

Heong, K. L. 617
 Hernández, C. D. 539
 Hight, S. D. 561
 Hoel, D. F. 319
 Hoffman, K. 581

I

Ioriatti, C. 581

J

James, P. J. 463
 Johnson, R. 581
 Jones, L. K. 889
 Juárez, J. G. 709

K

Kean, J. M. 505
 Ketelaar, J. W. 17
 Kimmie, S. 111
 Kittayapong, K. 405
 Kittayapong, P. 433
 Kovalski, A. 215
 Kruger, H. 693

L

Lance, D. 581
 Langella, G. 729
 Leonard, D. 551
 Li, C. M. 3
 Li, P. 143
 Li, X. 747
 Li, Y. 367
 Liebert, W. 795
 Liebhold, A. M. 551
 Liedo, P. 197
 Liew, C. 747
 Lin, Z. 3
 Lira, E. 483
 Lloyd, A. M. 319
 Lo, M. 275
 Loechel, B. 669
 Lohmeyer, K. H. 251

Lu, Z. X. 617
 Lucchi, A. 581
 Lundström, J. O. 433

M

Madhav, M. 463
 Manica, M. 729
 Mankad, A. 669
 Manoukis, N. C. 869
 Marra, J. L. 551
 Marte-Diaz, G. 519
 Martín, R. 539
 Martínez-Pujols, F. 519
 Mastrangelo, T. 215
 Mastro, V. 581
 Mbaye, A. G. 275
 Measham, P. F. 669
 Meccariello, A. 843
 Midgarden, D. 483
 Miller, R. J. 251
 Mitchell III, R. D. 251
 Montoya, P. 197
 Morales, M. 539
 Moreno-Molina, J. 903
 Morreale, R. L. 319

N

Nelson, C. 111
 Neuenschwander, P. 17
 Ng, L. C. 747
 Nielsen, K. M. 645
 Niu, C. 143

O

Orankanok, W. 17

P

Papathanos, P. A. 843
 Pellecer Rivera, E. 709
 Pennington, P. M. 709
 Pereira, R. 561
 Pérez De León, A. A. 251

Petrella, V. 729
 Pfister, S. E. 551
 Philip, H. 111
 Pineda-Ríos, J. M. 33

Q

Quezada-Salinas, A. 33

R

Rashid, M. A. 143
 Rauf, A. 17
 Rendon, P. 161
 Robles-García, P. L. 33
 Rodríguez, X. 539
 Ruiz-Galván, I. 33

S

Saccone, G. 729
 Sall, B. 275
 Salvemini, M. 729
 Sanchez-Anguiano, H. M. 561
 Schäfer, M. L. 433
 Schellhorn, N. A. 889
 Schetelig, M. F. 809
 Seck, M. T. 275
 Sim, S. 747
 Simmons, G. S. 581
 Soh, L. T. 747
 Staten, R. T. 51
 Stathopoulou, P. M. 917
 Steinhauer, R. 581
 Stone Smith, B. 581
 Stringer, L. D. 505
 Suckling, D. M. 505

T

Taret, G. A. A. 597
 Taylor, D. B. 233
 Tesche, M. 111

Toledo, J. 197
 Trujillo-Arriaga, F. J. 33, 561
 Tsiamis, G. 917

V

Van Lenteren, J. C. 655
 Vanin, M. 597
 Varela, L. 581
 Velayudhan, R. 633
 Venter, J-H. 129
 Vreysen, M. J. B. 275, 857

W

Walters, M. L. 51
 Wang, X. 3
 Wang, Y. 143
 Whitmer, D. 581
 Windbichler, N. 843
 Wyckhuys, K. A. G. 17

X

Xi, Z. 367
 Xu, P. 143

Y

Yang, H. L. 3
 Yang, P. 143
 Yang, S. Y. 3
 Yu, Y. B. 3

Z

Zavala-López, J. L. 519
 Zetina-Rodriguez, R. 561
 Zhang, D. 367
 Zhang, L. M. 3
 Zhu, Z. R. 617
 Zimmermann, H. G. 561



Scientific Name Index

A

- Acer saccharinum*..... 926
 Acrididae240, 802
 Actinobacteria917, 920
Aedes...339, 390, 395, 633, 641, 643, 803, 828, 912
Aedes aegypti...324-327, 334, 336, 339-358, 373-375, 405-428, 443-447, 450, 451, 473, 474, 747-759, 813, 815, 844, 846, 852
Aedes albopictus...324-327, 342, 346-350, 373-375, 383-395, 408-411, 423, 443-450, 472, 729-741, 748, 822
Aedes annulipes 449
Aedes cantans 449
Aedes cinereus 449
Aedes communis434, 449
Aedes dianiaus 449
Aedes intrudens 449
Aedes malayensis..... 342
Aedes polynesiensis...353, 373-375, 409, 444, 472, 474
Aedes punctator434, 449
Aedes riversi 374
Aedes rossicus 434
Aedes sticticus 433-456
Aedes taeniorhynchus..322, 323, 327, 330, 332, 334
Aedes vexans436, 447, 449
Agrilus planipennis.....510, 512
Agrobacterium..... 646
Alnus..... 926
 Alphaproteobacteria 920
 Alphavirus 340
Amblyomma cajennense 257
Amyeloides transitella 787
Anagyris lopezi 17-30
Anaplasma marginale..... 254
Anastrepha...164, 167, 173, 179, 180, 198, 217, 221, 536, 880
Anastrepha curvicauda 167
Anastrepha distincta 167
Anastrepha fraterculus..167, 215-226
Anastrepha ludens...113, 153, 167, 168, 198-211, 814, 816, 913
Anastrepha obliqua...167, 168, 198-210, 913
Anastrepha serpentina 167
Anastrepha striata 167
Anastrepha suspensa..... 167, 816
Anopheles...374, 395, 795, 799, 800, 803, 815, 818, 931
Anopheles albimanus ... 816, 930, 932
Anopheles arabiensis...408, 444, 450, 816, 930, 931
Anopheles atropos 324
Anopheles claviger..... 449
Anopheles crucians 324
Anopheles dirus 930, 934
Anopheles gambiae...795-799, 813, 816-818, 847-852, 928, 930, 932
Anopheles maculipennis 449
Anopheles quadrimaculatus..324, 407
Anopheles stephensi...375, 472, 796, 818, 852, 930, 931
Anoplophora chinensis 923, 926
Anoplophora glabripennis 896
Anthonomus grandis 66
 Aphididae..... 3
Aphidius gifuensis3-14
Apis mellifera jemenitica 929
Archips 119
 Argasidae 252
Argyrotaenia ljungiana..... 594
Arsenophonus 921

B

Babesia bigemina253, 254, 259
Babesia bovis.....254, 259
Bacillus 920
Bacillus cereus 99
Bacillus sphaericus..... 934
Bacillus thuringiensis...57, 331, 551, 591, 658, 785
Bacillus thuringiensis israelensis..... 333, 348-455
Bacillus thuringiensis kurstaki 61, 510, 515, 555, 557, 606
Bacteroidetes920, 921
Bactrocera.... 146-152, 164, 180, 880
Bactrocera carambolae.165, 186, 187
Bactrocera citri 146
Bactrocera dorsalis...130, 133, 140, 141, 150, 153, 164, 180, 514, 515, 894
Bactrocera minax 143-155
Bactrocera oleae..165, 168, 373, 919, 925, 928
Bactrocera tryoni.....150, 669-671, 693-706, 894, 895, 923, 926
Bactrocera zonata 165
Baumannia 919
Beauveria bassiana 932
Bemisia argentifolii 935
Betaproteobacteria.....917, 920
Biostraticola 921
Blochmannia..... 919
Bombyx mori 813
Bonagota salubricola 216
Bos indicus468, 469
Bos taurus.....468, 477
Boselaphus tragocamelus 259
Botrytis cinerea 599
Bracharia mutica..... 621
Braconidae..... 3, 4
Brenneria..... 921
Bubalus bubalis 466
Buchnera919, 921
Budvicia 921
Buprestidae..... 510
Buttiauxella 921

C

Cactaceae 561, 565
Cactoblastis cactorum...113, 561-577
Cadra cautella 373
Calliphoridae..... 313
Calliptamus italicus 765
Campomanesia xanthocarpa 219
Candidatus Erwinia dadicola 919
Candidatus Liberibacter 33, 34
Candidatus L. africanus 34
Candidatus L. americanus 34
Candidatus L. asiaticus..... 34, 37
Candidatus L. caribbeanus 34
Candidatus Phytoplasma 25
Cardinium 919
Carsonella..... 919
Cedecea 921
Cerambycidae 509, 510, 924, 928
Ceratitis capitata...58, 113, 129-140, 153, 164-169, 174, 179-181, 184-186, 198, 217, 218, 223, 225, 297, 373, 443, 483-502, 519-535, 734, 813, 816, 852, 869-886, 896, 910, 923-929
Ceratitis quilicii 130
Ceratitis rosa 130
Cetoniinae 283, 284
Charaxes 284
Chartocerus walkeri 23
Chilo suppressalis..... 621
Chironomidae 628
Choristoneura rosaceana 119, 896
Chrysomelidae 509, 510
Chrysomya bezziana 464
Chrysopa sinica 12
Chrysophilum caimito..... 491
Cimbex quadrimaculatus 935, 936
Citrobacter..... 921, 922, 926
Citrobacter freundii 929
Citrus aurantifolia 36
Citrus aurantium..... 146
Citrus latifolia..... 36
Citrus limon 146
Citrus maxima..... 146
Citrus medica..... 146

Citrus paradisi.....36, 146
Citrus reticulata36, 145, 146, 491
Citrus sinensis...35, 36, 146, 150, 491
Citrus sinensis brasiliensis 146
Citrus tangerina 146
Clostridia917, 920
Coccinella septempunctata..... 12
Cochliomyia hominivorax...113, 305-315, 336, 443, 470, 814
Coffea arabica..... 484
Coleoptera...283, 375, 507, 509, 513, 657, 924
Coptotermes acinaciformis..... 923
Coptotermes curvignathus...924, 927
Coptotermes formosanus 923-925, 927, 930
Coptotermes lacteus 923
Coquillettidia richiardi..... 449
Cosenzaea..... 921
Cronobacter 921
Cryptoblabes gnidiella 594
Cryptotennes primus..... 923
Cryptotermes domesticus.....923, 926
Culex 390
Culex laticinctus 735
Culex nigripalpus 323
Culex pipiens...372, 374, 385, 449, 735, 846
Culex pipiens fatigans 444
Culex pipiens pallens..... 472
Culex quinquefasciatus...323, 327, 372, 373, 408, 444, 472, 758
Culex tarsalis..... 408
Culex torrentium..... 449
Culicidae.....507, 509, 510
Culiseta alaskensis 449
Culiseta bergrothi..... 449
Culiseta morsitans 449
Culiseta ochroptera 449
Curculionidae 509
Cydia pomonella...111-125, 216, 221, 223, 443, 785, 779, 896

D

Dacus..... 164

Danaus plexippus..... 813
Daphne gnidium..... 582
Delia antiqua 121, 930, 932
Dendroctonus frontalis 923, 926
Dendroctonus terebrans 923, 926
Diachasmimorpha feijeni..... 153
Diachasmimorpha longicaudata. 201, 202, 208, 210, 215, 225, 913
Diaphorina citri 33-46, 914
Dickeya 921
Diestrammena asynamora 924
Diocalandra frumenti 541
Diptera 509, 510, 513, 897
Dirofilaria immitis 322
Doclostaurus maroccanus 765
Doryctobracon areolatus..... 225
Drosophila 473, 845, 848
Drosophila melanogaster...473, 796, 813, 817, 824
Drosophila simulans 844
*Drosophila suzukii*373, 513, 813, 817, 818
Drosophilidae..... 375, 513

E

Edwardsiella 921
Eichhornia crassipes..... 320
Elateridae 924
Encyrtidae 17, 18, 23
Enterobacter 917-937
Enterobacter aerogenes 923-927, 935, 936
Enterobacter agglomerans ...925-930
Enterobacter amnigenus.....926, 930, 932, 934
Enterobacter asburiae..924-926, 930, 933
Enterobacter cancerogenus....928, 935, 936
Enterobacter cloacae.....922-935
Enterobacter cowanii..... 926
Enterobacter hormaechei...923, 926, 928, 935
Enterobacter kobei..... 929
Enterobacter ludwigii .. 930, 932, 933

Enterobacter sakazakii.....925, 927, 929
 Enterobacteriaceae.....921, 922
Epiphyas postvittana515, 789
Episyrrhus balteatus 12
 Erebidae.....510, 514, 551, 552, 788
 Eriaporidae 23
Eriosoma lanigerum 216
Erwinia 921
Erwinia ananas.....934
Escherichia..... 921
Escherichia coli..... 936
Eugenia involucrata 219
Euphorbia..... 294
Eupoecilia ambiguella..... 594
Euproctis chrysorrhoea935, 936
Ewingella..... 921

F

Feijoa sellowiana 219
Ferrisia virgata 20
 Firmicutes.....917, 920, 921
 Formicidae.....509, 510, 928
Fortunella crassifolia 146

G

Galleria mellonella.....240, 928, 936
Gambusia328, 329, 350
Gambusia affinis..... 350
Gambusia holbrooki327, 328
 Gammaproteobacteria...917, 920, 921
Gibbsiella 921
Glossina..... 113, 240, 373, 471, 857
Glossina austeni290, 470, 861
Glossina fuscipes fuscipes 862-864
Glossina morsitans 472
Glossina morsitans centralis 862
Glossina morsitans morsitans 864
Glossina pallidipes 864
Glossina palpalis 861
Glossina palpalis gambiensis 275-
 300, 862, 863, 865
 Glossinidae.....509, 510
Glyphodes duplicalis930, 934
Glyptotermes fuscus923, 926

Gossypium barbadense 56, 66, 78
Gossypium hirsutum 56, 74
Grapholita molesta...216, 612, 779,
 786, 896
Gryllus bimaculatus 813

H

Haemaphysalis longicornis..... 261
Haemaphysalis micropla 254
Haematobia exigua463-477
Haematobia irritans.....234, 463-465
Haematobia minuta..... 465
Haematobia thirouxi potans 465
Hafnia 921
Halyomorpha halys..... 121, 513
Harmonia axyridis 12
Helicoverpa armigera.....658
Helicoverpa zea 896, 930, 933
 Heliothinae..... 779, 783
 Hemiptera...3, 4, 17, 18, 375, 509,
 513, 657, 658
Heterorhabditis..... 240
Heterorhabditis marelatus 932
Heterotermes ferox 923
Holotrichia parallela 924
 Hymenoptera..... 509

I

Icerya purchasi 657
Ips avulsus 923, 926
 Isoptera 509
Ixodes scapularis 260
 Ixodidae 252, 509, 510

K

Klebsiella 921, 922, 926
Klebsiella pneumoniae..... 929
Khuyvera..... 921

L

Lactobacillus..... 920
Leclercia 921

Leminorella 921
Lepidoptera...93, 94, 113, 237, 283,
 375, 505-510, 513-115, 551, 555,
 562, 585, 658, 779, 813, 897
Leptinotarsa decemlineata ...930, 932
Leptinotarsa juncta.....930, 933
*Lobesia botrana*581-594, 597-613,
 779, 787
Locusta migratoria 765
Lonsdalea 921
Lucilia cuprina313, 471, 816
Lycosa pseudoamulata 12
Lymantria 515
Lymantria dispar...510, 511, 515,
 551-559, 779, 788
Lymantria pelospila..... 896
Lymantriinae506, 509, 510, 514
Lysinibacillus (Bacillus)
sphaericus..... 331

M

Macrochelidae 240
Mangifera indica 168
Mangrovibacter 921
Manihot esculenta17, 18
Mansonella dyari..... 324
Mansonella titillans..... 324
Mastotermes darwiniensis...923, 924,
 927
Melittara 572
Moellerella 921
Morganella 921
Musca autumnalis..... 234
Musca domestica...234, 813, 815,
 852
Muscidifurax raptoroides 240
Myrmeleon bore935, 936
Myzus persicae 3-14

N

Nasonia vitripennis..... 848
Nasutitermes graveolus 923
Nilaparvata lugens 618-624
Noctuidae658, 783, 896

Nymphalidae..... 284

O

Oberea linearis 935
Obesumbacterium 921
Opuntia561-576
Opuntia triacantha..... 563
Orgyia anartoides 113

P

Pachnoda interrupta 284
Pachnoda marginata..... 284
Paenibacillus 929
Palmae 540
Panonychus ulmi..... 216
Pantoea 921
Parabasalia 921
Paracoccus marginatus 20, 25
Paralobesia viteana 594
Passalidae..... 924
Pectinophora gossypiella.....51-86,
 113, 443, 777, 779, 780, 784
Pectobacterium 921, 922
Pentatomidae..... 513
Phaseolibacter 921
Phenacoccus manihoti 17-29
Phoenix canariensis 539, 540, 544
Phoenix dactylifera 539, 540, 544
Photorhabdus..... 921
Photorhabdus temperata..... 932
Physarum polycephalum 847
Pistia stratiotes 320
Plasmodium...95-800, 818, 919, 930-
 932
Plasmodium falciparum...799, 804,
 932
Plasmodium vivax 932
Platyopuntia..... 565
Plesiomonas 921
Plutella xylostella 924-927, 930
Poecilia reticulata 350
Polistomimetes minax 146
Poncirus trifoliata..... 146
Popillia japonica 896

Pragia..... 921
Prochiloneurus 23
Promuscidea unfasciatiiventris 23
Proteus 921
Providencia 921
Prunus persica..... 491
Pseudaletia unipuncta 896
Pseudococcidae 17, 18
Pseudococcus jackbeardsleyi 20
Psorophora ciliata..... 324
Psorophora columbiae 324
Psorophora ferox..... 324
Pyrilidae..... 562, 787
Pyrus communis 491

R

Rahnella 921
Raoultella 921
Reduviidae..... 710
Reticulitermes chinensis 923, 926
Reticulitermes flavipes..... 923-927
Reticulitermes speratus 923, 926
Rhagoletis..... 150, 151, 164, 167, 217
Rhagoletis cerasi 151, 373
Rhagoletis cingulata 167
Rhagoletis completa 167, 168
Rhagoletis fausta 167
Rhagoletis indifferens 167
Rhagoletis mendax 167
Rhagoletis pomonella... 121, 150, 151, 168, 930
Rhipicephalus annulatus..... 253, 258, 259
Rhipicephalus australis 257, 466
Rhipicephalus microplus..... 251, 254, 256-259
Rhipicephalus sanguineus 256
Rhodnius prolixus..... 710, 711
Rhynchites bacchus 935
Rhynchophorus ferrugineus..... 539-549, 765, 924
Rodolia cardinalis 657
Rutaceae 34, 150

S

Saccharobacter 921
Saccharomyces cerevisiae ... 415, 811
Salmonella 921
Samsonia..... 921
Saturnia pyri 779
Scarabaeidae 924
Schedorhinotermes intermedius ... 923
Schistocerca gregaria 765-777
Serratia 921
Shigella 921
Shimwellia..... 921
Sideroxylon foetidissimum 528
Signiphoridae..... 23
Simarouba berteroa 528
Sirex noctilio..... 924
Sodalis 921
Solanum carolinense..... 933
Solanum lycopersicum 933
Spalangia endius..... 240, 913
Spalangia gemina 240
Spilonota ocellana 119
Spirochetes..... 917, 920
Spiroplasma 919
Spodoptera frugiperda..... 765, 896, 907
Spodoptera littoralis 935, 936
Spodoptera litura 813, 935
Staphylinidae 240
Steinernema 240
Stephanofilaria 464, 474-476
Stephanofilaria stilesi 475
Stomoxys calcitrans..... 233-244, 472, 473, 913, 925, 929
Synanthedon myopaeformis 121

T

Tamarixia radiata 34, 41, 914
Tatumella 921
Tenebrio molitor 928
Tephritidae... 130, 143, 161, 173, 174, 198, 215, 375, 483, 507-514, 519, 669, 693, 869, 896
Terminalia catappa..... 491, 528

Thaumatotibia leucotreta93-108,
 113, 291, 443
Thermobia domestica925, 927
Thorsellia 921
Thysanoptera 509
Tortricidae...93-108, 111-125, 506,
 581-594, 597-613, 779, 785-787
Toxorhynchites rutilus rutilus..... 327,
 328
Toxotrypana 164
Toxotrypana curvicauda 167
Trabulsiella 921
Tremblaya..... 919
Triatoma dimidiata.709-712, 722-725
Triatoma infestans710, 711
Trichogramma 612
Trioza erytreae 34
Trogoderma granarium 896
Trypanosoma 930
Trypanosoma brucei brucei..... 282
Trypanosoma brucei gambiense.. 858
Trypanosoma congolense277, 282
Trypanosoma cruzi....710, 712, 724,
 725
Trypanosoma vivax.....277, 282, 296
Tuta absoluta 658

V

Verrucomicrobia 917, 920
Vetiveria zizanioides 621

W

Washingtonia 544
Wigglesworthia 919, 921
Wolbachia...154, 339, 353, 354, 367-
 394, 406-428, 444, 448, 449, 463,
 471-477, 639, 643, 732, 747-759,
 798, 803, 919
Wolbachia pipientis 448

X

Xenorhabdus 921

Y

Yersinia 921
Yokenella 921

Z

Zeugodacus 164
Zeugodacus cucurbitae...113, 153,
 165, 925, 928, 929
Zophobas morio 928



Subject Index

A

- abortion.....294
 - rates284, 289
- acaricides.....252, 261
 - acaropathogenic fungi.....260
 - acaropathogenic nematodes260
 - amitraz256, 257
 - botanical256, 260
 - coumaphos.....258
 - doramectin258
 - impregnated rollers.....259
 - ivermectin256, 259
 - organophosphates256-258
 - permethrin258
 - resistance256-258
 - treatments257
- Access and Benefit Sharing (ABS).....655-665
- accidental.....58, 562, 800
 - female release..377, 379-382, 384, 386, 387, 394, 395, 410, 411, 426, 427
 - introduction.....551, 655-657
 - movement552, 556
 - pest export665
 - release.....367, 379, 387, 394, 410, 552
 - transport.....555
- accreditation543
 - phytosanitary544
 - schemes677
- acerola520
- actuators904-906, 910
- adaptive co-management693-706
- adaptive management ..276, 297, 299, 859, 860
- adoption.....112, 251, 256, 260, 261, 451, 680
 - area-wide management ...684-688, 889, 895
 - automated insect surveillance891-894
 - ecological engineering practices622-628
 - genome targeted technology645-652
 - GIS technology557
 - improved practices.....134
 - integrated vector management709
 - lack of.....703
 - knowledge-intensive technologies28
 - reactive vector control341
 - regional surveillance databases.....172
 - SIT684-688
- aerial spraying....61, 352, 469, 497, 515, 551-555, 606-608, 784, 904, 907, 910
- aerial applications
 - bait sprays134, 486, 529, 530
 - insecticides59, 606, 607, 785
 - larvicides352, 440
 - pheromones67, 604, 605, 609
 - remotely piloted aircraft systems910
- aerial releases865
 - parasitoids.....913, 914
 - sterile flies.129-135, 202, 290-295, 913, 914
 - sterile moths102
- aesthetic.....552
 - value563, 618
- Africa...17-21, 24, 29, 33, 34, 162-164, 253, 300, 340, 350, 406, 470, 514, 765-767, 796, 797, 804, 858, 859
 - Central Africa165
 - North Africa...165, 166, 552, 564, 582, 766, 787
 - northern Sahel.....769
 - north-western172, 769
 - PATTEC.....275, 279, 300
 - Sahara769
 - southern564
 - sub-Saharan....18, 93, 164, 465, 641, 799, 857, 858, 861
 - West Africa..19, 276-283, 766-772, 861-863
- African animal trypanosomosis276, 857
- African psyllid.....34
- agent-based simulations.....869-886
- agriculture30, 83, 120, 658, 801, 810, 920
 - college education627
 - contribution of biocontrol657, 921
 - digital technology891
 - diversified.....75
 - exports169
 - genome editing819, 831
 - greenhouse gas emissions162
 - innovation systems thinking695, 698
 - key pests163
 - large-scale.....646
 - precision260, 891, 907
 - remotely piloted aircraft systems903-915
 - threat.....108, 765, 768
- agricultural
 - commodities165, 169, 564, 582, 583
 - diversification171
 - industries120, 694
 - intensification405
 - quarantine584
 - trade.....831, 832, 889
- air
 - borne disruptant.....786
 - borne laser-scanning.....437
 - borne scouting904
 - braking collection system100

- change rate 100
- mating 446
- movement patterns 57
- passengers 165
- quality 239
- supply line 136
- temperature time series 873
- transport 449, 574
- aircraft 56, 68, 69, 202, 203, 606, 686
- autopilots 905-907, 909
- Beechcraft King Air 90 532
- blimps 905
- Cessna 206 63
- drones 223, 260, 421, 450, 774, 775, 777, 904, 908
- Douglas DC3-TP 335
- fixed-wing 102, 103, 131, 290, 774, 905, 906, 913
- fixed-wing airplanes 19, 334, 352, 450
- gyrocopters 102, 103, 105, 135, 290-292
- helicopters 102, 103, 135, 332, 333, 438-440, 450, 454, 905-907, 911-913
- multirotors 905
- parafoils 905
- payload capacity 903-906, 912-914
- Piper Pawnee 102
- speed 63, 103, 440, 450, 910
- unmanned systems 903-915
- Albania 730
- alert systems 172, 545
- alfalfa 75
- Algeria, Hoggar Mountains 769
- algorithms 255
- decision 551, 557-559
- density-based clustering 862
- machine learning 896
- Allee
 - effects 554, 555, 590, 782, 877
 - threshold 555
- alliance technology 805
- alliances 184, 718
- strategic 179, 183
- all-terrain vehicles 102, 910, 912
- almond moth 373
- almonds 787, 788
- altitude 130, 145, 216, 484, 489, 500
- gradient 199, 491
- of applications 334
- of flight 905-907
- Amazon 348, 466
- barrier 309, 311
- Basin 307, 309, 311, 314
- North and South Amazon regions .. 309, 310
- Americas .. 33, 93, 164-189, 258, 309, 340, 342, 405, 406, 466, 470, 582, 710, 748
- amino acid
 - residues 847
 - substitutions 313
- anaerobic 926
- conditions 925, 926
- facultative 921, 922
- fermentation 920
- analogue 349, 370, 904
- anaplasmosis 254
- anautogenous 149
- Andes mountains 880
- Angola 108
- Antarctic 164
- anthropogenic 788
- factors 252, 488
- gases 488
- anthropological study 720
- antibiotics 375, 387, 825
- treatment 372, 925, 933
- antibodies 298, 349
- anti-fungal 932
- antigens 259
- antioxidants 170, 931
- anti-pathogenic 930, 931
- effector genes 818
- substances 931
- anti-tick vaccines 256-259
- antivirals 409, 748, 825
- antlion 935
- ants 23, 505, 510
- carpenter 919
- nest choice 871
- predatory 290
- apathy 682, 704
- aphids 3-14, 216, 919
- biological control 5-14
- chemical control 12
- mass-rearing 5-7
- viral diseases 3, 4
- apoptosis 816
- apple clearwing moth 121
- apple maggot 121, 150, 151, 167, 930
- apples 112-121, 150, 179, 181, 215-226, 785, 786, 790
- Approximate Bayesian Computation 309
- aquatic 921
- ecosystems 239
- environment 922
- habitat 322
- invertebrates 343
- organisms 120
- plants 236
- systems 800
- weeds 320
- Arabian Peninsula 34, 766, 769
- Arabian Sea 767
- arbovirus 326, 340, 341, 357, 379, 386, 731
- detection 326, 335
- diseases 635
- endemic countries 428
- infections 409

- outbreak 337, 346, 406
- prevalence 354
- surveillance 319, 325
- transmission 325
- vectors 367, 373, 385, 443
- archaea 812, 918, 929
- area-wide 314
- application 3-14, 121, 171, 174, 179, 243, 381, 385, 535, 539, 582, 788, 792, 872
- approach 33-46, 54, 62, 103, 112, 120, 251, 254, 305, 348, 469, 475, 477, 531, 608, 786, 792
- control 35, 115, 140, 254, 370, 433-455, 463-477, 585, 590, 594, 684, 827, 860
- coverage 290, 352, 455, 605
- eradication 78, 519-537, 561-577, 581-596, 790
- integrated pest management 17, 30, 93-108, 221-223, 275-300, 306, 369, 407, 443, 484, 502, 557, 859, 889-900, 903-915
- integrated vector management 354, 709, 732
- management 129-140, 143-155, 197-212, 216, 233-244, 252, 306, 597-613, 669-689, 765-777
- management programmes 161-189, 237-239, 244, 257, 311, 552, 779-789, 894
- pest management 111, 254, 618, 628, 776, 777, 822, 831
- resistance management 52-87
- suppression 3, 66, 73, 113, 597, 675, 681, 737, 890, 892
- Argentina 34, 131, 167, 180, 217, 222, 223, 340, 466, 535, 582, 787, 821
- Asociación de Cooperativas Vitivinícolas Argentinas 602
- Buenos Aires, southern 601
- Catamarca 601
- Corporación Vitivinícola Argentina 602
- Federación de Cooperativas Vitivinícolas Argentinas 602
- Instituto de Sanidad y Calidad Agropecuaria de Mendoza 597-613
- Instituto Nacional de Vitivinicultura 602
- Jujuy 601
- La Pampa 601
- La Rioja 601
- Mendoza 181, 188, 597-613
- Neuquén 601
- north-eastern 188
- northern 307
- Patagonia 177, 181, 182, 188
- Río Negro 601
- Salta 601, 602
- San Juan 188, 601, 602
- Tucumán 601
- armyworms 765, 766, 777, 896, 907
- artificial diet 97, 154, 567
- Asia 33, 93, 94, 143, 162-165, 340, 406, 466, 555, 582, 748, 765, 766
- Asia Minor 112
- Asian Institute of Technology 20
- Central Asia 165, 766, 770
- citrus diseases 34
- culture 350
- markets 121
- pesticide marketing 626-628
- rice planthopper pests 617-628
- Southeast Asia 17-29, 165, 186, 350, 351, 405-428, 730
- south-western 766
- temperate 552
- tropical 17-30
- Asian blue tick 254
- Asian citrus psyllid 33-46
- Asian Development Bank 629
- Asian gypsy moth 555, 788
- Asian long-horned beetle 896
- Asian longhorned tick 261
- Asian tiger mosquito 324-327, 342, 346-350, 367-396, 408-423, 443-450, 472, 729-741, 748, 822
- aspirators 7, 22
- MosVac 414-422, 451, 452
- asynchronous 890
- delivery 899
- detections 873
- planting 621
- Atlantic Ocean 310, 556, 767
- Atlas Mountains 769
- atmosphere 488, 780, 917
- atmospheric concentrations 781
- atmospheric nitrogen 926
- attitudinal drivers 670
- attract and kill 61, 66, 135, 151, 154, 781
- Australia 131, 164, 235, 239, 253, 353, 373, 463-477, 535, 561, 562, 618, 626, 657, 669-689, 748, 786, 870, 891, 899, 926
- Australian National University 693
- Cairns 349, 410
- Civil Aviation Safety Authority 909
- CSIRO 669, 689, 889
- eastern 670, 671, 694
- fruit and vegetable exports 671
- Fruit Fly Exclusion Zone 677
- Harmonised Australian Retailer Produce Scheme 684
- Hort Innovation 669, 689
- horticultural landscapes 672
- Landcare Programme 705
- National Fruit Fly Council 694, 703
- New South Wales 466-468, 673, 693-706
- north-eastern 410, 467, 670
- northern 464-468, 474
- Queensland 464, 466, 473, 670, 693-706, 897

- Queensland Department of Agriculture
and Fisheries 463
- Queensland University of Technology... 143
- South Australia 468, 472, 673
- south-eastern 672, 673, 685
- southern 469, 477
- Tasmania 671, 894
- University of Queensland 463
- Victoria 673, 689, 893, 897
- Western Australia...234, 239, 468, 472, 686,
893
- Australian sheep blowfly 313
- Austria 768, 897
- FAO/IAEA Insect Pest Control Laboratory,
Seibersdorf.....275, 285-288, 300, 339,
387, 389, 857
- Joint FAO/IAEA Division of Nuclear
Techniques in Food and Agriculture...94,
131, 138, 161, 172-175, 222, 225, 277,
279, 339, 390, 443, 516, 519, 522, 526,
561, 567, 574, 730, 903
- University of Natural Resources and Life
Sciences (BOKU) 795
- autocidal 349, 470
- control 198
- gravid ovitrap 347
- auto-dissemination 349, 469, 639
- stations 350
- autogeny 322
- automated
- camera traps 897
- detection 894, 900
- diagnostics 896
- identification 891
- monitoring 896-898, 900
- pheromone dispensers 891
- sex sorting 390, 751
- spray droplet analysis 327
- surveillance 889, 891
- systems 891, 898
- automation 134, 223, 335, 889-900, 908
- autopilots 905-907, 909
- systems 906, 907
- triple redundancy 906
- autosomes 844, 846
- autosomal distorters 850
- autosomal insertions 847
- aviation legislation 103, 906, 908, 909
- avocados 108, 173, 181, 520
- awareness 43, 171, 413, 541, 674-682, 758
- activities 356, 574, 704-706
- campaigns 543, 545, 705
- changes 713
- consumer 122
- environmental 437
- farmer 17, 28
- of risk 731
- programmes 133
- public.....27, 111, 223, 356, 568, 687, 725,
729, 741, 759, 833
- raising.....418, 568, 574, 674, 675, 699, 704-
706, 732, 757
- ## B
- backyards 38
- alternate hosts 197
- bait stations 135
- censuses 571
- habits 680
- host elimination 40, 216, 677, 680
- host risk 675
- hosts 34, 41, 520, 704, 899
- lakeview jasmine elimination 40
- orchards 37, 43
- permission to enter 704
- produce 705
- releases 41, 552
- traps 677, 689
- trees 38, 41, 118, 130, 899
- bacteria...40, 98-100, 236, 252, 409, 417, 449,
803, 812, 917-936
- facultative symbiotic 919
- Gram-negative 34, 99, 921, 922
- gut-dwelling 920
- intracellular 353, 409, 471, 919
- nitrogen-fixing 923, 925, 926
- pathogenic 658, 918
- phylloplane 149
- symbiotic 339, 444, 448, 449, 917-936
- toxins 343
- bacterial 372, 920, 922
- cells 812, 931
- clade 375
- degradation processes 436
- diversity 918
- endosymbionts 367, 370, 449, 932
- genomes 936
- infection 98, 99
- larvicides 352
- paratransgenesis 934
- phyla 917, 920
- restriction enzymes 648
- bacteriocytes 919
- baculovirus products 658
- Bahamas 563
- bait sprays 152, 154, 199, 218, 486, 529, 530,
671, 686, 880, 883, 910-912
- bait stations 154, 484, 486, 530, 531
- attract and kill 135
- self-treatment 259
- ballooning 788
- Baltic Sea 435
- banana 17, 30, 183, 284
- banding host trees 116
- Barbados 34

- bark beetles 923, 926
- barley 234
- barrier 145, 242, 309, 311, 315, 412, 655, 663, 669-689, 889-900
 - behavioural change 704, 705
 - biological 197, 199, 210
 - climatic 308
 - containment 166, 177-180
 - cultural 712
 - dispersal 863
 - export 171
 - institutional 674
 - islands 320
 - logistical 892
 - market access 671
 - mating 286
 - natural 300, 769
 - political 712
 - psychological 678
 - psychosocial 899
 - quarantine 181
 - reef 567
 - social 669, 678, 712
 - technical 153
 - trade 169, 173, 895
 - zones 552, 862
- bed nets 346, 641, 804, 825
- bees 588, 618, 624, 625
- beetles 505, 512, 926
 - Asian long-horned beetle 896
 - bark 923, 926
 - boll weevil 54-88
 - buprestid 510
 - Colorado potato beetle 930-933
 - dark black chafer beetle 924
 - dung 469
 - emerald ash borer 510, 512
 - false potato beetle 930, 933
 - Japanese beetle 896
 - Khapra beetle 896
 - lady beetles 12, 28
 - leaf beetles 510
 - leafroller weevil 935
 - longhorn 510
 - red palm weevil 539-550, 765, 766, 777, 924
 - staphylinid beetles 240
 - vedalia 657, 658
 - walnut twig borer 935
 - wood-boring 923, 926
 - wood-feeding 924
- behavioural
 - action 683
 - adjustment 679
 - change 679, 704, 705, 714, 725
 - ecology 143
 - fingerprint 897
 - interventions 705
 - locust phase change 767
 - resilience 825
 - science 670
 - studies 149
 - traits 782, 783
- Belgium 28
- Belize 34, 38, 43, 46, 175, 177, 307, 483-487, 565
- bell peppers 184, 520
- beneficial
 - bacteria 929-937
 - fauna 603, 605
 - insects 3, 12, 112, 124, 427, 597, 618-628, 823, 827, 828
 - mosquitoes 327, 328
 - organisms 655-665, 806
- benefit-cost 65, 471, 620
 - analysis 120, 177, 179, 282, 505, 556, 652
 - ratios 177, 179, 658
- benefit-sharing 655, 663
- Benin 17, 19
- Bhutan 143-146, 151-154
- biocontrol 3-14, 17-30, 655-665, 921
 - bacterial agents 934
 - cost 12
 - community 656, 663, 664
 - exchange of agents 655, 663-665
 - genetic resources 655, 663-665
 - of invasive pests 26, 655, 663
 - social benefits 664
 - techniques 12, 121, 122
- biodiversity 3, 4, 12, 120, 320, 351, 539, 562, 620, 621, 628, 656, 802, 810, 823
 - Cactaceae 565
 - faunal 617, 619
 - floral 618
 - insect 29
 - invasive pests 515
- biofix 582, 587
- bioinformatic pipeline 849, 850
- biological barrier 197-210
- biological control 122, 240, 328, 343
 - augmentative 3-14, 34, 41, 198-212, 218, 240, 328, 612, 613, 657, 659, 661
 - classical 17-30, 562, 655-665
 - classical of weeds 561-563, 658, 659
 - conservation 597, 618-628, 657-664
 - cost 12
 - disruption of 512
 - ecosystem services 617-621
 - entomopathogenic fungi 41-42
 - integration with SIT 197-212, 215, 409, 428, 613
 - market 655, 659, 660, 662
 - methods 112, 125, 337, 348
 - Nagoya Protocol 655-665
 - natural 26, 597, 657
 - risk analyses 655, 660

- biological insecticides
 aerial application..... 609
 granulosis virus..... 121
 biomass..... 427, 911, 914, 918
 biopesticide..... 395, 409, 510-514
 biophysical..... 17, 19, 674, 724, 899
 biopiracy..... 656, 657
 bioprospecting..... 656, 657
 bioremediation..... 921
 biosafety..... 356, 646
 tests..... 42
 training..... 719
 biosecurity..... 121, 505, 890, 895, 896, 900
 agencies..... 515
 priorities..... 687
 processes..... 514
 risk..... 464
 biosphere..... 917, 920
 biosynthesis..... 927, 928
 biotechnology
 industry sector..... 821
 modern..... 237, 645
 products..... 834
 regulations..... 820
 research..... 833
 strategies..... 796
 biowaste recycling..... 921
 birds..... 152, 325
 faeces..... 149
 frigate..... 566
 sanctuary..... 566
 shore..... 330
 bisexual strains..... 201-204, 686
 black-bodied cherry fruit fly..... 167
 black salt marsh mosquito..... 322
 black-legged tick..... 260
 blood..... 413, 463, 476, 796, 919
 seeking females..... 433-454
 bovine..... 447
 feeding..... 234, 237, 252, 288, 353, 389, 473, 710
 Hemotek feeding system..... 415
 meal..... 234, 235, 288, 322, 328, 340, 387, 389, 390, 415, 436
 pig..... 415
 samples..... 325, 326
 sources..... 720
 supply screening..... 710
 blueberries..... 582
 blueberry maggot..... 167
 Bolivia..... 466
 boll weevil..... 54-88
 eradication..... 59, 66, 77
 eradication programme..... 54
 foundation..... 54, 65
 Botswana..... 859, 861
 bovine..... 234, 447
 babesiosis..... 253, 254, 258
 boxes..... 223, 287, 752
 biodegradable carton..... 290, 291, 293
 boll..... 59
 cardboard..... 102, 223, 293, 574
 cold..... 63
 exported fruit..... 181
 holding..... 59, 102
 isothermal..... 287
 PARC..... 202-204
 refrigeration..... 202
 shipping..... 69, 574
 transport..... 287
 Brazil..... 34, 43, 168, 169, 187, 234-239, 305-314, 339-358, 464, 475, 564, 658, 710, 833
 Amapa..... 186
 Bahia..... 188, 356
 border with Uruguay..... 312
 Brazilian Association Apple Producers..... 215, 216, 224, 225
 Brazilian Ministry of Agriculture..... 186
 Brazilian Ministry of Health..... 342, 343, 357
 Brazilian National Committee of Biosafety..... 356
 EMBRAPA Grape & Wine..... 215, 224, 225
 Federal University of Rio de Janeiro..... 339
 Goiás..... 311, 466
 Manaus..... 350
 Moscamed Brasil..... 223
 Moscasul programme..... 188, 215-226
 north-eastern..... 186, 188, 223, 348, 356
 north-western..... 310, 312
 Pará..... 186, 311
 Paraná..... 216
 Pernambuco..... 188
 Piauí..... 311
 Plano Nacional de Controle da Dengue..... 342
 Projeto Aedes Transgênico..... 339, 345, 356
 Rio de Janeiro..... 348, 353, 655
 Rio Grande do Sul..... 215-225
 Roraima..... 466
 Santa Catarina..... 216, 219
 São Paulo..... 33, 215, 225, 307, 311, 357
 south-eastern..... 307, 345, 357
 southern..... 29, 188, 215-226, 466
 University of Campinas..... 305
 University of São Paulo..... 215, 222, 339
 Brazilian apple leafroller..... 216
 breeding techniques..... 819-823
 brown marmorated stink bug..... 121, 513
 brown planthopper..... 617-629
 brown-tail moth..... 935, 936
 buffalo..... 466, 469
 buffalo flies..... 463-477
 buffer..... 116, 200, 215, 258, 348, 521, 523, 526, 549, 863
 buffy coat technique..... 277
 building rapport..... 713, 715
 bunch rot..... 583, 599

- bunchy tops.....20, 21
 - Burkina Faso..... 286, 290, 768, 859
 - CIRDES.....279, 285-300
 - riparian forests..... 285, 289
 - Sidéradougou.....285
 - Burma..... 372, 444
 - burning..... 28, 239, 589
- C**
- cactus.....562, 572
 - moth eradication programme ..113, 561-577
 - ornamental.....563, 564
 - prickly pears..... 562, 563, 565, 575
 - producers of fruit and vegetable.....565
 - vegetation.....572
 - caimito.....491
 - Cambodia.....18-25
 - camels.....772
 - camera.....896
 - fitted traps.....897
 - fluorescence.....290
 - hyperspectral.....907
 - multi-spectral.....907
 - Cameroon.....932
 - Canada.....4, 225, 466, 555, 565, 821, 891
 - Agriculture Canada.....114, 665
 - British Columbia....111-125, 221, 706, 790, 897
 - Okanagan-Kootenay SIR Programme...111-125, 222, 706
 - Canary Islands date palm.....539-544
 - cancer.....87, 170
 - anticancer agents.....921
 - capacitance sensing.....897
 - carambola.....186
 - carambola fruit fly.....165, 168, 172, 186, 187
 - Carambola Fruit Fly Containment Programme.....188
 - Caribbean....161-189, 305-315, 347, 519-535, 562-566, 576, 767
 - Antigua.....563
 - Bahamas.....563
 - Barbados.....34
 - Basin.....520, 522
 - Cuba.....34, 43, 307-314, 353, 563, 576
 - Guadeloupe.....34
 - Jamaica.....34, 307, 308, 311
 - Leeward Islands.....562
 - Martinique.....34
 - Montserrat.....563
 - Nevis Island.....562, 563
 - Caribbean Agricultural Health and Food Safety Agency (CAHFSA).....187
 - Caribbean fruit fly.....167, 816
 - Caribbean Sea.....565, 566
 - carrageenan.....222
 - Cartagena Protocol on Biosafety.....646
 - cartographic techniques.....489
 - cascading effects.....25, 800
 - cassava.....17-29, 412
 - Africa.....18
 - crop management.....28
 - exports.....18
 - extra-floral nectar.....27
 - losses.....18
 - Southeast Asia.....17-20, 25, 29
 - witches' broom.....25, 26
 - cassava mealybug.....17-30
 - cattle.....233-244, 251-261, 463-477
 - African animal trypanosomosis.....276, 857
 - breeds.....283, 298, 858
 - buffalo flies.....463-477
 - cactus as fodder.....564
 - defensive behaviours.....236
 - farming systems.....282, 298
 - feedlots.....236
 - fever tick eradication.....258, 259
 - filarial nematodes.....464, 474, 475
 - gastrointestinal infections.....256
 - imported.....466
 - industry.....238, 463, 464, 468, 475
 - movement.....463, 476
 - movement controls.....469, 477
 - pour-on.....242, 276, 284, 294, 861
 - production.....277, 282, 465, 466
 - serological survey.....277
 - stable flies.....233-244, 913
 - ticks.....251-261, 464, 466, 468
 - tropical regions.....252
 - trypanocidal drugs.....296
 - trypano-tolerant.....282
 - vaccination.....252, 253, 257
 - Cattle Fever Tick Eradication Program.....258
 - Caucasus.....787
 - caya.....528, 529
 - celery.....234
 - cell lines.....476, 477, 851
 - Centers for Disease Control and Prevention (CDC).....408
 - autocidal gravid ovitrap.....349
 - bottle bioassay protocol.....327
 - light traps...324, 325, 434, 441, 452, 454, 455, 735, 740
 - Central America...34, 131, 165-188, 288, 296, 305-311, 340, 470, 564, 710-725, 883
 - Central American Initiative.....710
 - Central American Isthmus.....179
 - Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA).....172, 185, 519, 522, 536, 561
 - central coordinating body....686, 765, 777, 899
 - centralised
 - collection point.....771
 - control.....65
 - coordination.....540, 549, 777

- organizational structure..... 180, 777
- responsibility 766
- system 585, 770
- Centre for Agriculture and Bioscience
 - International (CABI)..... 18, 29, 660, 665
- centrifugal evaluation method..... 659
- cereals..... 514, 658, 768
- certificate of airworthiness..... 908-912
- certified..... 711, 907-909
 - organic..... 75, 123, 133, 607, 611
 - production units 43
- CGIAR 17-30
- Chagas 634
 - Andean Pact..... 710
 - Central American Initiative..... 710
 - Southern Cone 710
 - disease control 709-725
 - parasites 710
 - risk factors 710-724
 - transmission 636, 711
 - vector control..... 715-717
- chain of transmission 342
- chemical control..... 38-43, 122, 123, 151, 215-218, 242-244, 342, 437, 605, 610, 657
 - aerial application..... 59, 529, 606, 609
 - agents..... 243, 244
 - costs 12, 215, 217, 618
 - success rate..... 658
 - suppliers..... 244, 676
 - systems 4
- cherries 121, 124, 151, 671
- cherry of the Rio Grande 220
- chicken 722, 733, 736
 - coop 325, 326, 722
 - management..... 720-723
 - sentinel flocks 335
- chikungunya... 336, 339, 351, 354, 405-408, 810
 - epidemics..... 343
 - fever..... 340, 731, 810
 - outbreaks 634
 - virus..... 324, 325, 379, 635, 731, 919, 930
- children 434, 720
 - chemoprophylactic treatment..... 804
 - childcare centres 753
 - deaths..... 341
 - incidence of infection..... 710
 - mobilization of..... 345
 - seropositive..... 711
 - transmission in..... 712
- Chile... 131, 177, 181, 188, 222, 466, 535, 582, 597, 598, 710, 787, 869, 870, 880-885
 - Agricultural and Livestock Service (SAG)..... 180, 880, 887
 - Easter Island 180
 - northern 180
 - Santiago 594, 869, 880, 882-884, 887
 - University of Chile 594
- chilies 108
- chilled..... 449
 - aerial release 202, 291
 - flies..... 223, 287, 531, 913, 914
 - parasitoids..... 913
 - pupae 287, 420
 - release box..... 203
 - release machines..... 531, 913
 - release system..... 276, 293, 531
 - shipment 63, 449
- China... 34, 43, 121, 143-155, 171, 353, 373, 410, 444, 617-627, 671, 827, 907, 932
 - Beijing..... 143
 - Chongqing..... 144
 - Guangxi 144
 - Guangzhou 367-395, 409
 - Guizhou 144, 146, 153
 - Hangzhou 617
 - Hubei..... 143, 144, 153
 - Hunan 144, 153
 - hybrid cotton..... 60
 - northern 617, 619
 - Shanxi 144, 153
 - Sichuan..... 144-146, 153
 - southern 20, 617, 619
 - south-western..... 145
 - Sun Yat-Sen University 367, 386
 - Wolbaki Institute Biological Sciences ... 388
 - Wuhan 143
 - Yunnan 3-14, 22
- Chinese citrus fly..... 143-155
- chironomids..... 628
- chromosomes
 - bacterial 936
 - compound..... 471
 - deletion..... 851
 - homologous 814
 - non-Mendelian inheritance 650
 - ploidy..... 649
 - sex 845, 846
 - translocation 378, 382, 850
 - X chromosome 817, 843-852
 - Y chromosome 844-846, 850, 852
- citizens 319, 320, 336, 349, 543, 545
 - complaints 326
 - consultative committees..... 759
 - education 804
 - engagement..... 709, 710, 725
 - involvement..... 733
 - participation..... 737
- citizen science 729-741
 - initiatives..... 753
 - participation..... 260
 - projects 731, 732
- citrus... 34-46, 93-108, 130, 143-155, 168, 179, 491, 657, 676, 698, 733, 734, 912
 - grapefruit..... 33-37, 44, 46, 146, 168
 - industry... 37, 38, 93, 95, 106, 145, 180, 657, 676

- Key lime 36, 37, 39, 44, 46
- lakeview jasmine 40
- lemon 33, 40, 146
- mandarin 33-37, 44, 46, 145, 491
- navel orange 93-96, 146
- orange 33-40, 44, 46, 144-152, 168, 491
- Persian lime 36-40, 46
- production. 33-36, 44, 45, 143, 145, 153, 657
- sour orange 146
- tangelo 46
- tangerine 46, 146, 168
- trifoliate orange 146
- varieties 34, 36, 37, 46, 150
- citrus black spot 35
- citrus canker 35
- citrus greening 33-46, 914
- citrus tristeza virus 43
- civil aviation authority 102, 910, 915
- civil society 731, 741
- clades 257
 - bacterial clade 375
 - monophyletic 146
- climate-host-insect interaction 483, 485
- climate change... 111, 121, 125, 165, 166, 189, 336, 405, 463-477, 483-502, 618, 641, 730
 - impacts 768-770
- climate variability 252, 258
- climatic 17, 19, 219, 635
 - barriers 308
 - changes 633, 641
 - conditions 163, 169, 564, 733
 - models 640
 - oscillations 309, 311
 - scenarios 730
 - suitability methods 886
 - trends 860
- climes 633, 641
- CLIMEX model 468, 477, 886
- clines 860
- cobalt
 - blue pigments 150
 - cobalt-60 (⁶⁰Co) 102, 420, 447, 448
 - source 102
- Codex Alimentarius 646
- codling moth... 111-125, 216, 443, 706, 779-791, 896
 - damage 111, 112, 118, 123
 - granulosis virus (CpGV) 121, 125
 - mass-rearing 111, 114, 117, 120, 121
 - mating disruption... 113, 115, 117, 118, 121, 124, 125, 782, 785, 786, 790, 791
 - origin 112
 - virus production 112, 121
- co-evolutionary process 695, 703
- coffee 183, 484-499
 - berries 169, 489, 491
 - maturation 490, 491
 - phenology 491
 - production areas 486, 491, 495, 499
- cold chain 96, 101, 108
- collateral pest management benefits 119
- Colombia 188, 307, 314, 466
 - Córdoba 34
 - Medellín 353
- colonization... 286, 308-311, 410, 434, 446, 447
- Colorado potato beetle 930, 932, 933
- commensals 378, 917, 918, 920, 922
- communication... 56, 123, 139, 174, 342, 347, 540, 591, 597, 649, 652, 664, 676, 709, 715, 717, 770-776, 759, 810, 820, 889-900, 918
 - analogue 904
 - campaigns 351, 543
 - channels 698, 754
 - digital 904
 - long-range 904
 - module 905
 - networks 680, 699
 - plan 356
 - processes 700
 - satellite 777
 - range 904
 - science materials 685
 - strategies 344, 617-628, 684, 753
 - system 792
 - technologies 640, 896-898
 - tools 543
- community... 66, 124, 134, 135, 414, 892, 893
 - acceptance 470, 477, 724
 - apathy 704
 - awareness 706
 - biocontrol 656, 663, 664
 - champions 669, 683-685
 - commitment 357
 - design 639
 - driven changes 709, 710
 - education 413, 705, 747, 759
 - engagement... 321, 339, 343, 345, 356, 418, 700-702, 717, 721, 741, 747-759
 - engagement literature 706
 - engagement national plans 638
 - engagement principles 749
 - engagement programmes 749
 - engagement strategy 413, 757
 - grower 63, 66, 138
 - health agents 342, 346
 - involvement 634, 706
 - jurisdictions 112, 120
 - leaders 418, 716, 757
 - led enforcement 684
 - members... 344, 347, 669, 709, 710, 716-720
 - microbial 236, 920
 - participation 344, 346, 418, 428
 - producer 54
 - recruitment 724
 - representatives 116, 701
 - scientific 353, 355, 409, 515, 805, 852

- community-based
 - approach 114, 724, 737
 - mosquito surveillance 731-733
 - natural resource management 695
 - participation 343
 - programme 114, 124, 709-725, 833
 - strategy 711
 - vector control 345
- community-centred
 - area-wide pest management 111
 - intervention 720
- company 3, 28, 61, 356, 543, 897, 907, 914
 - competitiveness 120
 - private 95
 - public 540
- comparative
 - advantage 169, 903
 - analysis 775
 - approach 651
 - attractiveness 781
 - genomics 936
- composting 589, 722
- conditional 688
 - expression systems 850
 - hosts 173, 182
 - lethal 474, 815-817, 826
 - participation 681
 - phased approach 275, 279, 859
 - sterility 367, 370
- conflict 679, 706, 718, 771, 858
 - management 702
 - messaging 751
 - regulatory framework 122
- conidia 42, 932
- connectivity surface 862, 864
- containment 113, 175, 189, 484-489, 506, 514, 552, 555, 559, 564, 568, 593, 686
 - activities 576
 - barrier 166, 177-180
 - efforts 559
 - engineered traits 650
 - laboratory 587
 - levels 646, 852
 - programme 51, 53, 63, 81, 88, 186, 188
 - strategies 62, 489, 852
 - systems 559
- contaminant 58, 370
 - females 367, 369, 382, 388, 390-395
- contamination 120
 - bacterial 100
 - dye particles 290
 - environmental 112
 - females during mating 349, 350
 - females 381, 387, 391, 426, 427, 447, 815
 - food with genome-edited insects 831, 832
 - GMOs in food 822
 - larval habitat 349, 350
 - wild population with marker 824
- contingency planning 546, 770
- Convention Biological Diversity (CBD) 646, 655-665
- copulation 94, 149, 408, 492
 - forced 447
 - scar 294
- corn 658, 893
 - bait 259
 - corn-cob granules 437
 - oil 437
 - popcorn strain 473
- corn earworm 896, 930
- cosmetics 564
- Costa Rica 168, 175, 183, 234-241, 307, 711
 - INTA 913
- cost-benefit 65, 471, 505, 620
- cost-effective 139, 257, 282, 370, 394, 407, 679, 792, 813, 895, 898, 900, 913
 - aerial spraying 606
 - area-wide approach 254, 793
 - disease-vector control 343, 638
 - mass-rearing 137, 368, 391, 814
 - methods 98, 112, 510
 - strategy 172
 - tools 510
 - vaccines 253
- costs 12, 14, 54, 112, 124
 - administrative 117
 - aerial application 440
 - aerial release 103
 - all-terrain vehicles 102
 - biocontrol 12, 665
 - buffalo flies 464
 - chemical control 12, 215, 217, 618
 - commercial traps 153
 - dengue 341, 406
 - eradication 180, 283, 513, 865
 - facilities 12, 114
 - fitness 369, 371, 376-378, 380, 385
 - horn flies 464
 - indirect 112, 341, 406, 634
 - insecticides 12, 218
 - invasive species 810
 - labour 12, 889
 - locust survey and control 774
 - long-term 505
 - maintenance and operational 114, 910
 - mass-rearing 12, 97, 137, 222, 377, 448
 - mating disruption 557
 - medical 341, 634
 - non-communicable diseases 162
 - outbreaks 870, 894, 895, 898
 - per acre foliar sprays 35
 - perceived costs 679, 689
 - pest management 512
 - pesticides 810
 - programme 871, 885, 896
 - releasing 12, 54

- SIT409
 - transaction698-700
 - trapping.....56, 896
 - vector-borne diseases.....634
 - costs and benefits..112, 238, 384, 594, 677, 679
 - cotton..56-85, 658, 777, 779, 780, 784, 785, 790
 - Bt*-cotton.....51-87, 785, 790, 899
 - hybrid cotton.....60
 - organic.....66, 69
 - Pima cotton.....56, 66, 67, 69, 74, 75, 78
 - refugia.....51, 60, 61, 78, 87
 - transgenic.....54, 60, 78
 - upland cotton.....62, 69, 74, 75
 - cotton bollworm.....658
 - cotton leafworm.....935, 936
 - crickets.....620
 - greenhouse camel cricket.....924
 - CRISPR-Cas.....155, 355, 443, 471, 648, 650, 796-799, 806, 812-822, 829, 848-850
 - crop
 - cropping systems23, 26, 506, 658
 - damage.....104, 106, 123, 768, 783
 - destruction65, 370
 - export.....108, 131, 183
 - horticultural145, 164, 167, 514
 - hydric stress.....907
 - losses4, 97, 104, 130, 131, 145, 810, 823
 - management.....28, 30, 125
 - management systems601
 - monitoring670
 - pest consultants.....676, 696, 699-702
 - production.....238, 664, 765, 822, 858
 - protection.....17, 135, 787, 789, 791, 891
 - residues.....233-235, 244
 - stages.....64, 590, 619-621, 627, 628
 - vegetation index.....907
 - vulnerability.....620
 - yield.....3, 4, 18, 29, 810
 - cross-border
 - collaboration639
 - migration651
 - cross-breeding.....820, 858
 - cross-fertilization.....798, 800
 - cross-resistance.....112, 313
 - cross-sectoral638
 - crowdfunding campaign.....739
 - crowding.....101, 384, 394, 421
 - cryptic.....553
 - breeding sites.....331, 748
 - habitats.....331, 350, 445, 470
 - species.....217, 222
 - Cuba34, 43, 307-311, 314, 353, 563, 576
 - cultural
 - aspects255
 - barriers.....712
 - context.....699
 - control.....35, 40, 51, 64, 529, 530, 605, 608, 791
 - dimension646
 - factors of risk.....724
 - management243
 - measures.....544, 700
 - methods238, 239, 243, 244, 783
 - norms.....716
 - plants565
 - practices.....64, 115, 152, 684
 - techniques.....111
 - curricula321, 543
 - cuticular hydrocarbons223, 237, 465
 - cyclical
 - joint reflective process.....709
 - transmission.....282, 300
 - vectors861
 - cyclone770
 - cytochrome290, 313, 465
 - cytoplasmic incompatibility.....353, 367-395, 406-428, 471, 472, 732, 747-759, 919
 - bidirectional.....381, 472
 - unidirectional.....381
- D**
- daily displacement291
 - dark black chafer beetle.....924
 - data flow.....889-900
 - database..297, 326, 351, 499, 547, 575, 664, 898
 - electronic135, 890
 - global eradication505-515, 870
 - Integrated Surface Database880
 - online.....506, 740, 893
 - regional surveillance.....172
 - spatial772
 - deadliest animals730, 741
 - decentralisation.....342, 357
 - decision algorithms.....551-559
 - decision-making...39, 106, 171, 276, 483-502, 506, 523, 549, 550, 556, 558, 587, 626, 676, 702-706, 717, 799, 860
 - by consensus.....297
 - community involvement.....706
 - farmer622
 - informed821
 - joint702
 - process...280, 297, 343, 485, 488, 546, 638, 821-835
 - strategic284
 - tool502
 - women28
 - dedicated staff701, 859
 - defoliation552
 - degradation926, 927
 - bacterial436
 - catechol.....933
 - cellobiose.....927
 - cellulose.....924
 - foreign DNA.....812, 813

- hemicellulose..... 924
- land..... 298
- lignin..... 923, 927
- lignocellulose..... 924
- nutrients..... 917, 919, 922, 927
- pathways..... 928
- pheromone..... 780
- polysaccharide..... 927
- quality..... 103
- degree-day..... 484, 492, 880-885
 - calculations..... 870, 882-884, 886
 - generation..... 885, 886
 - models..... 582, 587-591, 882-884
- delimitation...306, 484, 506, 513, 519-522, 544, 570, 891
 - area..... 39, 584
 - grid..... 555, 557
 - incursion..... 514
 - populations..... 510
 - surveys..... 554
 - trapping...520, 526, 531, 554, 557, 588, 589
- delivery chains..... 773
- demographic..... 869, 873
 - analysis..... 498
 - changes..... 308
 - factors..... 634, 639, 896
 - processes..... 309
 - projections..... 483
- dengue...339-358, 386, 406-419, 633-635, 711, 810, 919, 930
 - control..... 342-347, 357, 747-759
 - fever..... 319, 340, 344
 - haemorrhagic fever..... 341, 810
 - management..... 748, 749
 - outbreaks..... 346, 748
 - prevention volunteers..... 757
 - serotypes..... 747
 - transmission..... 341, 348, 747, 748
 - vaccine..... 748
 - virus..... 325, 340, 354, 410, 731, 931
- density-dependent
 - action mode..... 60
 - management tool..... 604
 - processes..... 380
 - response..... 27
- deregulation..... 589, 590, 593
- derelict orchards..... 111, 115, 704
- Descartes, R..... 805
- desert locust..... 172, 765-777
 - aerial campaigns..... 768
 - area-wide management..... 765
 - biology..... 766
 - breeding areas..... 766-769
 - early warning system..... 766-777
 - forecasting..... 766-777
 - gregarisation..... 767, 768
 - habitats..... 766-772
 - hoppers..... 767, 768, 771, 775, 776
 - migration..... 767-770
 - monitoring..... 770-777
 - plague dynamics..... 768
 - plagues..... 768-770, 772, 776, 802
 - population dynamics..... 770
 - preventive control strategy..... 770
 - recession area..... 770, 776, 777
 - seasonal breeding areas..... 766, 769
- Desert Locust Information Service (DLIS)... 766-777
- desiccation..... 451, 473
- destruction..... 589
 - cattle..... 253
 - crop..... 65, 370
 - host fruit..... 530
 - infested trees..... 540, 544
 - methods..... 589
 - natural enemies..... 4
- detect & avoid (DAA)..... 905-908, 915
- detection
 - methods..... 507, 508, 544, 582, 587, 593
 - tools..... 56, 513, 515
- detergent..... 42, 152
- detritivore species..... 618
- development risks..... 795, 797-799
- dextrinisation..... 99
- diagnosis..... 388
 - by molecular techniques..... 40
 - clinical..... 40
 - educational..... 713
 - phytosanitary..... 39
 - visual..... 40
- diagnostic..... 43, 298, 618
 - automated..... 896
 - capacities..... 626, 627
 - facilities..... 674
 - skills..... 628
 - testing..... 804
- diamondback moth..... 646, 833, 924-930, 933
- diapause..... 71, 436, 475
 - overwintering..... 146
 - pupal..... 143-148, 153, 583
 - synchronised..... 155
 - termination..... 148
 - transition..... 148
- diet
 - dispensing machine..... 100
 - extruder..... 98-100
 - induced marker..... 58
 - larval..... 97-104, 222, 415, 612, 929
 - preparation..... 58, 97, 98, 100
- diffusion..... 876
 - coefficient..... 876
 - models..... 876
 - innovation..... 680
 - knowledge..... 28, 740
 - parameter..... 877
 - stratified..... 556

- digital..... 489, 499, 904, 908
 agriculture technology 891
 diagnostic system..... 39
 elevation model..... 437, 439
 information systems..... 891
 media..... 757, 759
 record-keeping..... 899
 diploid species 732
 disease 33-46
 diagnostics 43, 627
 human 260, 736, 809
 management..... 43, 253, 893
 mosquito-borne..... 319, 339, 406, 731, 732
 non-communicable...161, 162, 170, 171, 189
 prevention 43, 640, 643, 720
 reservoirs 252, 258, 259, 709
 resistance 34
 tick-borne..... 251-262
 tolerance 34
 transmission..... 337, 339-358, 411, 426, 474, 636, 712, 714, 758, 818, 830, 859
 vector-borne..... 341-345, 368, 405, 633-642, 731, 826, 835, 852, 937
 viral..... 3, 4, 406, 635, 738, 810
 disease vectors..... 36, 251, 254, 327, 337, 367, 410, 710, 736, 765, 809, 850, 871, 918, 920, 937
 dispersal..... 39, 197, 222, 233, 309, 343, 436, 450, 491, 567
 aerial 452
 avoid 545, 602
 barriers..... 863
 behaviour..... 436, 573, 912
 biological potential 733
 capacity..... 27, 289, 300, 551, 660, 832
 centre 279, 285, 287
 distance..... 235, 244, 563
 gene 650
 homogeneous..... 289
 least-cost dispersal paths..... 862
 long-range stochastic 556
 man-assisted 541
 natural 306, 563, 787
 prevention..... 544, 570
 rate..... 289, 515
 sequential..... 283
 short-range..... 556
 system..... 434, 444
 dissemination..... 165, 345, 354, 410, 651, 859
 dissenting views..... 758
 dissimilar arbiter..... 906
 distribution...4, 19, 39, 68, 102, 108, 139, 143-146, 186, 223, 278, 309, 311, 314, 344, 464-471, 483, 499, 505, 514, 551, 623, 698, 700, 734, 759, 766, 773, 877-881, 917
 age 872, 880, 881
 area-wide 135
 bed nets..... 804
 bimodal..... 731
 brochures..... 754
 chain 244
 clustered 55
 geographic..... 17, 21, 34, 61, 166, 222, 280, 305, 311-315, 522, 861
 global..... 252, 635, 636
 mapping..... 20, 677, 721, 787
 maps 61, 599-601, 609-611
 modelling..... 857-866
 models 276, 292, 296, 498, 730
 natural range..... 163-165
 density 876
 genetic variability 306, 311
 outbreak..... 520-523
 pamphlets 739
 patchy 919
 posters 623
 potential..... 485, 857, 898
 spatial 198, 413, 528, 566, 731, 737, 781
 sterile insect..... 61, 68, 225, 486, 532, 686
 trap 584
 uniform..... 609, 874
 vector..... 342, 633, 641
 ditches
 mosquito 328-330
 roadside 323, 324, 330
 DNA cleavage...355, 650, 798, 799, 812, 846, 847, 849
 DNA repair mechanisms 649, 814
 homology-directed repair..... 648, 798, 811, 813
 microhomology mediated end joining... 849
 miss-repair..... 849
 non-homologous end joining..... 648, 649, 798, 811, 813, 849, 851
 dogs 242, 720, 722, 723
 brown dog tick..... 256
 heartworm..... 322
 Dominican Republic...34, 164, 177, 185, 186, 307-310, 483, 519-536, 563
 eastern 521, 522, 527, 532
 La Altagracia .. 188, 521, 524, 527, 528, 531
 La Romana 521, 524, 528, 532
 Moscamed-RD..... 519-522
 Punta Cana..... 519, 520, 525, 528-532
 dormancy..... 475
 dose uniformity ratio (DUR) 390
doublesex..... 818, 829
 draught power..... 858
 drift
 insecticide..... 607
 larvicide..... 331
 passive fliers..... 767
 sterile fly..... 532
 drones 223, 260, 421, 450, 777, 904, 908
 fixed-wing 774
 portable rotary 775
 rotary-wing 774

E

- ear tags.....242
- early detection....130, 514, 535, 564, 570, 577, 593, 770, 891
- early warning system ...485, 765, 766, 770-777
- eastern cherry fruit fly167
- eastern equine encephalitis322
- eco-bio-social
 - baseline information717
 - determinants720
- ecological
 - benefits3, 12, 154
 - communities23
 - conditions ...19, 23, 198, 767, 770, 774, 775
 - connectivity862
 - consequences834
 - engineering617-628
 - factors....344, 483-485, 491, 492, 499, 502, 782, 783, 920
 - footprints169
 - impact355, 563, 757, 831
 - importance561
 - islands300, 861
 - knowledge4, 28, 860
 - niches.....565, 799, 851, 921
 - plasticity27
 - shell game.....491
 - soundness.....343, 638
 - strategies628, 852
 - studies.....4, 149
 - value563
 - variables.....498
 - zones.....169, 285
- economic burden
 - agricultural pests.....852
 - animal and human diseases.....858
 - dengue406
 - vector-borne diseases.....406
- economic impact....18, 33-35, 65, 93, 161-163, 280, 298, 406, 563, 694
- economic thresholds104, 236
- economies of scale.....121
- ecosystem276, 427, 827, 859
 - fragile4, 282, 298
 - health283, 506
 - impact427
 - management strategies.....711
 - services.....18, 617-621, 627, 628, 657
 - urban.....289
- Ecuador.....177, 188, 307, 466
- education116, 121, 171, 343, 627, 676, 706
 - community413, 705, 747, 759
 - campaigns350, 413, 674, 823
 - entertainment618, 622, 624, 628
 - farmer107
 - farmer-to-farmer video29
 - funding.....689
 - health programmes345
 - integrated health342
 - materials722
 - programmes133, 687, 720
 - public education....41, 238, 244, 319, 321, 339, 345, 418, 419, 550, 687, 804, 823
 - public health638, 710
 - regular educational activities704
 - school involvement.....321, 740, 753, 754
 - science-based.....752
 - situational analysis.....713
 - reduce enforcement actions116
- egg...4, 25, 64, 68, 164, 217, 294, 322, 323, 339, 347, 367, 390, 407, 492, 598, 621, 767, 877
- bank452
- batches.....234, 436
- bubbling.....136
- drought-resistant.....473, 828
- hatch....95, 136, 147, 154, 222, 386, 392, 394, 409, 414-417, 423-426, 612, 828
- infertile433, 443-445, 452, 470, 472
- irradiated.....225
- laying150, 151, 252, 387, 775
- masses510, 553-556, 788
- parasitoids.....612, 628
- production.....58, 136, 389, 390, 447
- sheets.....97, 100, 112, 121
- sticks.....563-575
- Egypt.....52, 540
- El Niño Southern Oscillation (ENSO).....166, 483-498
 - El Niño years166, 483, 502
 - El Niño/La Niña cycle.....497
 - La Niña years.....483, 502
 - signal499
- El Salvador.....178, 179, 183, 711
- elected
 - authorities298
 - community representatives116
 - mosquito commissioners320
- electron microscopy.....925
- electronic
 - data collection.....893, 894
 - data entry892
 - database135, 890
 - spreadsheet894
- electrostatic spraying907
- elimination.....408, 858, 862, 866
 - breeding sites342-346, 354
 - detectable larvae65
 - development substrates.....239
 - females814, 816, 817, 824
 - harmful side effects804, 816
 - host trees.....529
 - infected trees.....33, 35, 46
 - lakeview jasmine40
 - larval sources.....345

- larval substrates239
- mechanical339
- population...371-373, 381, 386, 391-395,
443, 471, 830, 859
- programme800
- quarantine pest832
- species823, 827, 830, 834
- strategy795, 804
- vector357, 711, 866
- vector-borne diseases635, 639
- wild hosts530
- ELISA testing61, 326
- eLocust772-775
- embryogenesis217
- embryonic816
 - arrest283, 294, 813
 - death367, 370
 - lethality732
 - microinjection375, 385, 386, 476, 477
 - stem cells811
- emerald ash borer510, 512
- emergency response519, 535
 - capacity185, 189, 520
 - drills172
 - emergency eradication plan180
 - measures186
 - programme583-585
- empowerment719, 721
- enabling environment693, 695, 706
- encephalitis
 - eastern equine322
 - Japanese635, 636
 - Saint Louis323
 - tick-borne253, 635
- endectocides256, 639
- endemic.....18, 144, 464, 467, 539, 712, 810,
891, 895, 896, 900
 - areas342, 353, 477, 671, 675, 685
 - dengue countries340
 - disease control agents346
 - fruit flies167, 168, 189, 669-673, 677
 - hyperparasitoids19
 - malaria regions796, 804
 - prickly pear cacti565
 - primary parasitoids19
 - vector-borne diseases...341, 405, 428, 640,
858
 - yellow fever340
- endonuclease...471, 798, 812, 813, 817, 829,
843, 846-852
 - scissors811, 847
 - system848
- endosymbiont-infected367, 371-385, 394
- enforcement35, 115, 121, 677
 - back-up mechanism706
 - burden705
 - community-led684
 - dedicated116
- legislative measures341, 549, 675
- phytosanitary strategies189
- regulatory54, 65
- quarantine35
- systems243
- engagement .550, 593, 652, 677, 683, 689, 833
 - activities676, 749, 750, 754
 - community...321, 339-345, 356, 419, 635,
700-702, 716, 717, 721, 741, 747-759
 - literature706
 - national plans638
 - principles749
 - procedures709
 - programmes749, 753
 - stakeholders256, 418, 675, 804
 - strategy413, 757, 759
- entertainment-education618, 622, 624, 628
- entomopathogenic
 - bacteria658, 935
 - detergents42
 - fungi41, 42, 240, 932
 - nematodes240, 932
- environmental management .639, 720-723, 748
- environmental risk
 - analyses660
 - assessments655, 660, 661
- environment-friendly.....93, 108, 279, 858
 - alternatives215, 628
 - approach257
 - biopesticide395
 - eradication861
 - international trade131
 - laws628
 - management strategies349
 - pest control3, 163, 828
 - pest management122, 662
 - sterile insect technique...112, 405, 407, 428,
484, 686, 789
 - suppression tool411
 - tactics171, 283
 - technologies125, 221, 470, 484
- epidemic...162, 341, 343, 347, 352, 419, 634,
637, 638, 641, 810
- epidemiological339, 635, 642, 713
 - outcome643
 - projects346
 - surveys341
 - surveillance33, 37, 342, 575-577
- epidemiology20, 39, 251, 254, 713
- eradication
 - arthropod programmes505-515
 - attempts505, 506, 509
 - carambola fruit fly187
 - codling moth216, 223
 - declaration of534, 535, 593, 869-886
 - efforts...65, 66, 78, 258, 506, 514, 564, 570,
582, 585, 791, 870, 871, 883
 - European grapevine moth581-594

- fruit flies 133, 179, 506
- funding 78
- global 505-515, 830, 870
- gypsy moth 511, 555, 557
- local 472, 826, 827
- malaria 805
- measures 139, 869, 872
- Mediterranean fruit fly.... 174, 175, 180, 181, 185, 188, 519-536, 869-886
- model 870
- outbreaks 577, 604, 869
- outreach 592
- pink bollworm 51-87
- post-eradication 57, 533, 588, 593, 594
- pre-eradication 56, 59, 522, 523
- procedures 258, 259
- process 522, 523, 530, 536
- programme length 870, 871
- programmes 53, 139, 177, 184, 475, 505-515, 554-557, 870-886
- red palm weevil 539-550
- side effects 800
- simulation 869, 871
- strategies 173, 279, 284, 472, 489
- success 510, 514, 515, 555
- tools 60, 507
- treatments 79, 551, 555
- tsetse 282, 283, 290, 296, 297, 300, 861, 913
- vector 372, 862
- establishment... 72, 132, 216, 276, 319, 345, 468, 455, 506, 549, 601, 618-621, 694, 822
 - areas of low pest prevalence... 174, 179, 183, 184, 188, 189, 198
- area-wide programme 261, 699
- biocontrol agents 17-30, 658, 660
- disease 44, 172
- facility 223, 224, 285
- invasive species... 161, 166, 189, 562, 582, 583
- networks 703
- non-native species 168
- pathogens 919
- pest... 62, 82, 161, 165, 168, 172, 175, 180, 185, 468, 505, 541, 562, 575, 583, 598, 870, 871, 885
- pest free areas... 133, 171, 173, 179-184, 188, 189, 198, 484, 486, 871
- quarantine area 588
- regulatory framework 174
- regional areas of control 33-43
- Wolbachia* 381, 387, 426, 448, 477
- ethics 645, 652, 722, 810
 - bioethics 822
 - aspects 822
 - committee 715
 - concerns 718
 - considerations 715, 809
 - dimensions 646, 652
- discourse 805
- discussion 823
- institutional approval 413
- reflection 805
- scrutiny 237
- Ethiopia 859, 913
- ethyl acetate 545
- etiology 20, 474
- eukaryotic 917, 925
 - acquired immune system 812
 - diversity 918
 - evolution 918
 - life 917
- Europe... 93, 94, 164, 165, 253, 257, 340, 405, 406, 434, 466, 540, 552, 565, 582, 587, 626, 659, 661, 729-731, 801, 810, 827
 - central 166
 - continent 730
 - eastern 166
 - European Centre for Medium-Range Weather Forecasts (ECMWF) 776
 - market 659
 - northern 434
 - southern 166, 770, 787
- European cherry fruit fly 151, 373
- European grape berry moth 594
- European grapevine moth... 581-594, 597-613, 779, 787
- European red spider mite 216
- European Union 131, 731, 787, 819, 822
 - biocide directive 443
 - European Aviation Safety Agency (EASA) 909
 - European Community 541
 - European Centre for Disease Prevention and Control (ECDC) 731, 810
 - European Court of Justice (ECJ) 819, 821
 - European Environment Agency 810
 - European Food Safety Authority (EFSA) 649, 820
 - food safety public standards 171
 - GM moratorium 821
 - genetically modified organisms 410, 819
 - Scientific Advice Mechanism (SAM) 820
 - vector-borne diseases 731, 810
- evolution 155, 313, 341, 553, 929
 - deliberate steering 802, 805
 - eukaryotic 918
 - human evolution 797
 - resistance 372, 829
 - resistance alleles 809, 818, 829
 - Sculpting Evolution 802
- evolutionary 146, 801
 - adaptability 799
 - changes 802
 - co-evolutionary patterns 919
 - co-evolutionary process 695, 703
 - fact 355

- history 936
 - instability 798
 - mechanism 796
 - pitfalls 818
 - processes 918
 - relationships 309, 312
 - stable gene drive 798
 - success 917, 922
 - tug of war 844
 - exclusion 186
 - activities 531
 - assays 29
 - infrastructure 880
 - measures 505, 515
 - programme 51, 53, 57, 63, 81
 - strategy 62
 - zones 674, 677
 - exoskeleton 918
 - exotic
 - beneficial organisms 655
 - biocontrol agents 659
 - cattle 298, 858
 - commodities 505
 - diseases 336
 - pathogens 641
 - pests 520, 891, 894, 895, 898, 900
 - ungulates 258
 - expectations 262, 308, 677, 680, 685, 688, 702, 823, 898
 - market 702
 - stakeholder 122, 124, 139, 704, 834
 - experiential learning 683
 - export 18, 93, 94, 97, 106, 107, 164, 167, 168, 170, 177, 181-189, 210-212, 519-522, 607, 670, 671, 822, 832
 - ban 185, 521, 534, 535
 - barriers 171
 - competitiveness 133
 - crops 108, 131, 183
 - industries 131, 180, 582
 - issues 582, 583
 - markets 121, 130, 131, 169, 171, 174, 179, 534, 565, 671, 698
 - natural enemies 655, 663
 - pests 664, 665
 - phytosanitary requirements 173
 - protocols 684
 - revenue 821
 - sterile moths 122
 - value chains 198
 - express mail carriers 165
 - extension 5, 10, 623, 627, 628
 - agencies 787
 - agents 627, 658, 777
 - campaigns 28, 29
 - officers 626, 669, 672
 - personnel 590, 592, 676, 684
 - programmes 17, 674
 - range 467, 476
 - rural bureaux 28
 - services 9, 216, 251, 256, 694, 703
 - support 702
 - extinction 371, 380, 407, 473, 507, 555, 556, 799
 - Allee effects 554
 - threshold 554
- F**
- Fabre, Jean-Henri 779
 - face fly 234
 - facilitators 669-685
 - faecal residues 599
 - fairness 677, 681, 682
 - fall armyworm 765, 766, 777, 896, 907
 - false codling moth 93-108, 113, 121, 291, 443
 - false potato beetle 930, 933
 - fast-moving consumer goods 626
 - feasibility studies 275, 279, 280, 300, 866
 - fecundity 217, 286, 386, 415, 598, 603, 880
 - female killing systems 471, 844, 845
 - feminization 815, 919
 - fermentation 589, 920, 925
 - fermenting materials 234, 236
 - fertilizer 152, 619, 623, 624, 907
 - rates 623
 - supplements 24
 - treatments 35
 - field cages 94, 223, 286, 287, 387, 450, 473, 789
 - field-by-field 783
 - approach 114, 871
 - basis 52, 59, 62, 859
 - pest control 859
 - filariasis 372, 444, 472, 635, 636, 639
 - filter rearing systems 830
 - filth flies 233, 234, 240
 - finés 345
 - firebrat 925, 927
 - fish 330, 343
 - invasive 351
 - larvivorous 350, 351
 - meal 415
 - mosquito 327, 328
 - zebra 848
 - fitness 24, 28, 237, 355, 796, 816, 817, 877, 917, 919
 - advantages 474, 930
 - characters 473
 - costs 369-385
 - disadvantage 473
 - effects 471, 473
 - factor 476
 - host 376, 473, 934, 937
 - parameters 928, 935
 - reductions 473

- flight...202, 325, 453, 532, 552, 555, 563, 590,
 591, 603, 604, 609, 610, 911
 ability.....136, 288, 531, 571, 928
 casting.....57
 controller.....905, 906
 cylinder.....288, 289
 drone.....775
 duration.....903, 905, 912
 elevation.....908, 912
 endurance.....905
 Flight Termination System.....907
 incapability.....552
 lines.....211, 440, 913
 locust swarms.....766-771, 776
 mill.....235, 787
 path.....914
 range.....324, 332, 356, 442
 recordings.....56, 69
 routes.....440
 speed.....335, 910
 ultralight pilot license.....909
 unmanned aircraft.....904
 floodplains.....433-455
 flowers.....62, 491, 751
 corollas.....598
 grapevine.....582, 583, 599
 nectar.....23, 624, 628
 olive.....582
 rice bunds.....618-628
 ornamental.....733
 sesame.....628
 strips.....618, 621
 fluorescent dye.....290, 451
 fly emergence and release facilities...189, 202,
 223, 531, 914
 fodder.....564, 565
 fogging.....414, 420, 859, 907
 food...161-163, 202, 220, 420, 436, 446, 447,
 564, 565, 618, 628, 773, 804, 819, 891
 baits.....151, 152, 523, 545, 671
 degradation.....919-922
 deprivation.....927-929
 dye.....58, 104
 chain.....427, 800, 827, 830
 GMO contamination.....822, 832
 insecticide residues.....112, 120
 production.....169, 506, 514, 722
 safety.....171, 174, 831
 security...18, 94, 108, 133, 162, 172, 515,
 765, 768, 777
 transport.....277
 Food and Agriculture Organization of the
 United Nations (FAO)...17, 19, 29, 162, 163,
 174, 183-186, 275, 277, 279, 299, 300, 353,
 519-523, 536, 567, 660, 765-777
 farmer field schools.....28, 29, 625
 FAO/IAEA...94, 131, 138, 161, 172, 174,
 175, 222, 225, 275, 277, 279, 300, 339,
 369, 387, 389, 390, 443, 516, 519, 522,
 526, 561, 567, 574, 730, 857, 903
 FAO technical cooperation projects...174,
 175, 183
 FAO-WHO International Code of Conduct
 on Pesticide Management.....626, 628
 formulations.....62, 119, 327, 929
 artificial diet.....154
 attract and kill.....66
 controlled release.....57, 61
 degradability.....781
 flowable.....604
 fungal.....42
 injectable.....258
 insecticide.....242, 331, 333, 639
 low-rate.....61
 mating disruption.....582, 587, 780-792
 microdispersibles.....786
 pathogen.....240
 plastic matrix.....780
 rate of release.....792
 slow-release.....780
 trap lure.....57
 ultra-low volume.....859
 waxy emulsion.....780
 France.....186, 542, 927
 Camargue.....800
 CIRAD...275, 279, 288, 292, 299, 300, 857
 EID Méditerranée.....912
 French Polynesia.....353, 373, 409
 iMoustique.....732
 Institut de Recherche pour le
 Développement (IRD)...279, 283, 300,
 857
 La Réunion.....241, 353, 373, 408
 regulation unmanned aerial systems.....904
 University of Montpellier.....857
 free-riders.....238, 669, 676, 681, 699, 705
 freezing.....166, 415, 934
 French Guiana.....172, 186, 188
 Frequency Hopping Spread Spectrum.....904
 fresh market.....35
 agricultural commodities.....582, 583
 fruit.....171, 870
 friction models.....300, 857, 861-863
 Fried competitiveness index.....284, 289
 frost.....80, 467, 475, 476
 fruit
 international export market.....131
 mimicking traps.....150-152
 stripping.....116, 590, 591, 875, 880
 fruit flies...113, 130, 131, 150-153, 163-189,
 197-212, 215-225, 353, 505-514, 669-682,
 693, 732, 802, 844, 848, 889-899, 910, 913-
 915, 926
 invasive.....133, 186, 535, 536, 884
 non-native.....133, 180
 sterile.....135, 199, 200, 914