

N. bruchi**N. eichhorniae***Chlorophytum comosum* (Thunb.)

Jacques [spider plant]

China (2,6) China (2,6)

Crinum asiaticum L. [giant lily]

Thailand (9)

Crinum pedunculatum R. Br. [swamp lily]

Australia (1,5)

Dianella caerulea Sims. [blue flax lily]

Australia (1,5)

Hymenocallis sp. [spiderlily]

India (3,8) India (3,8)

Lilium sp.

Indonesia (11)

Protasparagus plumosus (Baker) Oberm. = *Asparagus setaceus* (Kunth) Jessop [climbing asparagus fern]

China (2,6) China (2,6)

Malvaceae*Abelmoschus esculentus* (L.) Moench = *Hibiscus esculentus* [okra, bhendi]

India (3,8) India (3,8)

Thailand (9)

Gossypium arboreum L. [cotton]

India (3,8) Australia (1,5)

India (3,8)

Gossypium barbadense L. [sea island cotton]

Egypt (11) Egypt (11)

Gossypium herbaceum L. [desi cotton]

China (2,3,6,8,10) China (2,3,6,8,10)

Gossypium hirsutum L. [cotton]

Zimbabwe (9) Zimbabwe (9)

Gossypium sp. [cotton]

Indonesia (11)

Thailand (9)

N. bruchi**N. eichhorniae***Hibiscus sabdariffa* L. [rosella]

Indonesia (11)

Thailand (9)

Hibiscus syriacus L. [Syrian hibiscus]

China (2,3,6,8,10) China (2,3,6,8,10)

Marantaceae*Maranta* sp. [arrowroot]

Kenya (5,8)

Marsileaceae*Marsilea crenata* C. Presl. [water clover]

Thailand (9)

Menyanthaceae*Nymphoides indica* (L.) Kuntze [water snowflake]

Australia (1,5)

Vietnam (9)

Mimosaceae*Acacia podalyriifolia* Cunn. ex G. Don [Queensland silver wattle]

Australia (1,5)

Albizia lebbek (L.) Benth. [Indian siris]

India (3,8) India (3,8)

Mimosa pigra L. [giant sensitive plant]

Thailand (9)

Neptunia natans [neptunia]

Thailand (9)

Neptunia oleraceae Lour [watercress]

Vietnam (9)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Moraceae

Artocarpus heterophyllus Lam. =
Manilkara apota [jack-fruit]
 India (3,8) India (3,8)

Ficus carica L. [fig]
 India (3,8) India (3,8)

Morus alba L. [white mulberry]
 Zimbabwe (9) Zimbabwe (9)

Musaceae

Musa paradisiaca (L.) [banana]
 Australia (1,5) Egypt (11)
 Egypt (11) India (1,3,5,8)
 India (1,3,5,8) Uganda (4,9)
 Indonesia (11)
 Malaysia (5)
 Uganda (4,9)

Musa sapientum L. [banana]
 Thailand (9)

Musa sp. [banana]
 Vietnam (9) Zimbabwe (9)
 Zimbabwe (9)

Myrtaceae

Eucalyptus saligna Sm. [Sydney blue gum]
 Australia (1,5) Australia (1,5)

Eucalyptus tereticornis Sm. [forest red gum]
 Australia (1,5) Australia (1,5)

Eugenia sp. [roseapple]
 Thailand (9)

Psidium guajava L. [guava]
 India (3,8) India (3,8)
 Thailand (9)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Nelumbonaceae

Nelumbo lutea (Willd. Pers.)
 Argentina/USA (4,5,8)

Nelumbo nucifera Gaertner [Indian lotus, sacred lotus]
 China (2,3,6,8,10) China (2,3,6,8,10)
 Thailand (9)
 Vietnam (9)

Nelumbium nelumbo [lotus]
 Indonesia (11)

Nymphaeaceae

Nuphar advena (Aiton) Aiton f.
 [waterlily, spatterdock]
 Argentina/USA (4,5,8)

Nymphaea lotus L. [lotus]
 Thailand (9)

Nymphaea sp. [waterlily]
 India (3,8) Argentina/USA (4,5,8)
 Indonesia (11) India (3,8)

Oleaceae

Jasminum nudiflorum Lindl. [jasmine]
 India (3,8) India (3,8)

Jasminum sambac Ait. [Arabian jasmine]
 Thailand (9)

Onagraceae

Jussiaea repens L. = *Ludwigia adscendens* (L.) Hara
 [creeping water primrose]
 Thailand (9)

Ludwigia peploides (Kunth) Raven [water primrose]
 Argentina (3,8) Australia (1,5)
 Australia (1,5)
 Vietnam (9)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Orchidaceae

Dendrobium sp. [orchid]

Australia (1,5)

Malaysia (5)

Thailand (9)

Vanilla fragrans Andrews = *V. planifolia* Andr [vanilla orchid]

India (1,3,5,8)

India (1,3,5,8)

Palmae

Areca catechu L. [betel nut]

India (3,8)

India (3,8)

Elaeis guineensis Jacq. [oil palm]

Malaysia (5)

Philydraceae

Philydrum lanuginosum Banks & Sol. [frogsmouth]

Australia (1,5,7)

Pinaceae

Cedrus libani A. Rich. [taurus cedar]

Egypt (11)

Egypt (11)

Piperaceae

Peperomia sp

India (3,8)

India (3,8)

Poaceae

Bambusa blumeana [bamboo]

Thailand (9)

Bambusa spp.

Vietnam (9)

Bambusa tulda Roxb. [bamboo]

India (3,8)

India (3,8)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Brachiaria mutica (Forsskal) Stapf [paragrass]

Thailand (9)

Eleusine coracana (L.) Gaertn. [ragi, Indian millet]

India (3,8)

India (3,8)

Eleusine indica (L.) Gaertner [crowsfoot grass]

Zimbabwe (9)

Zimbabwe (9)

Oryza sativa L. [rice]

Argentina (8)

Argentina/USA (4,5,8)

Australia (1,5)

Australia (1,5)

China (2,3,6,8,10)

China (2,3,6,8,10)

India (3,8)

India (3,8)

Indonesia (11)

Uganda (4,9)

Malaysia (5)

Thailand (9)

Uganda (4,9)

Vietnam (9)

Saccharum officinarum L. [sugarcane]

Argentina (1,5,8)

Argentina/USA (4,5,8)

India (3,8)

India (3,8)

Thailand (9)

Zimbabwe (9)

Zimbabwe (9)

Sorghum bicolor (L.) Moench = *S. vulgare* (Pers.)

[sorghum, jowar]

India (3,8)

India (3,8)

Thailand (9)

Zimbabwe (9)

Zimbabwe (9)

Triticum aestivum L. = *T. vulgare* [wheat]

Australia (1,5)

Australia (1,5)

China (2,3,6,8,10)

China (2,3,6,8,10)

Egypt (11)

Egypt (11)

India (3,8)

India (3,8)

Zimbabwe (9)

Zimbabwe (9)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

<i>Zea mays</i> L. [maize]	
Australia (1,5)	Australia (1,5)
China (2,3,6,8,10)	China (2,3,6,8,10)
Egypt (11)	Egypt (11)
India (3,8)	India (3,8)
Indonesia (11)	Zimbabwe (9)
Kenya (5,8)	
Malaysia (5)	
Thailand (9)	
Vietnam (9)	
Zimbabwe (9)	

Polygonaceae

<i>Polygonum acuminatum</i> H.B.K. [smartweed]	
Argentina (1,5,8)	Argentina/USA (4,5,8)
<i>Polygonum lapathifolium</i> L. = <i>Persicaria lapathifolium</i> minus Hudson [knotweed, smartweed]	
Australia (1,5)	Australia (1,5)
<i>Polygonum</i> sp.	
Indonesia (11)	
Vietnam (9)	
<i>Rumex brownii</i> Campdera [swamp dock]	
	Australia (1,5)

Pontederiaceae

<i>Eichhornia azurea</i> (Sw.) Kunth [anchored waterhyacinth]	
Argentina (1,3,5,7,8,10)	Argentina/USA (4,5,7,8)
<i>Monochoria cyanea</i> (F. Mueller) F. Mueller [water hyacinth]	
Australia (1,3,5,7,8)	Australia (3,5)
<i>Monochoria hastata</i> (L.) Solms-Laub. [phak top thai]	
Thailand (9)	
Vietnam (9)	

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

<i>Monochoria korsakowii</i>	
China (2,3,6,8,10)	China (2,3,6,8,10)
<i>Monochoria vaginalis</i> (Burman f.) C.Presl ex Kunth	
Australia (1,3,5,7,8)	Australia (3,5)
China (2,3,6,8,10)	China (2,3,6,8,10)
Indonesia (11)	
Thailand (9)	
<i>Pontederia cordata</i> L. [pickerel weed]	
	Argentina/USA (4,5,7,8)
	Australia (1,5)
<i>Pontederia lanceolata</i> Nutt [pickerel weed]	
Argentina (1,3,5,7,8,10)	
<i>Reussia rotundifolia</i> (L.f.) Castellanos	
Argentina (3,8,10)	

Potamogetonaceae

<i>Potamogeton crispus</i> L. [curly pondweed]	
Australia (1,5)	

Punicaceae

<i>Punica granatum</i> L. [pomegranate]	
India (3,8)	India (3,8)
Thailand (9)	

Rhamnaceae

<i>Ziziphus mauritiana</i> Lamk. [Indian jujube]	
Thailand (9)	

Rosaceae

<i>Fragaria</i> × <i>ananassa</i> Duchesne [strawberry]	
Australia (1,5)	Australia (1,5)
<i>Malus domestica</i> Borkh. = <i>Pyrus malus</i> [apple]	
Australia (1,5)	Australia (1,5)

N. bruchi**N. eichborniae***Malus pumila* Mill. [apple]

China (2,3,6,8,10) China (2,3,6,8,10)

Prunus armeniaca L. [apricot]

Zimbabwe (9) Zimbabwe (9)

Prunus persica (L.) Batsch [peach]

China (2,3,6,8,10) China (2,3,6,8,10)

Zimbabwe (9) Zimbabwe (9)

Prunus sp.

Vietnam (9)

Rosa alba (L.) [rose]

India (3,8) India (3,8)

Rosa chinensis Jacq.

China (2,3,6,8,10) China (2,3,6,8,10)

Rubiaceae*Coffea arabica* L. [coffee]

Zimbabwe (9) Zimbabwe (9)

Coffea liberica [coffee]

Malaysia (5)

Coffea robusta Linden = *C. canephora* [coffee]

India (3,8) India (3,8)

Coffea sp.

Indonesia (11)

Ixora sp.

Indonesia (11)

Morinda citrifolia L. [Indian mulberry, rotten
cheese fruit]

Thailand (9)

Rutaceae*Citrus aurantifolia* (Christm.) Swingle [lime]

Thailand (9)

Citrus grandis Hassk. [pomelo]

Malaysia (5)

N. bruchi**N. eichborniae**

Vietnam (9)

Citrus limon (L.) Burm. f. [lemon]

Australia (1,5) Australia (1,5)

Zimbabwe (9) Zimbabwe (9)

Citrus medica L. [citron]

India (3,8) India (3,8)

Citrus microcarpa Bunge [calamondin, China orange]

Malaysia (5)

Citrus paradisi Macfad. [grapefruit]

Zimbabwe (9) Zimbabwe (9)

Citrus reticulata Blanco [mandarin]

Australia (1,5)

Citrus sinensis (L.) Osbeck [sweet orange]

Australia (1,5)

Citrus spp.

Vietnam (9)

Murraya exotica (L.) = *M. paniculata* L. Jack [curry
leaf]

India (3,8) India (3,8)

Salviniaceae*Salvinia molesta* D.S. Mitchell [salvinia]

Australia (1,5)

Salvinia sp.

Vietnam (9)

Sapindaceae*Dimocarpus longan* Lour. [longan]

Thailand (9)

Vietnam (9)

Nephelium lappaceum L. [rambutan]

Malaysia (5)

Sapotaceae

Achras zapota (L.) van Royen = *Manilkara apota*
[sapota]

India (3,8)

India (3,8)

Mimusops kauki [sapota]

Thailand (9)

Solanaceae

Capsicum annuum var. *grossum* Sendtn. [sweet pepper]

Thailand (9)

Capsicum annuum L. [chilli]

India (3,8)

India (3,8)

Vietnam (9)

Carpocapsae minimum [bird chili pepper]

Thailand (9)

Lycopersicon esculentum Miller [tomato]

Australia (1,5)

Australia (1,5)

China (2,3,6,8,10)

China (2,3,6,8,10)

India (3,8)

India (3,8)

Indonesia (11)

Zimbabwe (9)

Thailand (9)

Zimbabwe (9)

Nicotiana tabacum L. [tobacco]

China (2,3,6,8,10)

China (2,3,6,8,10)

Indonesia (11)

Zimbabwe (9)

Thailand (9)

Zimbabwe (9)

Solanum melongena L. [brinjal, eggplant]

China (2,3,6,8,10)

China (2,3,6,8,10)

India (3,8)

India (3,8)

Indonesia (11)

Thailand (9)

Solanum torvum Sw. [cluster eggplant, devil's fig]

Thailand (9)

Solanum tuberosum L. [potato]

China (2,3,6,8,10)

China (2,3,6,8,10)

India (3,8)

India (3,8)

Uganda (4,9)

Uganda (4,9)

Zimbabwe (9)

Zimbabwe (9)

Solanum xanthocarpum [eggplant]

Thailand (9)

Uganda (4,9)

Uganda (4,9)

Sparganiaceae

Sparganium americanum Nutt.

Argentina/USA (4,5,7,8)

Sterculiaceae

Theobroma cacao L. [cocoa]

Malaysia (5)

Taxodiaceae

Metasequoia glytostroboides

China (2,3,6,8,10)

China (2,3,6,8,10)

Theaceae

Thea sinensis (L.) O.Kuntze = *Camelia sinensis* [tea]

India (3,8)

India (3,8)

Tiliaceae

Corchorus capsularis L. [jute]

Thailand (9)

Corchorus olitorius L.

Vietnam (9)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Trapaceae

Trapa bicornis Osb. [water caltrops]

Thailand (9)

Trapa bispinosa Roxb. = *T. natans* (Linn.) [water chestnut]

India (1,3,5,8) India (1,3,5,8,10)

Typhaceae

Typha domingensis Pers. = *T. angustifolia* [lesser reedmace]

Thailand (9)

Typha latifolia L. [cattail]

Argentina (1,5,8) Argentina/USA (4,5,8)

Typha orientalis C. Presl. [bullrush, broad leaved cumbungi]

Australia (1,5) Australia (1,5)

Umbelliferae

Daucus carota L. [carrot]

Argentina (1,5,8) Argentina/USA (4,5,8)

India (3,8) Australia (1,5)

India (3,8)

Unknown

Morkara sp.

Malaysia (5)

<i>N. bruchi</i>	<i>N. eichhorniae</i>
------------------	-----------------------

Verbenaceae

Tectona grandis L.f. [teak]

India (3,8) India (3,8)

Vitidaceae

Vitis vinifera L. [grape]

India (3,8) India (3,8)

Thailand (9)

Xanthorrhoeaceae

Lomandra longifolia Labill [longleaf matrush]

Australia (1,5)

Zingiberaceae

Alpinia siamensis [greater galangal]

Thailand (9)

Curcuma longa (L.) possibly *C. domestica* Val. [turmeric]

India (3,8) India (3,8)

Malaysia (5)

Vietnam (9)

Elettaria cardamomum (L.) Maton [cardamom]

India (3,8) India (3,8)

Zingiber officinale Rosc. [ginger]

Australia (1,5) China (2,3,6,8,10)

China (2,3,6,8,10) India (3,8)

India (3,8)

Malaysia (5)

Appendix 2



Summary results of host-specificity tests carried out on *N. bruchi* for which some damage was recorded. Results detail the country in which the test was made, the basic test design, and the outcome of the trial. The test designs used were: 1. Oviposition - multiple choice with host; 2. Oviposition - multiple choice, presence of host unknown; 3. Oviposition - no choice; 4. Oviposition - unknown design; 5. Adult feeding/survival - multiple choice with host; 6. Adult feeding/survival - multiple choice, presence of host unknown; 7. Adult feeding/survival - paired choice; 8. Adult feeding/survival - no choice; 9. Adult feeding/survival - unknown design; 10. Development following placement of eggs or larvae.

Alismataceae

Sagittaria trifolia

China

- 8 fed and survived for 29 days, no feeding in multiple choice tests (unclear to which weevil species this refers)

Apiaceae

Hydrocotyle ranunculoides

Argentina

- 3 less than 0.5 eggs/female/day vs 3.5 on water hyacinth
- 8 less than 3 feeding spots/weevil/day vs 17/day for water hyacinth

Araceae

Amorphophallus sp.

India

- 8 slight feeding (scraping of leaf epidermis) and survived for 31 days, no feeding in multiple choice tests

Colocasia esculenta

India

- 8 slight feeding (scraping of leaf epidermis) and survived for 43 days, no feeding in multiple choice tests

Pistia stratiotes

Argentina

- 3 less than 0.5 eggs/female/day vs 3.5 on water hyacinth
- 8 less than 3 feeding scars/weevil/day vs 17/day for water hyacinth

India

- 8 fed and survived for 76 days, no feeding in multiple choice tests
- 10 placement of 3 first instars, no survival beyond 3 days

Vietnam

- 9 65 feeding scars vs 220-338 on water hyacinth

Zimbabwe

- 9 0.03 feeding scars/weevil/day vs 9.83 on water hyacinth (unclear to which weevil species this refers)

Asteraceae

Lactuca sativa

Argentina

- 1 1 egg laid vs 749 on water hyacinth
- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 5 0.031 feeding scars/weevil/day vs 4.01 on water hyacinth
- 7 0.02 feeding scars/weevil/day vs. 13.49/day on water hyacinth (on average)
- 8 0.85 feeding scars/weevil/day vs 7.58 on water hyacinth

India

- 4 adult fed and survived for 34 days, 2 fertile eggs laid, larvae died within 2 days of hatching, no feeding in multiple choice tests

Begoniaceae

Begonia sp.

India

- 8 slight feeding (scraping of leaf epidermis) and survived for 24 days, no feeding in multiple choice tests

Brassicaceae

Brassica caulorapa

China

- 8 fed and survived for 36 days, no feeding in multiple choice tests (unclear to which weevil species this refers)

Brassica oleracea

Kenya

- 8 1 feeding scar vs a maximum of 376 on water hyacinth, no feeding in multiple choice tests vs 313 feeding scars on water hyacinth
- 8 137 feeding scars vs a maximum of 376 on water hyacinth

Brassica oleracea var. *capitata*

Argentina

- 1 3 eggs laid vs 749 on water hyacinth
- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 5 0.003 feeding scars/weevil/day vs 4.01 on water hyacinth
- 7 0.01 feeding scars/weevil/day vs. 13.49/day on water hyacinth (on average)
- 8 0.83 feeding scars/weevil/day vs 7.58 on water hyacinth

Zimbabwe

- 9 0.01 feeding scars/weevil/day vs 9.83 on water hyacinth (unclear to which weevil species this refers)

Brassica pekinensis

China

- 8 fed and survived for 24 days, no feeding in multiple choice tests (unclear to which weevil species this refers)
- 10 some feeding but unable to complete development

Raphanus sativus

India

- 8 slight feeding (scraping of leaf epidermis) and survived for 50 days, no feeding in multiple choice tests

Rorippa nasturtium-aquaticum

Argentina

- 5 0.001 feeding scars/weevil/day vs 4.01 on water hyacinth

Bromeliaceae

Ananas comosus

Argentina

- 1 1 egg laid vs 749 on water hyacinth

Cannaceae

Canna indica

India

- 8 fed and survived for 34 days, no feeding in multiple choice tests
- 10 placement of 3 first instars, no survival beyond 3 days

Ceratophyllaceae

Ceratophyllum oryzetorum

China

- 10 some feeding but unable to complete development (unclear to which weevil species this refers)

Commelinaceae

Commelina coelestis

Argentina

- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 8 0.56 feeding scars/weevil/day vs 7.58 on water hyacinth

Commelina virginica

Argentina

- 5 0.001 feeding scars/weevil/day vs 4.01 on water hyacinth
- 8 0.01 feeding scars/weevil/day vs 7.58 on water hyacinth

Tradescantia crassifolia

Argentina

- 1 2 eggs laid vs 749 on water hyacinth
- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 5 0.001 feeding scars/weevil/day vs 4.01 on water hyacinth

- 7 0.04 feeding scars/weevil/day vs. 13.49/day on water hyacinth (on average)

- 8 1.39 feeding scars/weevil/day vs 7.58 on water hyacinth

Tradescantia fluminensis

India

- 8 fed and survived for 51 days, no feeding in multiple choice tests
- 10 placement of 3 first instars, no survival beyond 3 days

Tripogandra elongata

Argentina

- 1 1 egg laid vs 749 on water hyacinth
- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 5 0.017 feeding scars/weevil/day vs 4.01 on water hyacinth
- 8 0.21 feeding scars/weevil/day vs 7.58 on water hyacinth

Zebrina pendula

Argentina

- 1 2 eggs laid vs 749 on water hyacinth
- 3 less than 0.25 eggs/female/day vs 3.0/day for water hyacinth
- 5 0.011 feeding scars/weevil/day vs 4.01 on water hyacinth
- 7 0.04 feeding scars/weevil/day vs. 13.49/day on water hyacinth (on average)
- 8 0.92 feeding scars/weevil/day vs 7.58 on water hyacinth

India

- 8 fed and survived for 36 days, no feeding in multiple choice tests
- 10 placement of 3 first instars, no survival beyond 3 days