	1, 44
B. tryoni	FrPo[1]	770	203.62	29/100	2.39	7.88	12, 22
	FrPo[2]	7758	1641.56	127/533	0.78	2.79	42, 43
	NCal	1339	198.80	27/68	2.32	4.60	6, 29, 30
B. xanthodes	Cook	10	2.94	1	unknown	0.28	18
	Tonga	2954	299.94	9/85	0.32	2.47	40

*(sp.nr.)

Other field infestations: *B. dorsalis* in CNMI (Hardy and Adachi 1956). *B. perfusca* in French Polynesia (Leblanc and Putoa 2000). *B. trivialis* in Papua New Guinea (Tenakanai 1997, Leblanc et al. 2001).

Damage assessments: 20–25% of fruits infested by *B. passiflorae* in Fiji (Allwood and Leblanc 1997). 8.1% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 172 fruits in 8 samples (Leblanc and Allwood 1997). 50.8% of ground fruits infested by *B. frauenfeldi* in Papua New Guinea (East New Britain), based on 132 fruits (Leblanc et al. 2001). 33.4% of mature green, ripe and ground fruits infested by *B. dorsalis* (31.2%), *B. frauenfeldi* (10.9%), and *B. xanthodes* (0.25%) in Nauru, prior to *B. dorsalis* eradication, based on 404 fruits in 25 samples (RFFP data). 12.1% of ground fruits infested by *B. frauenfeldi* in Nauru, after *B. dorsalis* eradication, based on 953 fruits in 65 samples (RFFP data).
Note: The mango host record for *B. perfusca* was erroneously reported as cashew in Leblanc et al. 2012. Cashew is not known to be a host for *B. perfusca*. The record of *B. froggatti* bred from mango in the Solomon Islands (White and Elson-Harris 1992, Waterhouse 1993) is dubious and was not confirmed in subsequent host fruit surveys.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
ANACARDIACEAE: *Mangifera minor* Blume.							
B. frauenfeldi	Solo	134	9.85	3/8	5.08	10.53	17
ANACARDIACEAE: *Spondias dulcis* Parkinson. Jew plum.							
B. dorsalis	FrPo[2]	226	28.25	5/24	1.91	5.66	22, 42, 43
B. frauenfeldi	FSM	104	8.22	1/6	0.12	0.65	24
	Solo	424	18.79	2/16	1.44	5.33	17
B. hastigerina	Solo	424	18.79	9/16	7.24	11.07	17
B. kirki	FrPo[1]	1085	205.15	2/67	0.03	1.11	22
	Tonga	559	38.39	1/19	0.21	3.08	
B. trilineola	Vanu	662	63.34	1/42	2.21	140.00	
B. tryoni	FrPo[1]	1085	205.15	17/67	0.58	1.93	22
	FrPo[2]	226	28.25	5/24	0.21	0.57	42, 43
	NCal	139	10.77	4/15	1.30	4.09	29, 30

Other field infestations: *B. hastigerina* in Papua New Guinea (Novotny et al. 2005). *B. paramusae* in Papua New Guinea (Novotny et al. 2005).
Laboratory host status tests: No *B. xanthodes* progeny was bred from damaged fruit exposed to gravid female flies in Samoa.

ANACARDIACEAE: *Spondias mombin* L. Hog-plum.

Field infestations: *B. kirki* and *B. tryoni* in French Polynesia (Hammes et al. 1989, Leblanc and Putoa 2000).

ANNONACEAE: *Annona cherimola* Mill. Cherimoya.

B. melanotus	Cook	18	2.59	2	unknown	14.29	
B. xanthodes	Cook	16	2.09	1	unknown	15.79	

ANNONACEAE: *Annona glabra* L. Pond-apple.

B. frauenfeldi	FSM	167	20.69	4/9	12.32	19.63	20, 24

Damage assessments: 26.0% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 77 fruits in 6 samples (Leblanc and Allwood 1997).

ANNONACEAE: *Annona muricata* L. Soursop.

B. dorsalis	FrPo[1]	186	162.45	1/32	0.01	0.07	22
	FrPo[2]	82	53.11	29/45	19.49	27.13	42
	Nauru	33	9.43	5/9	23.01	31.09	
B. facialis	Tonga	116	93.53	5/40	0.27	1.80	40

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
***Annona muricata* L.** Soursop (continued)							
B. frauenfeldi	FSM	38	40.94	8/17	1.07	1.63	20, 24
	Nauru	55	18.28	5/20	26.05	92.97	
	PNG	35	32.25	4/16	3.07	13.71	23
	Solo	62	42.64	11/37	3.64	11.19	17, 41
B. kirki	FrPo[1]	186	162.45	8/32	1.35	4.71	22
	FrPo[2]	82	53.11	2/45	0.08	0.82	42
	Samoa	10	14.15	1/7	2.05	20.56	
	Tonga	116	93.53	1/40	0.01	0.14	40
B. passiflorae	Fiji	95	63.17	5/54	0.63	5.23	
B. psidii	NCal	2	1.44	1/1	59.72	59.72	29, 30
B. trilineola	Vanu	149	80.34	7/52	2.63	15.30	1
B. tryoni	FrPo[1]	186	162.45	20/32	7.08	9.57	22
	FrPo[2]	82	53.11	14/45	2.37	5.93	42
B. xanthodes	Samoa	10	14.15	6/7	1.63	2.04	39
	Tonga	116	93.53	1/40	0.01	0.37	

Other field infestations: *B. dorsalis* in CNMI (Hardy and Adachi 1956).
Damage assessments: 28.1% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 32 fruits in 17 samples (Leblanc and Allwood 1997).

ANNONACEAE: *Annona reticulata* L. Custard apple.

B. curvipennis	NCal	16	6.73	1/8	0.45	10.71	6, 29, 30
B. frauenfeldi	PNG	90	18.64	4/10	29.83	38.64	23
B. kirki	FrPo[1]	25	10.67	1/3	1.87	6.92	22, 42
B. passiflorae	Fiji	139	30.47	1/46	1.15	21.74	
B. psidii	NCal	16	6.73	1/8	0.30	7.14	6, 29, 30
B. tryoni	FrPo[1]	25	10.67	1/3	1.22	4.50	22, 42
	NCal	16	6.73	3/8	29.42	60.00	6, 29, 30

Other field infestations: *B. dorsalis* in French Polynesia (Vargas et al. 2007) and Guam (Hardy and Adachi 1956). *B. mucronis* in New Caledonia (Mille 2008).

ANNONACEAE: *Annona squamosa* L. Sugar-apple.

B. frauenfeldi	FSM	18	2.56	1/8	0.39	5.26	24
B. melanotus	Cook	4	0.92	1	unknown	47.83	
B. psidii	NCal	13	1.18	1/2	1.69	4.17	8, 29, 30
B. tryoni	NCal	13	1.18	1/2	7.63	12.86	29, 30

Other field infestations: *B. curvipennis* in New Caledonia (Cochereau 1970).
Note: Cochereau (1970) reported that *B. curvipennis* and *B. psidii* oviposited in feeding punctures produced by fruit piercing moth.

ANNONACEAE: *Rollinia* sp.

B. dorsalis	FrPo[2]	2	0.68	1/1	20.68	20.68

ARECACEAE: *Areca catechu* L. Betel nut.

Field infestations: *B. frauenfeldi* in Papua New Guinea (Dori et al. 1993, Leblanc et al. 2001, Tenakanai 1997).
Note: Fruits are infested at the fully ripe stage, when they are yellow and soft.

BROMELIACEAE: *Ananas comosus* (L.) Merr. Pineapple.

Reports of pineapple as host of *B. kirki* and *B. xanthodes* in Tonga (Litsinger et al. 1991) and of *B. xanthodes* in Fiji (Simmonds 1936, Hinckley 1965), and the unconfirmed record of *B. facialis* in Tonga (White and Elson-Harris 1992) are dubious. *B. trilineola* in Vanuatu and *B. xanthodes* and *B. passiflorae* in Fiji were demonstrated not to breed on damaged pineapple exposed to gravid females in the laboratory. No fruit flies ever emerged from the 143 ripe pineapples sampled in the Pacific Islands during the RFFP surveys.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
CARICACEAE: *Carica papaya* L. Papaya.							
B. dorsalis	FrPo[1]	300	177.82	2/42	0.02	0.33	22
	FrPo[2]	667	255.23	104/189	29.15	51.08	42, 43
B. facialis	Tonga	461	429.32	6/77	0.34	33.67	40
B. frauenfeldi	FSM	54	31.19	2/11	2.98	22.36	24
	PNG	682	369.15	22/106	4.28	17.34	9, 23, 36
	Solo	132	79.59	23/80	6.24	18.76	17, 41, 44
B. kirki	FrPo[1]	300	177.82	1/42	0.07	4.36	22
	FrPo[2]	667	255.23	3/189	0.02	0.68	42
B. melanotus	Cook	3o	54.51	8	unknown	3.17	18, 44
B. musae	PNG	630	333.56	2/90	0.08	1.26	9, 23, 36
B. papayae	Palau	26	10.35	3/12	2.71	6.39	
	PNG	630	333.56	3/90	0.15	2.30	23
B. trilineola	Vanu	356	286.49	3/114	1.97	100.72	1, 44
B. tryoni	FrPo[1]	300	177.82	7/42	1.73	5.80	12, 22
	FrPo[2]	667	255.23	24/189	2.77	17.33	42, 43
B. xanthodes	Cook	22	46.53	4	unknown	0.43	18
	Fiji	391	223.61	8/159	0.80	21.77	16, 33, 37
	Samoa	304	149.67	74/86	13.82	15.38	28, 39
	Tonga	461	429.32	28/77	2.09	9.03	27, 40

Other field infestations: *B. curvipennis* and *B. psidii* in New Caledonia, ovipositing in feeding punctures produced by fruit piercing moth (Cochereau 1970). *B. dorsalis* in Guam (Hardy and Adachi 1956). *B. passiflorae* (sp.nr.) in Tonga (Litsinger 1991, Tupou et al. 2001).

Damage assessments: 12% of fruits infested during summer and 1% during winter by *B. melanotus* and *B. xanthodes* in Cook Islands (Allwood and Leblanc 1997). 4–31% of Sunset variety fruits and 19–37% of the local variety infested by *B. xanthodes* in Samoa (Allwood and Leblanc 1997). 5.9% of mature green and ripe fruits infested by *B. xanthodes* in Fiji, based on 102 fruits in 77 samples (RFFP data). 11% damage by *B. papayae* in Palau, reported by Sengebau et al. (2005).

Laboratory host status tests: Simmonds (1936) reported papaya as a host to *B. passiflorae* in Fiji from laboratory infestation rather than field collection, and Hinckley (1965) subsequently cited papaya as host. In Samoa, the Waimanalo and Sunrise varieties of papaya were infested by *B. xanthodes* when damaged, and while intact Sunrise papaya was still a host in field cage tests at colorbreak, the intact Waimanalo papaya was non-host at colorbreak. In Fiji, on the other hand, intact Waimanalo and Sunrise papaya were non-hosts to *B. passiflorae* and *B. xanthodes*, when exposed to gravid females at the colorbreak export stage. In any case, most of the field infestation records cited above were usually emergences from fully ripe fruits, long past the harvesting stage, and papaya undergoes forced hot air treatments as pre-requisite for export from the Pacific Islands.

Note: An anomalous and highly dubious record of *B. calophylli* bred from papaya in the Solomon Islands was published by Hollingsworth et al. (2003).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
CLUSIACEAE: *Garcinia x mangostana* L. Mangosteen.							
B. dorsalis	FrPo[2]	45	4.42	1/4	4.52	5.90	42
B. frauenfeldi	PNG	184	17.56	1/5	0.57	6.99	23
B. passiflorae	Fiji	308	26.66	1/42	0.23	10.34	
COMBRETACEAE: *Terminalia catappa* L. Tropical almond.							
B. curvipennis	NCal	1639	53.08	28/46	16.33	23.91	6, 29, 30
B. dorsalis	FrPo[1]	8824	212.91	6/126	0.10	1.84	22
	FrPo[2]	26912	646.28	272/353	18.26	20.88	42, 43
	Nauru	102	3.28	2/7	14.02	23.95	
B. eximia	PNG	581	23.45	1/18	0.04	0.83	
B. facialis	Tonga	4974	125.14	47/70	12.41	16.54	27, 40
B. frauenfeldi	FSM	23057	658.54	181/189	152.50	156.46	20, 24
	Nauru	1205	37.21	54/68	231.03	262.66	5
	Palau	301	7.42	7/8	331.40	514.43	
	PNG	658	25.74	15/21	42.11	84.92	9, 23
	Solo	948	22.38	4/32	115.46	166.28	17
B. kirki	FrPo[1]	8824	212.91	64/126	16.96	22.70	12, 22
	FrPo[2]	26912	646.28	221/353	9.28	12.82	42, 43
	Samoa	8019	120.48	111/114	115.62	116.86	39
	Tonga	5151	127.39	52/72	29.51	40.98	27, 40
B. melanotus	Cook	923	22.01	17	unknown	21.94	18
B. mucronis	NCal	1639	53.08	1/46	0.02	0.98	6, 29, 30
B. papayae	Palau	301	7.42	2/8	4.72	7.32	
B. passiflorae	Fiji	1111	22.08	6/34	3.85	16.70	37, 38
	W & F	76	1.10	2/2	24.55	24.55	
*B. passiflorae**	Tonga	177	2.25	1/2	5.78	6.50	27, 40
B. penefurva	PNG	581	23.45	1/18	1.99	78.95	
	Solo	948	22.38	1/32	0.04	0.56	
B. psidii	NCal	1639	53.08	17/46	8.97	19.65	6, 29, 30
B. samoae	Samoa	8019	120.48	2/114	0.02	0.45	39
B. trilineola	Vanu	1181	31.65	20/47	44.11	80.88	1
B. trivialis	PNG	581	23.45	3/18	0.80	2.39	23
B. tryoni	FrPo[1]	8824	212.91	86/126	73.86	87.34	12, 22
	FrPo[2]	26912	646.28	316/353	36.43	37.82	42, 43
	NCal	1639	53.08	40/46	96.18	109.76	6, 29, 30
B. xanthodes	Tonga	5151	127.39	1/72	0.01	0.32	

*(sp.nr.)

Other field infestations: *B. dorsalis* in CNMI (Hardy and Adachi 1956). *B. perfusca* in French Polynesia (Leblanc and Putoa 2000). *B. xanthodes* in Samoa (Tunupopo Laiti et al. 2002).

Damage assessments: 68.7% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 252 fruits in 11 samples (Leblanc and Allwood 1997). 33.2 (range among samples: 22–80)% of ground fruits infested by *B. frauenfeldi* and *B. trivialis* in Papua New Guinea (Central Province), based on 250 fruits (Leblanc et al. 2001). 54.9% of ripe and ground fruits infested by *B. frauenfeldi* in Nauru, after *B. dorsalis* eradication, based on 403 fruits in 32 samples (RFFP data).

Note: Hardy and Adachi (1956) cited *T. catappa* as a host of *B. ochrosiae*, but did not provide details of rearing records or specimens label data. We therefore treat it as non-host.

COMBRETACEAE: *Terminalia kaernbachii* Warb. Okari nut.							
B. frauenfeldi	PNG	139	16.26	1/9	1.41	21.70	9, 23
B. penefurva	PNG	139	16.26	1/9	1.94	3.37	

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
CUCURBITACEAE: *Citrullus lanatus* (Thunb.) Matsum. & Nakai. Watermelon.							
B. atrisetosa	PNG	97	48.51	1/16	1.24	9.67	10, 23
B. cucurbitae	PNG	104	54.55	4/21	5.72	39.34	23, 36
	Solo	18	16.39	2/12	3.60	9.83	17, 44
B. xanthodes	Tonga	56	92.82	1/11	0.04	1.29	

Other field infestations: *B. cucurbitae* infesting fruits in CNMI (Wong et al. 1989) and Guam (Waterhouse 1993), and flowers in Papua New Guinea (Tenakanai 1997, Leblanc et al. 2001).
Damage assessments: 31.9 (range among samples: 31–35)% of flowers and 26% of young fruits infested by *B. cucurbitae* in Papua New Guinea (Central Province), based on 69 flowers and 50 young fruits (Leblanc et al. 2001).
Laboratory host status tests: *B. xanthodes* was bred from damaged but not from intact watermelons of the varieties Sugar Baby and Candy Red exposed to gravid females in Tonga. *B. facialis* was bred from damaged but not from intact Sugar Baby, and was not bred from damaged Candy Red watermelon. *B. trilineola* was bred from both damaged and intact Candy Red watermelon exposed to gravid females in Vanuatu.
Note: The field infestation of *B. xanthodes* in Tonga was of a fruit damaged at its blossom end, accounting for the emergence of four flies.

CUCURBITACEAE: *Coccinia grandis* (L.) Voigt. Ivy gourd.							
B. cucurbitae	Solo	547	7.53	9/22	42.76	101.58	17

Other field infestations: *B. simulata* in fruits in Solomon Islands (Hollingsworth et al. 2003).

CUCURBITACEAE: *Cucumis melo* L. Melon.							
Fruits							
B. atrisetosa	PNG	94	23.16	1/8	3.11	13.61	23
B. cucurbitae	PNG	94	23.16	7/8	17.79	32.42	23
Flowers							
B. atrisetosa	PNG	4	0.07	1/1	14.29	14.29	

Other field infestations: *B. cucurbitae* infesting fruits in CNMI (Wong et al. 1989) and Guam (Hardy and Adachi 1956, Waterhouse 1993).

CUCURBITACEAE: *Cucumis sativus* L. Cucumber.							
B. cucurbitae	PNG	374	90.95	7/32	7.08	84.18	9, 23
B. cucurbitae	Solo	107	25.16	3/21	4.81	23.73	17, 41, 44
D. solomonensis	Solo	107	25.16	1/21	0.28	1.67	10, 17, 44

Other field infestations: *B. atrisetosa* in Papua New Guinea (Drew 1989, Dori et al. 1993, Tenakanai 1997). *B. cucurbitae* in CNMI (Wong et al. 1989) and Guam (Hardy and Adachi 1956, Waterhouse 1993).
Laboratory host status tests: *B. facialis* was not bred from damaged cucumber exposed to gravid females in Tonga. *B. xanthodes* and *B. passiflorae* were not bred from intact cucumber in Fiji. However, *B. xanthodes* was bred from damaged but not from intact cucumber in Tonga. *B. trilineola* was not bred from damaged or intact cucumber of the Conqueror variety in Vanuatu.

CUCURBITACEAE: *Cucurbita pepo* L. Squash, zucchini, pumpkin.							
Fruits							
B. atrisetosa	PNG	333	83.91	6/20	2.33	6.30	9, 10, 23, 36
B. cucurbitae	PNG	580	316.17	12/50	2.75	10.70	9, 23
B. decipiens	PNG	247	232.26	14/30	4.28	9.02	9, 10, 23, 36

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
***Cucurbita pepo* L.** Squash, zucchini, pumpkin (continued)							
B. tryoni	FrPo[1]	6	11.81	1/5	0.59	1.63	
D. solomonensis	Solo	25	13.74	1/11	2.91	160.00	10, 17, 44
Flowers							
B. atrisetosa	PNG	unknown	unknown	3/15	unknown	unknown	
B. cucurbitae	PNG	unknown	unknown	11/15	unknown	unknown	23

Other field infestations: *B. cucurbitae* in fruits in CNMI (Hardy and Adachi 1956, Wong et al. 1989), Guam (Hardy and Adachi 1956), and Solomon Islands (Waterhouse 1993, Vagalo et al. 1997). *B. strigifinis* on flowers in Papua New Guinea (Tenakanai 1997, Leblanc et al. 2001). *B. triangularis* on flowers in Papua New Guinea (Leblanc et al. 2012).
Damage assessments: 60–87% of fruits infested by *B. cucurbitae* and *D. solomonensis* in Solomon Islands (Allwood and Leblanc 1997). 24% of mature pumpkin fruits infested by *B. cucurbitae* and *B. decipiens* in Papua New Guinea (East New Britain Province), based on 142 fruits (Leblanc et al. 2001). 14.5 (range among samples: 0–66)% of mature fruits infested by *B. cucurbitae* (mostly) and a few *B. atrisetosa* in Papua New Guinea (Central Province), based on 76 fruits (Leblanc et al. 2001). 25% of pumpkin flowers infested by *B. cucurbitae* (mostly) and a few *B. strigifinis* and *B. atrisetosa* in Papua New Guinea (Central Province), based on 385 flowers (Leblanc et al. 2001).
Laboratory host status tests: *B. facialis* was bred from damaged but not from intact zucchini exposed to gravid females in Tonga. *B. xanthodes* was bred from damaged zucchini in Tonga and Fiji. *B. passiflorae* in Fiji and *B. kirki* in Samoa were both bred from damaged zucchini. Damaged squash is non-host to both *B. xanthodes* and *B. passiflorae* in Fiji and *B. trilineola* in Vanuatu.
Note: *C. pepo* was erroneously cited as a host to *B. kirki*, instead of *B. tryoni*, in French Polynesia (Leblanc and Putoa 2000).

CUCURBITACEAE: *Luffa acutangula* (L.) Roxb. Angled luffa.

Field infestations: *B. cucurbitae* in Nauru (Waterhouse 1993). A record of *D. solomonensis*, wrongly attributed to Drew (1989), was erroneously published by Leblanc et al. (2012).

CUCURBITACEAE: *Luffa cylindrica* (L.) M. Roem. Luffa.

B. atrisetosa	PNG	55	1.79	3/7	64.80	105.45	23
B. cucurbitae	PNG	55	1.79	1/7	22.35	667.00	23
D. axanus	PNG	55	1.79	1/7	10.61	29.23	23
D. solomonensis	Solo	38	0.88	3/4	127.27	162.32	

Laboratory host status tests: Heimoana et al. (1997) reported that in Fiji, *B. passiflorae* or *B. xanthodes* were not bred from intact "spongy gourd" (likely *L. cylindrica*) exposed to gravid females, but *B. xanthodes* was bred from damaged fruits.

CUCURBITACEAE: *Momordica charantia* L. Bittergourd.

Fly species	Country	No. Fruits	Weight (kg)	Samples infested	Flies/kg all	Flies/kg infested	Citation references
B. atrisetosa	PNG	981	6.52	2/39	1.04	26.83	
B. cucurbitae	PNG	1319	10.56	29/49	189.58	249.00	23

Other field infestations: *B. cucurbitae* in CNMI (Wong et al. 1989), Guam (Waterhouse 1993) and Solomon Islands (Leblanc 2000).
Laboratory host status tests: *B. xanthodes* was bred from damaged but not intact bittergourd exposed to gravid females in Fiji, and *B. passiflorae* did not develop at all on bittergourd in Fiji.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
CUCURBITACEAE: *Trichosanthes cucumerina* L. Snakegourd.							
B. cucurbitae	Solo	335	63.72	6/47	0.83	7.16	17, 41, 44
D. solomonensis	Solo	335	63.72	20/47	15.73	33.52	17, 41, 44
EBENACEAE: *Diospyros kaki* Thunb. Japanese persimmon.							
B. psidii	NCal	17	1.64	1/3	0.61	2.50	29, 30
B. tryoni	NCal	17	1.64	1/3	3.05	12.50	29, 30
EBENACEAE: *Diospyros nigra* (J.F.Gmel.) Perrier. Black sapote.							
B. frauenfeldi	PNG	28	9.30	1/5	3.76	5.98	23
	Solo	15	1.06	1/5	10.38	24.44	17, 41
LAURACEAE: *Persea americana* Mill. Avocado.							
B. dorsalis	FrPo[1]	368	150.70	1/43	0.01	0.12	22
	FrPo[2]	137	44.36	16/34	4.15	7.10	42, 43
B. facialis	Tonga	554	115.49	15/33	9.55	18.99	27, 40
B. frauenfeldi	FSM	31	8.53	3/8	18.05	24.10	20, 24
	PNG	122	41.49	6/18	3.06	5.28	23
	Solo	160	27.26	7/26	2.86	9.11	17, 41
B. kirki	FrPo[1]	368	150.70	7/43	0.40	1.91	22
	FrPo[2]	137	44.36	1/34	0.05	0.98	42
	Samoa	60	26.45	1/12	0.49	4.80	39
	Tonga	554	115.49	5/33	0.06	0.50	27, 40
B. melanotus	Cook	87	25.59	8	unknown	1.00	18, 44
B. passiflorae	Fiji	32	11.27	3/7	12.51	25.64	16, 33
B. trilineola	Vanu	89	25.83	3/13	2.79	9.17	1, 44
B. tryoni	FrPo[1]	368	150.70	19/43	8.75	16.44	12, 22
	FrPo[2]	137	44.36	12/34	2.07	4.06	42, 43
	NCal	7	1.94	4/4	129.38	129.38	6, 29, 30
B. xanthodes	Cook	12	5.72	2	unknown	0.60	18
	Samoa	60	26.45	10/12	18.26	19.32	39
	Tonga	554	115.49	7/33	4.63	22.78	40
LEGUMINOSAE: *Inocarpus fagifer* (Parkinson) Fosberg. Tahiti chestnut.							
B. dorsalis	FrPo[1]	19061	1879.33	38/360	0.39	2.19	22
	FrPo[2]	15241	1457.81	467/634	29.76	35.11	42, 43
B. facialis	Tonga	2130	166.37	35/67	16.91	25.74	27, 40
B. frauenfeldi	FSM	4204	381.35	109/125	187.66	195.99	20, 24
	Palau	44	3.97	1/1	133.50	133.50	
	PNG	811	30.11	12/22	49.82	63.69	9, 23, 36
	Solo	97	4.00	3/16	63.75	637.50	17, 41
B. kirki	FrPo[1]	19061	1879.33	244/360	7.17	8.60	12, 22
	FrPo[2]	15241	1457.81	132/634	1.39	4.78	42, 43

Damage assessments: >90% of fruits infested by *B. cucurbitae* and *D. solomonensis* in Solomon Islands (Allwood and Leblanc 1997).
Note: A dubious record of *B. frauenfeldi* bred from snakegourd in the Solomon Islands was published (Vagalo et al. 1997, Hollingsworth et al. 2003). *B. frauenfeldi* has never been bred from cucurbits other than possibly this instance.

Other field infestations: *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991, Tupou et al. 2001).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
***Inocarpus fagifer* (Parkinson) Fosberg.** Tahiti chestnut (continued)							
	Samoa	283	19.23	13/16	19.08	31.45	39
	Tonga	2286	178.83	3/73	0.08	1.29	27, 40
B. melanotus	Cook	1245	109.75	39	unknown	8.03	18
B. moluccensis	PNG	811	30.11	11/22	18.27	26.99	9, 23, 36
	Solo	97	4.00	2/16	2.75	42.30	17
B. passiflorae	Fiji	436	33.97	10/40	5.48	15.97	16, 33, 37, 38
	W & F	31	3.46	2/6	10.98	22.89	
*B. passiflorae**	Tonga	156	12.46	2/6	4.01	9.62	40
B. trilineola	Vanu	346	33.24	15/39	20.91	51.52	1
B. tryoni	FrPo[1]	19061	1879.33	296/360	13.90	14.94	12, 22
	FrPo[2]	15241	1457.81	326/634	4.63	6.93	42, 43
B. xanthodes	Cook	72	7.54	2	unknown	0.12	
	W & F	31	3.46	1/6	0.58	1.49	

*(sp.nr.)

Other field infestations: *B. xanthodes* in Fiji (Hinckley 1965).

Damage assessments: 56.0% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 207 fruits in 10 samples (Leblanc and Allwood 1997). 34.4 (range among samples: 26–42)% of ripe and ground fruits infested by *B. frauenfeldi* and *B. moluccensis* in Papua New Guinea (Central Province), based on 212 fruits (Leblanc et al. 2001). In Papua New Guinea, *B. moluccensis* is known to destroy the seed, while *B. frauenfeldi* only feeds on the surrounding flesh (Dori et al. 1993).

LEGUMINOSAE: *Phaseolus vulgaris* L. Common bean.

Field infestations: *B. cucurbitae* in Guam (Hardy and Adachi 1956).

LEGUMINOSAE: *Vigna unguiculata* subsp. *unguiculata* (L.) Walp. Snakebean.

Field infestations: *B. bryoniae* (Dori et al. 1993, Tenakanai 1997) and *B. strigifinis* (Tenakanai 1997) infesting fully mature pods of snakebeans in Papua New Guinea. *B. cucurbitae* in Guam (Hardy and Adachi 1956).

LYTHRACEAE: *Punica granatum* L. Pomegranate.

B. passiflorae	Fiji	141	25.62	1/39	0.12	3.23	
B. tryoni	NCal	41	7.00	1/4	3.86	17.31	29, 30

Other field infestations: *B. psidii* in New Caledonia (Mademba-Sy 2000, Mille 2008). *B. tryoni* in French Polynesia (Leblanc and Putoa 2000, Vargas et al. 2007). Records of *B. dorsalis* and *B. kirki* in French Polynesia were erroneously published in Vargas et al. (2007) and should not be treated as valid.

MALPIGHIACEAE: *Malpighia glabra* L. Acerola.

B. curvipennis	NCal	319	1.94	4/5	162.89	169.89	6, 29, 30
B. frauenfeldi	FSM	1377	6.26	13/33	17.24	37.50	20, 24
B. psidii	NCal	319	1.94	2/5	1.55	4.55	29, 30
B. tryoni	NCal	319	1.94	4/5	129.38	134.95	6, 29, 30

Damage assessments: 3.7% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 629 fruits in 26 samples (Leblanc and Allwood 1997).

Note: Hardy and Adachi (1956) cited *M. glabra* as a host of *B. ochrosiae*, but did not provide details of rearing records or specimens label data. We therefore treat it as non-host.

MALVACEAE: *Abelmoschus esculentus* (L.) Moench. Okra.

Field infestations: *B. cucurbitae* in CNMI (Wong et al. 1989).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
MALVACEAE: *Theobroma cacao* L. Cocoa tree.							
B. xanthodes	Fiji	132	41.45	1/34	0.05	4.65	
Other field infestations: *B. passiflorae* in Fiji (Hinckley 1965) and *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991).							
MORACEAE: *Artocarpus altilis* (Parkinson ex F.A. Zorn) Fosberg. Breadfruit.							
B. dorsalis	FrPo[2]	90	165.83	12/32	0.80	1.74	42, 43
	Nauru	33	11.83	1/12	0.08	1.11	
B. facialis	Tonga	91	97.89	3/33	0.16	1.30	27, 40
B. frauenfeldi	FSM	364	459.11	32/48	8.84	9.66	20, 24
	Nauru	247	83.10	3/53	0.18	3.37	
	PNG	202	104.89	2/25	0.86	2.09	9, 23, 36
	Solo	342	177.42	1/80	0.06	100.00	17, 41
B. melanotus	Cook	7	5.30	3	unknown	0.06	18
B. passiflorae	Fiji	305	272.86	4/123	0.14	3.20	16
	W & F	12	14.22	3/6	16.39	34.16	
B. speculifera	PNG	202	104.89	3/25	0.05	0.53	23
B. trilineola	Vanu	181	137.63	1/64	0.09	2.95	1, 44
B. tryoni	FrPo[1]	35	54.17	1/10	0.06	0.87	
	FrPo[2]	90	165.83	2/32	0.07	1.45	42, 43
	NCal	137	39.65	2/20	0.93	16.97	29, 30
B. umbrosa	NCal	137	39.65	6/20	43.46	156.07	6, 8, 29, 30
	PNG	202	104.89	4/25	43.85	84.96	9, 23, 36
	Solo	342	177.42	22/80	5.02	13.22	17, 41
	Vanu	181	137.63	19/64	20.00	57.90	1
B. xanthodes	AmSamoa	9	2.29	1/1	334.93	334.93	
	Cook	185	235.17	46	unknown	52.55	18
	Fiji	305	272.86	31/123	5.19	16.58	16, 37, 38
	Samoa	35	39.59	18/23	53.98	68.82	39
	Tonga	92	99.89	14/34	13.60	25.39	27, 40
	W & F	12	14.22	4/6	38.61	45.75	

Other field infestations: *B. dorsalis* in CNMI (Hardy and Adachi 1956). *B. frauenfeldi* in Kiribati (Waterhouse 1993). *B. xanthodes* in Nauru (Allwood et al. 2002).
Damage assessments: 62% of ripe fruits infested by *B. xanthodes* in American Samoa (Sualevai et al. 2001). 19% of mature green and ripe fruits infested by *B. passiflorae* (4.4%) and *B. xanthodes* (17.8%) in Fiji, based on 90 fruits in 63 samples (RFFP data). 37.3% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 311 fruits in 60 samples (Leblanc and Allwood 1997). 75.3% of ripe fruits infested by *B. umbrosa* (mostly), *B. frauenfeldi* and *B. speculifera* (a few specimens) in Papua New Guinea (East New Britain Province), based on 73 fruits (Leblanc et al. 2001). 21.2% of ripe, mature green and ground fruits infested by *B. umbrosa* (20%) and *B. trilineola* (1.2%) in Vanuatu, based on 85 fruits in 51 samples (RFFP data).
Note: A dubious record of *B. distincta* was published in Tonga (Litsinger et al. 1991), and the record of *B. kirki* in French Polynesia (Vargas et al. 2007) is erroneous. Neither species were bred from the 222 samples (651 fruits) of *A. altilis* collected during the surveys in countries where one or either of these species are known to occur.

MORACEAE: *Artocarpus heterophyllus* Lam. Jackfruit.							
B. frauenfeldi	Solo	32	21.47	1/10	0.09	0.67	17, 41
B. melanotus	Cook	2	1.88	1	unknown	0.32	
B. passiflorae	Fiji	63	124.65	3/39	0.19	2.37	16
B. tryoni	NCal	66	160.50	1/31	0.01	0.03	6, 29, 30

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
***Artocarpus heterophyllus* Lam.** Jackfruit (continued)							
B. umbrosa	NCal	66	160.50	7/31	8.78	21.79	6, 8, 29, 30
B. xanthodes	Cook	6	12.47	3	unknown	19.81	18
	Fiji	63	124.65	4/39	0.42	4.00	16, 37, 38
	Samoa	7	21.71	5/6	2.12	2.60	39
MORACEAE: *Artocarpus mariannensis* Trécul. Marianas breadfruit.							
B. frauenfeldi	FSM	20	10.78	1/2	57.88	208.00	24
MORACEAE: *Morus alba* L. White mulberry.							
B. curvipennis	NCal	710	1.72	1/4	1.16	7.69	29, 30
B. psidii	NCal	710	1.72	1/4	6.40	91.67	29, 30
B. tryoni	NCal	710	1.72	3/4	261.63	281.25	29, 30
MUSACEAE: *Musa troglodytarum* L. Fe'i banana.							
B. dorsalis	FrPo[2]	4	0.62	1/2	25.81	72.73	
B. tryoni	FrPo[2]	4	0.62	1/2	1.61	4.55	
MUSACEAE: *Musa x paradisiaca* L. Banana.							
B. dorsalis	FrPo[1]	220	13.89	1/9	0.36	2.26	22
	FrPo[2]	812	75.67	69/98	38.76	51.09	42, 43
B. facialis	Tonga	786	70.75	1/21	0.04	1.43	
B. frauenfeldi	PNG	4314	329.86	7/130	0.19	2.26	9, 23, 36
B. musae	PNG	4314	329.86	29/130	20.09	60.61	9, 23, 34, 36, 44
B. tryoni	FrPo[1]	220	13.89	1/9	2.81	42.39	22
	FrPo[2]	812	75.67	12/98	0.95	6.23	42, 43
	NCal	42	8.72	3/4	2.52	2.64	6, 29, 30
MUSACEAE: *Musa* sp.							
B. papayae	Palau	30	1.68	1/2	25.00	247.06	
B. trilineola	Vanu	280	25.97	1/37	0.15	28.57	1

Other field infestations: *B. umbrosa* in Solomon Islands (Vagalo et al. 1997, Hollingsworth et al. 2003).

Damage assessments: 22.9 (range among samples: 0–75)% of mature to ripe fruits infested by *B. musae* in Papua New Guinea (Central Province), based on 847 fruits (Leblanc et al. 2001). 0.3% of mature to ripe fruits infested by *B. frauenfeldi* in Papua New Guinea (East New Britain Province), based on 334 fruits, before the invasion by *B. musae* (Leblanc et al. 2001). 17.6% of mature to ripe fruits infested by *B. musae* in Papua New Guinea (Morobe Province), based on 346 fruits (Leblanc et al. 2001). 10–40% of ripe fruits infested *B. musae* in Papua New Guinea (Oro Province) (Smith 1977). 10% damage by *B. papayae* reported in Palau by Sengebau et al. (2005).
Laboratory host status tests: In Samoa, *B. kirki* and *B. xanthodes* were bred from damaged and intact Misiluki bananas exposed to gravid females, *B. kirki* was bred from damaged "Samoan banana", and *B. xanthodes* was bred from damaged Mysoe banana, but not from damaged "Samoan banana".
Note: The record of *B. kirki* bred from banana published in Leblanc and Putoa (2000) was erroneous. Nonetheless, *B. kirki* was bred on banana in forced laboratory infestations in Samoa (Heimoana et al. 1997).

Field infestations: *B. bryoniae* in Papua New Guinea (Drew 1989, Leblanc et al. 2001).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
MYRTACEAE: *Eugenia brasiliensis* Lam. Brazil cherry.							
B. distincta	Samoa	32	0.14	1/1	7.14	7.14	39
B. kirki	Samoa	32	0.14	1/1	21.43	21.43	39
MYRTACEAE: *Eugenia uniflora* L. Surinam cherry.							
B. curvipennis	NCal	606	2.96	5/10	43.58	54.66	6, 29, 30
B. dorsalis	FrPo[2]	557	3.52	3/3	97.73	97.73	42, 43
B. facialis	Tonga	920	4.24	2/9	6.37	12.98	27, 40
B. frauenfeldi	FSM	3255	16.35	58/65	111.99	123.55	20, 24
B. kirki	Tonga	920	4.24	4/9	9.43	17.17	27, 40
B. melanotus	Cook	231	0.82	2	unknown	9.76	18
B. psidii	NCal	606	2.96	3/10	3.38	4.67	6, 29, 30
B. trilineola	Vanu	137	1.20	1/5	50.83	76.25	1
B. tryoni	FrPo[2]	557	3.52	3/3	17.33	17.33	22, 42, 43
	NCal	606	2.96	6/10	183.11	222.13	6, 29, 30

Other field infestations: *B. ochrosiae* in CNMI (Waterhouse 1993).
Damage assessments: 60.7% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 392 fruits in 11 samples (Leblanc and Allwood 1997).

MYRTACEAE: *Psidium acutangulum* Mart. Ex DC.							
B. curvipennis	NCal	79	5.94	1/3	2.02	3.82	29, 30
B. psidii	NCal	79	5.94	3/3	1.85	1.85	29, 30
B. tryoni	NCal	79	5.94	2/3	19.36	21.54	29, 30
MYRTACEAE: *Psidium cattleianum* Afzel. Ex Sabine. Strawberry guava.							
B. curvipennis	NCal	1534	15.23	12/33	14.58	24.53	6, 8, 29, 30
B. dorsalis	FrPo[2]	4325	27.32	22/32	13.29	13.42	42, 43
B. frauenfeldi	PNG	125	0.80	2/2	282.50	282.50	23
B. kirki	FrPo[1]	80	3.07	2/3	27.36	28.19	12, 22
	FrPo[2]	4325	27.32	17/32	8.57	12.06	42
B. melanotus	Cook	81	0.79	1	unknown	10.13	
B. passiflorae	Fiji	796	6.35	7/21	8.82	18.36	16, 33
B. psidii	NCal	1534	15.23	10/33	23.24	66.42	6, 8, 10, 29, 30, 44
B. tryoni	FrPo[1]	80	3.07	2/3	79.80	82.21	12, 22
	FrPo[2]	4325	27.32	27/32	49.74	53.78	42, 43
	NCal	1534	15.23	23/33	95.67	122.13	6, 29, 30

Note: *P. cattleianum* was erroneously reported as host of *B. perfusca* in Leblanc et al. (2012, page 41), when the actual host was *Syzygium jambos*.

MYRTACEAE: *Psidium guajava* L. Common guava.							
B. curvipennis	NCal	3467	207.80	48/145	12.00	26.74	6, 8, 29, 30
B. dorsalis	FrPo[1]	2937	234.87	12/116	0.74	12.55	22
	FrPo[2]	14432	1248.20	504/588	48.15	51.16	42, 43
	Nauru	20	0.60	2/2	145.24	145.24	
B. facialis	Tonga	3081	182.12	50/88	4.42	7.71	10, 27, 40
B. frauenfeldi	FSM	4816	221.91	96/113	188.40	193.96	20, 24
	Nauru	97	3.33	14/17	336.14	350.78	5
	Palau	113	10.32	7/9	74.81	97.85	
	PNG	5060	881.50	115/163	26.37	28.65	9, 23, 36

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
***Psidium guajava* L.** Common guava (continued)							
	Solo	669	79.63	42/85	22.42	52.92	17, 41
B. kirki	FrPo[1]	2937	234.87	9/116	8.56	12.91	12, 22
	FrPo[2]	14432	1248.20	238/588	2.13	4.44	42, 43
	Samoa	476	51.47	37/41	12.32	12.71	39
	Tonga	3118	184.64	74/92	15.32	20.00	27, 40
B. melanotus	Cook	882	72.05	41	unknown	13.49	10, 18, 44
B. mucronis	NCal	3467	207.80	1/145	< 0.01	2.13	6, 29, 30
B. neohumeralis	PNG	2550	301.45	1/89	< 0.01	0.25	9, 23, 36
B. obliqua	PNG	2510	580.05	32/74	1.88	3.36	23
B. papayae	Palau	113	10.32	6/9	19.09	25.39	
	PNG	2550	301.45	2/89	0.03	0.23	23
B. passiflorae	Fiji	3732	341.84	70/260	6.16	12.62	16, 33, 37, 38
	W & F	23	2.27	1/3	24.67	112.00	
B. psidii	NCal	3467	207.80	91/145	18.64	24.59	6, 8, 10, 29, 30
B. trilineola	Vanu	1413	61.19	28/56	92.83	171.19	1, 10, 44
B. trivialis	PNG	2550	301.45	23/89	2.76	6.03	9, 23, 36
B. tryoni	FrPo[1]	2937	234.87	90/116	54.91	63.07	12, 22
	FrPo[2]	14432	1248.20	484/588	20.67	23.38	42, 43
	NCal	3467	207.80	105/145	74.96	93.63	6, 29, 30

Other field infestations: *B. frauenfeldi* in Kiribati (Waterhouse 1993). *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991).

Damage assessments: 90% of fruits infested by *B. facialis* and *B. kirki* in Tonga (Allwood and Leblanc 1997). 40–90% of fruits infested by *B. passiflorae* in Fiji (Allwood and Leblanc 1997). 45–99% of fruits infested by *B. kirki* in Samoa (Allwood and Leblanc 1997). 30% of fruits infested by *B. frauenfeldi* in Solomon Islands (Allwood and Leblanc 1997). 95% of fruits infested by *B. trilineola* in Vanuatu (Allwood and Leblanc 1997). 91.2% of fruits (large with pink flesh) infested by *B. frauenfeldi* in Micronesia (FSM), based on 262 fruits in 12 samples (Leblanc and Allwood 1997). 85.7% of fruits (large with white flesh) infested by *B. frauenfeldi* in Micronesia (FSM), based on 77 fruits in 5 samples (Leblanc and Allwood 1997). 31.1% of fruits (small with pink flesh) infested by *B. frauenfeldi* in Micronesia (FSM), based on 45 fruits in 3 samples (Leblanc and Allwood 1997). 75.0 (range among samples: 17–92)% of ripe fruits infested by *B. frauenfeldi* and *B. trivialis* in Papua New Guinea (Central Province), based on 208 fruits (Leblanc et al. 2001). 64.2 (range among samples: 28–96)% of ripe fruits (Vietnam white guava) infested by *B. frauenfeldi* (mainly) and *B. obliqua* in Papua New Guinea (East New Britain Province), based on 633 fruits (Leblanc et al. 2001). 61.5 (range among samples: 59–64)% of ripe fruits (Vietnam white guava) infested by *B. frauenfeldi* and *B. trivialis* in Papua New Guinea (Morobe Province), based on 200 fruits (Leblanc et al. 2001). 74.1 (range among samples: 52–82)% of ripe fruits (large fruits with pink flesh) infested by *B. frauenfeldi* and *B. obliqua* in Papua New Guinea (East New Britain Province), based on 139 fruits (Leblanc et al. 2001). 73.3% of ground fruits infested by *B. frauenfeldi* in Nauru, after *B. dorsalis* eradication, based on 60 fruits in 12 samples (RFFP data). 51% damage in Palau by *B. papayae* reported by Sengebau et al. (2005).

Note: The record of *B. xanthodes* on guava in Drew (1989) was not confirmed by subsequent surveys and is viewed as questionable.

MYRTACEAE: *Syzygium aqueum* (Burm. f.) Alston. Watery rose-apple.							
B. frauenfeldi	FSM	6295	98.05	38/39	57.16	59.70	20, 24
	Palau	126	1.07	3/4	219.63	252.69	
	PNG	1151	10.05	7/13	41.09	72.97	23
B. kirki	Samoa	1103	11.42	3/3	1.93	1.93	39
B. obliqua	PNG	1151	10.05	2/13	0.41	2.82	23

Damage assessments: 51.4% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 253 fruits in 10 samples (Leblanc and Allwood 1997).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
MYRTACEAE: *Syzygium cumini* (L.) Skeels. Java plum.							
B. melanotus	Cook	84	0.39	2	unknown	12.82	18
B. tryoni	FrPo[2]	95	0.68	1/6	0.54	4.82	42
MYRTACEAE: *Syzygium jambos* (L.) Alston. Rose-apple.							
B. curvipennis	NCal	3489	73.53	20/37	1.73	4.71	6, 29, 30
B. dorsalis	FrPo[2]	15	0.34	1/3	52.94	225.00	
B. facialis	Tonga	1494	21.20	18/22	17.97	19.31	27, 40
B. frauenfeldi	FSM	34	1.35	2/2	27.51	27.51	24
B. kirki	Samoa	53	3.97	5/5	13.35	13.35	39
	Tonga	1494	21.20	19/22	25.90	27.21	27, 40
B. melanotus	Cook	476	10.17	16	unknown	71.39	18
B. passiflorae	Fiji	823	17.38	21/37	46.55	79.63	37, 38
B. psidii	NCal	3489	73.53	33/37	40.17	42.52	6, 29, 30
B. tryoni	FrPo[2]	15	0.34	2/3	61.76	84.00	22, 42
	NCal	3489	73.53	24/37	49.84	118.88	6, 29, 30

Other field infestations: *B. kirki* and *B. perfusca* in French Polynesia (Leblanc and Putoa 2000). *B. trilineola* in Vanuatu (Allwood 2000a).
Note: Hardy and Adachi (1956) cited *S. jambos* as a host of *B. ochrosiae*, but did not provide details of rearing records or specimens label data. We therefore treat it as non-host. *P. cattleianum* was erroneously reported as host of *B. perfusca* in Leblanc et al. (2012, page 41), when the actual host was *Syzygium jambos*.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
MYRTACEAE: *Syzygium malaccense* (L.) Merr. & L.M. Perry. Malay-apple.							
B. dorsalis	FrPo[2]	158	8.20	3/7	21.46	35.77	42
B. facialis	Tonga	1724	65.60	16/22	9.01	10.36	40
B. frauenfeldi	FSM	329	15.93	10/13	62.64	69.89	20, 24
	Nauru	648	27.14	4/7	6.26	6.32	
	Palau	279	10.64	6/8	100.75	106.35	
	PNG	429	37.50	8/9	70.37	71.83	23
	Solo	833	13.80	22/37	61.67	118.52	17, 41
B. kirki	FrPo[2]	158	8.20	3/7	2.80	3.72	22, 42
	Samoa	462	10.87	6/6	10.12	10.12	39
	Tonga	1741	66.58	19/23	16.73	17.55	27, 40
B. obliqua	PNG	429	37.50	4/9	1.12	1.61	10, 23
B. passiflorae	Fiji	1397	40.63	24/42	11.74	16.81	16, 33, 37, 38
	W & F	19	1.50	1/2	13.33	29.41	
B. psidii	NCal	660	13.92	5/7	37.21	38.83	6, 29, 30
B. trilineola	Vanu	716	20.79	14/18	83.60	90.57	1
B. tryoni	FrPo[1]	13	1.35	1/1	2.22	2.22	22
	FrPo[2]	158	8.20	4/7	26.83	32.45	42
	NCal	660	13.92	3/7	4.31	27.52	6, 29, 30

Other field infestations: *B. curvipennis* in New Caledonia (Amice and Sales 1997).
Damage assessments: 62% of fruits infested by *B. passiflorae* in Fiji (Allwood and Leblanc 1997). 43.8% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 64 fruits in 4 samples (Leblanc and Allwood 1997).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
MYRTACEAE: *Syzygium megacarpum* (Craib) Rathakr. & N.C.Nair. Giant lau lau.							
B. passiflorae	Fiji	20	2.05	1/3	58.05	148.75	
MYRTACEAE: *Syzygium samarangense* (Blume) Merr. & L.M.Perry. Water apple.							
B. frauenfeldi	FSM	7010	145.00	37/41	36.01	42.50	20, 24
	Palau	444	14.95	4/8	77.39	125.62	
MYRTACEAE: *Syzygium* sp.							
OLACACEAE: *Ximenia americana* L. Yellow plum.							
B. curvipennis	NCal	571	6.27	6/7	103.03	103.03	
B. tryoni	NCal	571	6.27	1/7	0.80	4.35	
OXALIDACEAE: *Averrhoa carambola* L. Starfruit.							
B. curvipennis	NCal	454	35.42	2/20	0.88	9.23	29, 30
B. dorsalis	FrPo[2]	1006	69.06	17/51	2.77	8.29	22, 42, 43
B. frauenfeldi	FSM	695	63.40	13/36	4.29	7.19	20, 24
	Palau	676	33.56	1/17	0.63	48.84	
	PNG	4987	370.51	36/113	30.80	59.94	23
	Solo	726	61.43	7/60	0.57	5.66	17, 41
B. kirki	FrPo[1]	3977	284.75	30/83	1.26	2.35	22
	FrPo[2]	1006	69.06	2/51	0.04	2.05	42
B. melanotus	Cook	31	2.30	2	unknown	1.74	18
B. papayae	Palau	676	33.56	11/17	50.86	63.11	
	PNG	3991	304.18	1/87	< 0.01	1.56	23
B. passiflorae	Fiji	3189	167.44	3/157	0.04	1.97	
B. psidii	NCal	454	35.42	1/20	0.06	0.20	29, 30
B. *trilineola*	Vanu	39	2.29	1/2	15.72	180.00	1
B. trivialis	PNG	3991	304.18	1/87	< 0.01	0.10	
B. tryoni	FrPo[1]	3977	284.75	48/83	5.25	7.34	22
	FrPo[2]	1006	69.06	22/51	7.70	21.25	42, 43
	NCal	454	35.42	14/20	18.69	21.35	29, 30

Field infestation: *B. trivialis* in Papua New Guinea (Dori et al. 1993, Leblanc et al. 2001).

Other field infestation: *B. ochrosiae* in CNMI (Hardy and Adachi 1956).

Other field infestation: *B. kirki* in Tonga (Litsinger et al. 1991, Tupou et al. 2001).
Damage assessments: 17.8% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 236 fruits in 13 samples (Leblanc and Allwood 1997). 13.8 (range among samples: 0.8–38)% of ripe fruits infested by *B. frauenfeldi* in Papua New Guinea (East New Britain Province), based on 596 fruits (Leblanc et al. 2001). 18.7 (range among samples: 0–74)% of ripe fruits infested by *B. frauenfeldi* (mainly) and *B. papayae* (bred from 3 fruits) in Papua New Guinea (Central Province), based on 214 fruits (Leblanc et al. 2001). 82.0 (range among samples: 10–98)% of ripe fruits (Malaysian carambola) infested by *B. frauenfeldi* in Papua New Guinea (Central Province), based on 896 fruits (Leblanc et al. 2001). 69–73% damage by *B. papayae* in Palau reported by Sengebau et al. (2005).
Laboratory host status tests: *B. xanthodes* was bred from damaged but not from intact carambola exposed to gravid females in Samoa.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
PASSIFLORACEAE: *Passiflora edulis* Sims. Purple granadilla.							
B. dorsalis	FrPo[2]	159	10.08	12/31	28.37	66.05	42, 43
B. facialis	Tonga	340	25.41	1/21	0.04	5.00	
B. frauenfeldi	PNG	390	22.40	1/18	0.09	1.77	23
B. kirki	Samoa	6	3.76	1/1	0.27	0.27	39
B. passiflorae	Fiji	620	41.52	1/52	0.02	0.61	
B. tryoni	FrPo[2]	159	10.08	1/31	0.20	6.67	12, 22, 42
	NCal	243	30.09	1/15	0.03	0.13	29, 30
B. xanthodes	Tonga	340	25.41	1/21	0.08	1.75	40

Other field infestation: *B. kirki* in Tonga (Litsinger et al. 1991, Tupou et al. 2001).
Note: Cochereau (1970) observed that *B. psidii* and *B. curvipennis* readily oviposit into the skin of passionfruit, but first instar larvae are unable to penetrate through the thick skin.

PASSIFLORACEAE: *Passiflora foetida* L. Wild waterlemon.							
B. bryoniae	PNG	881	1.23	3/13	2.44	7.14	10, 23, 36
B. facialis	Tonga	1562	2.97	2/18	1.01	9.68	40

Other field infestation: *B. curvipennis* in New Caledonia (Cochereau 1970).

PASSIFLORACEAE: *Passiflora laurifolia* L. Yellow granadilla.							
B. dorsalis	FrPo[2]	94	2.70	1/2	0.74	2.47	
B. tryoni	FrPo[2]	94	2.70	1/2	8.15	27.16	

PASSIFLORACEAE: *Passiflora ligularis* Juss. Sweet granadilla.							
B. facialis	Tonga	2063	56.54	1/54	0.02	0.61	40
B. xanthodes	Tonga	2067	56.65	12/55	12.11	34.49	40

PASSIFLORACEAE: *Passiflora quadrangularis* L. Giant granadilla.							
B. dorsalis	FrPo[2]	10	7.79	1/3	0.26	0.38	
B. facialis	Tonga	22	28.58	1/11	0.07	2.30	27, 40
B. kirki	FrPo[1]	16	12.66	1/2	0.16	0.57	22, 42
B. tryoni	FrPo[1]	16	12.66	2/2	3.79	3.79	22, 42
	NCal	1	1.34	1/1	2.24	2.24	29, 30
B. xanthodes	Samoa	2	0.51	1/1	94.12	94.12	39

Other field infestations: *B. passiflorae* in Fiji (Simmons 1936, Hinckley 1965). *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991, Tupou et al. 2001). *B. psidii* in New Caledonia (Drew 1989, Waterhouse 1993). *B. xanthodes* in Fiji (Simmons 1936, Hinckley 1965) and Tonga (Litsinger et al. 1991, Tupou et al. 2001).

RHAMNACEAE: *Zizyphus mauritiana* Lam. Indian jujube.							
B. curvipennis	NCal	303	5.21	2/3	53.17	55.40	29, 30
B. tryoni	NCal	303	5.21	3/3	108.64	108.64	6, 29, 30

ROSACEAE: *Chrysobalanus icaco* L. Cocoplum.							
B. passiflorae	Fiji	445	7.28	3/11	9.07	30.00	

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
ROSACEAE: *Eriobotrya japonica* (Thunb.) Lindl. Loquat.							
B. curvipennis	NCal	287	4.24	1/8	0.47	4.00	29, 30
B. melanotus	Cook	18	0.25	1	unknown	12.00	
B. tryoni	NCal	287	4.24	6/8	95.52	125.00	6, 29, 30
ROSACEAE: *Fragaria vesca* L. Strawberry.							
B. curvipennis	NCal	939	3.72	2/2	3.76	3.76	29, 30
B. psidii	NCal	939	3.72	1/2	0.27	0.40	
B. tryoni	NCal	939	3.72	2/2	153.23	153.23	29, 30
ROSACEAE: *Prunus domestica* L. Plum.							
B. curvipennis	NCal	5	0.12	1/1	216.67	216.67	29, 30
B. tryoni	FrPo[1]	153	1.00	1/1	16.00	16.00	42
	NCal	5	0.12	1/1	16.67	16.67	29, 30
ROSACEAE: *Prunus persica* (L.) Stokes. Peach.							
B. curvipennis	NCal	2084	74.89	16/28	3.69	4.79	8, 29, 30
B. psidii	NCal	2084	74.89	18/28	57.11	66.00	6, 8, 29, 30
B. tryoni	NCal	2084	74.89	20/28	36.84	42.71	6, 29, 30
ROSACEAE: *Prunus simonii* Carrière. Nectarine.							
B. curvipennis	NCal	244	6.85	4/5	52.82	57.89	29, 30
B. psidii	NCal	244	6.85	4/5	47.28	51.82	
B. tryoni	NCal	244	6.85	4/5	10.94	11.99	29, 30
RUBIACEAE: *Coffea arabica* L. Arabica coffee.							
B. melanotus	Cook	560	0.74	1	unknown	1.35	

Other field infestations: *B. curvipennis* in New Caledonia (Cochereau 1970).

Laboratory host status tests: *B. kirki* was bred from damaged strawberry exposed to gravid females in Samoa.

Other field infestation: *B. psidii* in New Caledonia (Cochereau 1970).

Other field infestations: *B. facialis* in Tonga (Drew 1989). *B. kirki* in unspecified country (Drew 1989). *B. trivialis* in Papua New Guinea (Drew 1989, Leblanc et al. 2001).

Laboratory host status tests: *B. facialis* was bred from nectarine exposed to gravid females in Tonga.

Other field infestation: *B. curvipennis* in New Caledonia (Cochereau 1970).

Field infestation: *B. passiflorae* in Fiji (Simmonds 1936).

Field infestations: *B. curvipennis* and *B. tryoni* in New Caledonia (Mademba-Sy 2000, Mille 2008).

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
RUBIACEAE: *Morinda citrifolia* L. Noni.							
B. melanotus	Cook	69	5.10	5	unknown	7.45	18
B. tryoni	FrPo[1]	736	66.68	1/29	0.03	1.74	22
	NCal	54	1.36	1/3	1.47	1.82	29, 30

Other field infestation: *B. kirki* in French Polynesia (Leblanc et al. 2012) and Samoa (Tunupopo Laiti et al. 2002, Leblanc et al. 2012).

RUTACEAE: *Casimiroa edulis* La Llave. White sapote.

B. curvipennis	NCal	24	2.44	1/2	2.87	4.55	29
B. tryoni	NCal	24	2.44	2/2	9.43	9.43	29, 30

RUTACEAE: *Citrus aurantiifolia* (Christm.) Swingle. Lime.

B. tryoni	FrPo[1]	366	38.77	3/14	0.39	1.88	
	FrPo[2]	28	1.23	1/3	5.69	13.73	

Laboratory host status tests: *B. passiflorae* or *B. xanthodes* in Fiji, and *B. xanthodes* in Samoa were not bred from damaged West Indian lime exposed to gravid females, but *B. kirki* was in Samoa. In Micronesia (FSM), *B. frauenfeldi* was bred from damaged but not from intact Kosraean lime.
Other field infestation: *B. dorsalis* in French Polynesia (Leblanc et al. 2012).
Note: Records of *B. kirki* and *B. passiflorae* (sp. nr.) in Litsinger et al. (1991) are dubious and were not confirmed in more recent fruit surveys in Tonga (6 samples, 117 fruits).

RUTACEAE: *Citrus aurantium* L. Sour orange.

B. facialis	Tonga	419	28.90	3/19	1.69	4.30	40
B. frauenfeldi	FSM	450	41.83	2/18	0.50	1.87	24
	Solo	317	25.46	1/16	0.08	2.86	17
B. papayae	Palau	31	3.04	1/3	1.97	2.82	

Other field infestation: *B. passiflorae* in Fiji (Simmonds 1936).
Note: There is a plausible record of *B. melanotus* on *C. aurantium* in Bezzi (1928), but cited by White and Elson-Harris (1992) as requiring confirmation.

RUTACEAE: *Citrus japonica* Thunb. Round kumquat.

B. curvipennis	NCal	90	1.64	1/2	1.22	1.35	
B. frauenfeldi	Solo	140	2.74	1/5	1.09	6.67	17, 41
B. passiflorae	Fiji	4590	93.51	40/146	5.17	15.46	37, 38
B. trilineola	Vanu	258	5.58	1/9	0.18	1.25	1
B. tryoni	NCal	90	1.64	1/2	27.44	30.41	
B. xanthodes	Fiji	4590	93.51	1/146	0.51	16.84	

Damage assessments: 60% of fruits infested by *B. passiflorae* in Fiji (Allwood and Leblanc 1997).

RUTACEAE: *Citrus latifolia* (Tanaka ex Yu. Tanaka) Tanaka. Tahiti lime.

B. curvipennis	NCal	284	34.08	1/33	0.03	1.35	29, 30
B. dorsalis	FrPo[2]	178	15.48	3/16	1.23	12.50	42
B. tryoni	FrPo[2]	178	15.48	3/16	0.97	4.46	42
	NCal	284	34.08	2/33	0.35	6.19	6, 29, 30

Laboratory host status tests: *B. xanthodes* and *B. kirki* were bred from damaged fruits exposed to gravid females in Samoa.
Note: The French Polynesia record of *B. kirki* on *C. latifolia* in Vargas et al. (2007) is erroneous.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
RUTACEAE: *Citrus limon* (L.) Burm. F. Lemon.							
B. passiflorae	Fiji	2292	279.05	9/219	0.17	4.55	
B. trilineola	Vanu	847	104.85	1/71	0.01	0.63	1
RUTACEAE: *Citrus maxima* (Burm.) Osbeck. Pomelo.							
B. curvipennis	NCal	140	57.28	1/28	0.35	17.24	6, 29, 30
B. distincta	Fiji	320	187.04	1/79	0.01	0.51	
B. dorsalis	FrPo[1]	1168	780.04	5/130	0.04	0.53	22
	FrPo[2]	658	304.47	31/84	1.27	2.64	42
B. facialis	Tonga	508	261.53	17/62	3.33	8.85	27, 40
B. frauenfeldi	PNG	194	147.90	4/28	0.14	1.21	23
	Solo	68	40.79	1/30	0.44	9.47	17
B. kirki	FrPo[1]	1168	780.04	21/130	0.20	0.76	22
	FrPo[2]	658	304.47	6/84	0.10	0.58	42
B. melanotus	Cook	28	15.71	4	unknown	1.72	18
B. papayae	PNG	173	133.60	1/25	0.10	1.29	23
B. passiflorae	Fiji	320	187.04	21/79	1.25	3.19	37
B. psidii	NCal	140	57.28	1/28	0.33	16.38	6, 29, 30
B. trilineola	Vanu	720	328.31	1/109	0.05	8.00	1, 44
B. tryoni	FrPo[1]	1168	780.04	56/130	1.13	2.16	22
	FrPo[2]	658	304.47	15/84	0.92	1.34	42
	NCal	140	57.28	9/28	3.88	11.83	6, 29, 30
RUTACEAE: *Citrus x microcarpa* Bunge. Calamondin orange.							
B. frauenfeldi	FSM	759	11.70	4/15	3.50	11.99	24
	Palau	237	5.05	1/5	2.97	16.30	
B. papayae	Palau	237	5.05	2/5	6.73	20.00	32
RUTACEAE: *Citrus paradisi* Macfad. Grapefruit.							
B. curvipennis	NCal	82	27.98	1/18	0.71	10.00	6, 29, 30
B. frauenfeldi	Solo	49	20.06	2/16	0.95	12.34	17
B. melanotus	Cook	31	11.34	4	unknown	0.97	18
B. passiflorae	Fiji	600	185.11	13/96	1.04	8.13	
B. tryoni	NCal	82	27.98	2/18	1.64	17.69	6, 29, 30

Other field infestation: *B. facialis* in Tonga (Litsinger et al. 1991).
Laboratory host status tests: *B. xanthodes* was bred from damaged Meyer lemon exposed to gravid females in Fiji.

Other field infestations: *B. kirki* in Tonga (Leblanc et al. 2012). *B. xanthodes* in Fiji (Simmonds 1936).

Damage assessments: 19% damage by *B. papayae* in Palau, reported by Sengebau et al. (2005).

Other field infestations: *B. facialis* in Tonga (Litsinger et al. 1991, Tupou et al. 2001). *B. trivialis* in Papua New Guinea (Drew 1989, Dori et al. 1993, Tenakanai 1997, Leblanc et al. 2001).
Laboratory host status tests: *B. xanthodes* and *B. kirki* were bred from damaged grapefruit exposed to gravid females in Samoa.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
RUTACEAE: *Citrus reticulata* Blanco. Tangerine.							
B. curvipennis	NCal	240	16.11	2/18	0.62	4.81	6, 29, 30
B. dorsalis	FrPo[2]	325	33.98	6/21	1.41	5.57	42
B. facialis	Tonga	2212	128.68	14/44	2.39	5.87	27, 40
B. frauenfeldi	FSM	1066	93.15	18/34	3.15	4.00	20, 24
B. kirki	FrPo[2]	325	33.98	1/21	0.21	1.57	22, 42
	Tonga	2400	138.90	2/49	0.12	1.43	27, 40
B. melanotus	Cook	15	2.25	1	unknown	0.89	18
B. passiflorae	Fiji	1630	145.50	13/137	0.49	2.72	33, 37, 38
B. trilineola	Vanu	692	49.14	1/46	0.26	20.63	
B. tryoni	FrPo[1]	20	1.38	1/2	4.35	40.00	22
	FrPo[2]	325	33.98	4/21	0.65	3.36	42
	NCal	240	16.11	2/18	8.19	89.19	6, 29, 30
B. xanthodes	Fiji	1630	145.50	2/137	0.10	13.16	
	Tonga	2400	138.90	1/49	0.01	0.25	27, 40

Other field infestations: *B. frauenfeldi* in Papua New Guinea (Leblanc et al. 2001). *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991, Tupou et al. 2001).
Damage assessments: 20.3% of fruits (Satsuma tangerine) infested by *B. frauenfeldi* in Micronesia (FSM), based on 187 fruits in 10 samples (Leblanc and Allwood 1997). 0.6% of ripe fruits infested by *B. frauenfeldi* in Papua New Guinea (East New Britain Province), based on 354 fruits (Leblanc et al. 2001).

RUTACEAE: *Citrus sinensis* (L.) Osbeck. Sweet orange.							
B. curvipennis	NCal	204	36.45	1/35	0.11	10.00	29, 30
B. dorsalis	FrPo[1]	389	80.88	1/20	0.09	3.68	22
	FrPo[2]	382	79.09	7/38	1.66	7.40	42
B. facialis	Tonga	819	116.16	20/47	3.32	6.62	27, 40
B. frauenfeldi	FSM	464	113.73	10/33	0.75	1.54	20, 24
B. kirki	FrPo[1]	389	80.88	2/20	0.05	0.50	22
	FrPo[2]	382	79.09	1/38	0.03	1.08	42
	Tonga	962	141.78	2/61	0.06	2.06	27, 40
B. melanotus	Cook	94	25.58	8	unknown	3.13	18
B. passiflorae	Fiji	1915	311.78	14/221	0.26	2.67	33, 37
*B. passiflorae**	Tonga	143	25.62	3/14	1.76	10.03	40
B. trilineola	Vanu	383	56.65	1/30	0.58	7.59	1, 44
B. trivialis	PNG	412	56.24	1/11	0.07	0.36	23
B. tryoni	FrPo[1]	389	80.88	7/20	0.79	2.56	22
	FrPo[2]	382	79.09	1/38	0.04	4.35	42
	NCal	204	36.45	2/35	0.08	0.96	29, 30
B. xanthodes	Tonga	962	141.78	1/61	0.13	11.18	

*(sp.nr.)
Other field infestation: *B. frauenfeldi* in Solomon Islands (Vagalo et al. 1997).
Damage assessments: 4.0% of fruits infested by *B. frauenfeldi* in Micronesia (FSM), based on 394 fruits in 27 samples (Leblanc and Allwood 1997). 2.6 (range among samples: 0–9)% of ripe fruits infested by *B. trivialis* in Papua New Guinea (Highlands region), based on 195 fruits (Leblanc et al. 2001).

RUTACEAE: *Citrus trifoliata* L. Trifoliate orange.							
B. dorsalis	FrPo[2]	2	0.51	1/1	17.65	17.65	42

Note: The records of *B. tryoni* and *B. kirki* in Vargas et al. (2007) are erroneous.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
RUTACEAE: *Clymenia polyandra* (Tanaka) Swingle.							
B. frauenfeldi	PNG	92	9.68	4/4	40.08	40.08	23
SAPINDACEAE: *Litchi chinensis* Sonner. Lychee.							
B. dorsalis	FrPo[2]	117	1.79	2/4	36.31	42.76	
B. tryoni	FrPo[2]	117	1.79	1/4	1.68	8.33	
SAPINDACEAE: *Nephelium lappaceum* L. Rambutan.							
B. dorsalis	FrPo[2]	50	1.26	1/5	29.37	370.00	
B. tryoni	FrPo[2]	50	1.26	1/5	4.76	60.00	

Laboratory host status tests: No *B. kirki* progeny was bred from damaged rambutan exposed to gravid females in Samoa.

SAPINDACEAE: *Pometia pinnata* J. R. Forst. & G. Forst. Pacific lychee.							
B. atramentata	PNG	359	10.86	3/5	27.62	30.83	23
B. dorsalis	FrPo[1]	197	7.05	4/12	7.94	22.86	
	FrPo[2]	1109	37.40	28/39	173.29	194.98	42, 43
B. frauenfeldi	PNG	379	11.87	2/6	3.37	5.67	23, 36
B. kirki	FrPo[1]	197	7.05	3/12	3.55	9.43	12, 22, 42
	Samoa	16	0.29	1/1	200.00	200.00	39
	Tonga	1641	47.53	1/22	9.22	235.29	
B. lineata	PNG	20	1.01	1/1	187.13	187.13	23, 31
B. passiflorae	Fiji	135	3.32	4/10	22.59	35.55	16, 33, 37, 38
*B. passiflorae**	Tonga	275	11.29	1/4	0.18	1.07	
B. quadrisetosa	Solo	38	1.13	4/4	34.51	84.78	17
	Vanu	211	6.20	8/17	28.55	70.52	1
B. trilineola	Vanu	211	6.20	15/17	0.81	100.00	1
B. tryoni	FrPo[1]	197	7.05	5/12	51.06	105.88	12, 22
	FrPo[2]	1109	37.40	11/39	1.95	3.40	42, 43
	NCal	27	2.12	2/2	103.77	103.77	6, 29, 30

*(sp.nr.)

Other field infestation: *B. facialis* in Tonga (Litsinger et al. 1991).

Note: The unconfirmed records of *B. simulata*, *B. distincta* and *B. xanthodes* on *P. pinnata*, all cited by White and Elson-Harris (1992), have not been confirmed by subsequent host fruit surveys and are therefore treated as unlikely.

SAPOTACEAE: *Chrysophyllum cainito* L. Star-apple.							
B. distincta	Samoa	52	5.53	1/1	0.18	0.18	39
	Tonga	230	25.40	1/9	0.55	2.41	40
B. dorsalis	FrPo[2]	133	30.64	6/31	1.01	7.49	42
B. facialis	Tonga	230	25.40	2/9	1.38	4.06	40
B. frauenfeldi	FSM	137	30.70	1/5	0.16	0.27	24
B. passiflorae	Fiji	371	25.56	3/32	0.82	11.80	16, 38
B. tryoni	FrPo[2]	133	30.64	5/31	0.23	1.22	22, 42, 43
	NCal	28	1.44	1/1	29.17	38.18	29, 30
B. xanthodes	Tonga	230	25.40	1/9	1.93	17.31	

Other field infestations: *B. distincta* in Fiji (Drew 1989). *B. frauenfeldi* in Papua New Guinea (Dori et al. 1993, Tenakanai 1997, Leblanc et al. 2001).

Note: The record of *B. kirki* in Leblanc et al. (2000) and Vargas et al. (2007) is erroneous.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
SAPOTACEAE: *Manilkara zapota* (L.) P. Royen. Sapodilla.							
B. distincta	Fiji	945	71.48	12/72	2.00	9.81	37, 38
	Tonga	248	22.52	4/10	3.60	5.78	40
B. facialis	Tonga	248	22.52	2/10	0.27	0.67	40
B. frauenfeldi	FSM	27	1.40	1/4	7.14	31.25	24
	Solo	60	3.79	2/6	26.91	56.67	17, 41
B. melanotus	Cook	4	0.52	1	unknown	1.92	
B. passiflorae	Fiji	945	71.48	11/72	0.84	6.10	
Other field infestations: *B. frauenfeldi* in Papua New Guinea (Dori et al. 1993, Tenakanai 1997, Leblanc et al. 2001). *B. distincta* in Samoa (Tunupopo Laiti et al. 2002).							
SAPOTACEAE: *Pouteria caimito* (Ruiz & Pav.) Radlk. Abiu.							
B. distincta	Samoa	6	1.05	1/5	8.57	26.47	
B. dorsalis	FrPo[2]	131	25.91	5/11	23.89	28.79	42, 43
B. frauenfeldi	PNG	100	26.30	1/5	0.27	1.17	23
B. kirki	Samoa	6	1.05	1/5	19.05	28.57	39
B. tryoni	FrPo[2]	131	25.91	1/11	0.35	18.37	42
B. xanthodes	Samoa	6	1.05	2/5	5.71	8.57	39
SAPOTACEAE: *Pouteria campechiana* (Kunth) Baehni. Canistel.							
B. frauenfeldi	PNG	131	17.69	4/8	6.84	10.01	23
Laboratory host status tests: *B. kirki* was bred from damaged canistel exposed to gravid females in Samoa.							
SOLANACEAE: *Capsicum annuum* L. Chilli pepper. (= *C. frutescens*).							
B. bryoniae	PNG	7440	5.24	12/34	72.14	110.36	9, 10, 23, 36
B. dorsalis	FrPo[2]	16	1.76	1/3	3.41	750.00	
B. facialis	Tonga	11934	16.27	6/37	25.63	74.60	10, 40

Other field infestations: *B. kirki* (country not specified) (Drew 1989). *B. passiflorae* in Fiji (Hinckley 1965). *B. trivialis* in Papua New Guinea (Morobe Province) (Drew 1989, Dori et al. 1993, Tenakanai 1997, Leblanc et al. 2001).

Damage assessments: 89–97% of fruits infested by *B. facialis* in Tonga (Allwood and Leblanc 1997). Damage on Birdseye chilli by *B. bryoniae* can be as high as 80% in Papua New Guinea (Morobe Province) (Leblanc et al. 2001).

Laboratory host status tests: Extensive host status testing was carried on different varieties of chilli peppers exposed to gravid females in several countries. In Fiji, *B. passiflorae* was bred from damaged and intact, but *B. xanthodes* was not bred at all on the "Small White" chillis. In Fiji, Long Cayenne chillis were infested by both species in the lab, whereas intact Hot Rod and Red Fire chillis were not hosts to either species. In Tonga, *B. xanthodes* was bred from damaged chillis of the varieties Birdseye, Cayenne, Hot Rod, and Red Fire. In Samoa, *B. xanthodes* and *B. kirki* were bred from damaged and intact Birdseye chilli, *B. xanthodes* was bred from damaged and intact Big Star and Hot Thai chillis, and *B. kirki* was bred from damaged Big Star and Hot Thai chillis.

Note: *B. bryoniae* was bred regularly from Birdseye chilli in Papua New Guinea. The record of *B. simulata* bred from chillis in Solomon Islands (White and Elson-Harris 1992, Waterhouse 1993) is dubious and was not confirmed in subsequent host fruit surveys.

Fly species	Country	Fruits (no.)	Weight (kg)	Samples infested	Flies/kg All	Flies/kg Infested	References
SOLANACEAE: *Capsicum annuum* L. Bell pepper.							
B. curvipennis	NCal	169	11.55	3/9	3.29	12.84	6, 29, 30
B. facialis	Tonga	1516	68.03	17/39	7.39	12.49	27, 40
B. papayae	Palau	11	0.54	1/2	1.85	7.14	
B. tryoni	NCal	169	11.55	4/9	4.76	18.58	6, 29, 30
SOLANACEAE: *Lycopersicon esculentum* Mill. Tomato.							
B. dorsalis	FrPo[2]	310	32.83	15/36	13.95	37.00	42, 43
B. facialis	Tonga	2156	95.01	3/33	0.18	2.44	10, 27, 40
B. kirki	FrPo[1]	103	12.83	1/6	0.16	1.48	
	FrPo[2]	310	32.83	2/36	0.09	1.22	42
B. melanotus	Cook	119	6.42	4	unknown	7.48	18
B. tryoni	FrPo[1]	103	12.83	3/6	1.09	3.07	22
	FrPo[2]	310	32.83	8/36	13.34	44.24	42
	NCal	127	12.30	3/9	14.31	18.07	29, 30
B. xanthodes	Tonga	2156	95.01	3/33	0.09	0.43	27, 40
SOLANACEAE: *Solanum melongena* L. Eggplant.							
B. facialis	Tonga	149	23.37	2/12	1.93	10.30	
B. kirki	FrPo[1]	92	14.41	1/8	0.14	0.27	22
B. melanotus	Cook	9	2.31	1	unknown	2.16	
B. tryoni	FrPo[1]	92	14.41	1/8	0.21	0.41	22, 42
	NCal	38	3.86	1/3	1.81	2.26	29, 30

Other field infestations: *B. kirki* and *B. xanthodes* in Tonga (Litsinger et al. 1991), but the *B. xanthodes* record is dubious and was not confirmed in more recent host fruit surveys.
Damage assessments: 97–100% of fruits infested by *B. facialis* in Tonga (Allwood and Leblanc 1997).
Laboratory host status tests: *B. xanthodes* and *B. passiflorae* were bred from damaged peppers exposed to gravid females in Fiji, as were *B. trilineola* in Vanuatu and *B. xanthodes* in Samoa.
Note: The record of *B. xanthodes* on sweet pepper, published in Litsinger et al. (1991), was not confirmed in more recent fruit surveys in Tonga (39 samples, 2955 fruits).

Other field infestations: *B. atrisetosa* in Papua New Guinea (Drew 1989, Dori et al. 1993, Tenakanai 1997, Leblanc et al. 2001). *B. cucurbitae* in CNMI (Wong et al. 1989). *B. curvipennis* in New Caledonia (Cochereau 1970). *B. xanthodes* in Fiji (Hinckley 1965).
Laboratory host status tests: *B. trilineola* was bred from damaged and intact tomatoes (Money Maker variety) exposed to gravid females in Vanuatu.
Note: Cochereau (1970) reported that *B. curvipennis* oviposited in feeding punctures produced by fruit piercing moth.

Other field infestation: *B. passiflorae* (sp. nr.) in Tonga (Litsinger et al. 1991), though this record was treated as questionable by White and Elson-Harris (1992).
Laboratory host status tests: *B. passiflorae, B. trilineola*, *B. facialis* and *B. kirki* (in Samoa) were bred from intact eggplant exposed to gravid females. *B. xanthodes* was bred from damaged and intact eggplant in Tonga and Samoa, but not from intact eggplant in Fiji. The eggplant varieties and stages of maturity tested in each country were not specified. However, *B. trilineola*, *B. passiflorae* and *B. xanthodes* were never bred from field collected eggplants in Vanuatu (4 samples, 38 fruits), Fiji (106 samples, 2056 fruits), or Tonga (12 samples, 170 fruits).

VITACEAE: *Vitis vinifera* L. Wine grape.

Field infestation: *B. psidii* in New Caledonia (Cochereau 1970).

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