

public engagement 419, 749
 plans 345
 sessions 757
 public health 251, 256, 260, 349, 664, 724, 749, 810
 benefits 757
 entomology 634, 638, 640
 Europe 730
 implications 710
 importance 252, 253
 pests 407
 problems 340, 341, 406, 732, 858
 programmes 261
 relevance 843, 849
 sector 261
 services 350
 threat 741
 value 633, 634, 642, 643
 volunteers 420, 421
 veterinary 257
 workers 642, 832
 pupal 148, 217, 220, 224, 751
 case 147, 154
 colour markers 816
 diapause 143, 144, 147, 148, 153
 irradiation 287, 387, 388, 390
 metamorphosis 148
 mortality 155, 350
 overwintering 463, 466, 469
 parasitoids 240
 production 136
 stage 137, 146, 220, 375, 416, 420, 447, 475, 495, 499, 598, 928, 929
 survival 495
 weight 136, 928, 929

Q

quality control 388, 415, 424
 analyses 558
 management system 129, 222
 manual 136, 202
 officer 134, 135
 parameters 136
 procedures 288
 protocols 658
 tests 202, 288, 571
 quarantine 139, 469, 497, 522, 871, 584, 880
 area 585-589, 602, 883
 barrier 181
 checkpoints 182, 484
 duration 869, 870, 882-886
 enforcement 35
 facility 587
 internal 182, 531
 international 180, 534
 measures 93, 179, 541, 542, 870
 permanent zone 258, 259

pests 43, 107, 130, 145, 173, 832
 programme 113
 regulations 173
 restrictions 164, 168
 significance 164, 172, 189
 stations 39, 180, 531, 532
 system 180, 535
 treatments 181, 184
 Queensland fruit fly 150, 669-689, 693-706, 894, 896, 899, 923

R

rabbits 733, 736, 826
 radars 905, 907
 radiation 369, 370, 377, 390, 816, 819, 825
 biology 94
 exposure 394
 gamma rays 223, 225, 283, 336, 353, 390, 394, 447, 448
 impact 102
 ionizing 221, 283, 339, 353, 447, 470
 low-dose 367, 382, 417
 protection protocols 448
 sensitive 411
 sources 215, 353, 390, 416, 420, 513
 sterilization 133, 369, 427, 444, 472, 651, 803, 822, 824, 827
 tags 69
 X-rays 222, 223, 283, 336, 391, 447, 448, 513, 531
 radio 676, 904, 905
 active 513
 programmes 419, 624
 protective hypoxia 384
 sensitivity 369, 426
 spots 43, 574
 wave 97
 rainfall 276, 277, 436, 467, 484, 489, 497, 767, 770
 estimates 773
 events 330, 332, 468, 769
 gauges 325
 lack 768
 mortality 23, 29
 sporadic nature 768
 variability 324, 758, 769
 vegetation imagery 773, 775
 raising awareness 17, 413, 418, 568, 574, 674, 675, 699, 704-706, 729, 732, 757
 random amplified polymorphic DNA (RAPD) 307
 range 475, 674
 ecological 87
 expansion 340, 463-477, 505, 506, 515, 551, 556, 558, 788
 geographic 51, 309, 340, 374, 505, 506, 515
 host 146, 525, 582, 660, 671

- land 562, 563
 native 147, 261, 469, 552, 563, 598
 natural distribution 164, 165
 potential distribution 551, 552, 559, 857
 summer 475
 temperature 101, 102, 492
 winter 475
 rapid response...130, 172, 534, 562, 635, 701, 770, 774, 890-895, 898
 real estate 342, 539, 542, 546
 real-time 115, 771, 772
 data capture 640
 data flow 895, 898, 900
 data pages 123
 detection 889-900
 monitoring 889-900
 PCR 39, 325
 reporting 135, 139
 trapping data 116, 123
 visualisation 898
 recombinant
 bacteria 934
 DNA 645, 647, 649, 651, 819
 plasmid 934
 proteins 257, 921
 recombination 819, 829, 845
 at unspecific sites 811
 genetic 647
 homologous 648, 649, 798, 811
 molecular 646
 rate 811
 red palm weevil ... 539-550, 765, 766, 777, 924
 Red Sea 767, 769
 referendum 53, 66, 78, 320
 refractory to pathogen infection..818, 824, 827, 828
 refugia 51, 60
 abandoned farms 605
 abandoned trees 115
 areas 197
 backyard trees 118
 labelling issues 87
 non-*Bt* cotton 78, 80
 sites 199
 untreated 61
 regeneration systems 169, 649, 650
 regional areas of control 33, 34, 38-41, 43
 regional plant protection organizations 172, 189
 regulation 239, 296, 448, 674, 697
 area-wide management 671, 672, 677
 biocontrol 124, 655-665
 biotechnology 820
Bt-cotton 59
 calls for 235
 cultural practices 64
 enforcement 675, 677
 European Union 436, 821
 exporters 94
 genome-edited insects....825, 831, 833, 835
 GMOs 354, 410, 645-652, 819-822
 import beneficial insects 124
 international trade 694
 movement of plant material 586
 pesticide marketing 618, 626, 628
 phytosanitary 39, 107, 171, 542
 quarantine 173, 541, 589-593
 remotely piloted aircraft systems....904-915
 smart 705, 706
 unmanned aerial systems 336, 904
 water authorities 438, 442
 X-ray equipment 449
 regulatory....56, 88, 237, 238, 356, 477, 542, 562, 568, 585, 645-652
 agencies 515, 852, 903
 approval 354, 833
 bodies 665, 831
 boundaries 673
 challenges 831, 851
 considerations 645, 809, 819
 context 649-651, 831
 control 670
 difficulties 851
 enforcement 54, 64
 framework...122, 174, 239, 377, 646, 649, 890, 899, 903, 904, 908, 909
 gene functions 826
 genomic elements 816
 issues 355, 390, 788
 limitations 915
 loss of chemicals 671
 pathway 648
 programmes 466, 469, 582, 583, 589
 requirements 820
 services 124, 619
 uncertainty 652
 reinestation...114, 443, 455, 470, 475, 723, 724
 reinvasion....186, 277, 434, 453, 507, 783, 859, 861
 release
 accidental 367, 379, 387, 394, 410
 aerial..63, 102, 129-135, 202, 210, 276, 287-295, 450, 531, 790, 865, 903, 912-914
 area-wide 133, 407, 651, 899
 augmentative 3, 10, 14, 41, 208, 612
 biicontrol agents 656, 660, 665
 blocks 486, 487, 531, 532
 boxed systems..102, 202, 203, 223, 290-293
 chilled adult 223, 276, 291, 293, 531
 contaminated males 349
 genome-edited insects.....651, 809-834
 GMOs...345, 354, 410, 646, 651, 803, 819, 822, 827, 828, 833, 851, 852
 ground....102, 103, 129, 132, 139, 203, 290, 295, 450, 532, 533, 913
 helicopter 135, 450

- infected males.....353, 383, 391, 406, 409-411, 472
 inundative221, 240, 380, 470, 883
 machines63, 202, 292, 531, 912-914
 male mosquitoes.....345, 353-356, 391, 406,
 411-419, 450, 748, 751, 759, 912
 male-only.....372, 416, 448, 686, 732, 814, 815
 methods102, 276, 356, 658, 686
 natural enemies657, 659
 parasitoids.....5-14, 41, 200, 220, 612, 903,
 913, 914
 polygons199-201, 205, 207-211, 865
 rates...42, 57, 63, 129, 135, 292, 353, 408,
 781, 896, 913, 914
 sterile flies.....129-140, 174-189, 197-212,
 215-226, 276-300, 531-536, 686, 688
 sterile males...103, 106, 132, 137, 276, 284,
 293-296, 414-427, 434-455, 470, 486,
 534, 883, 913-915
 sterile moths...51-86, 93-108, 111-125, 222,
 562-576, 613, 785, 791
 swaths.....69, 913
 system.....102, 276, 287, 293, 531, 613
 uniformity.....206
 release of insects carrying a dominant lethal
 (RIDL).....406, 443, 471, 803, 815, 845
 reluctance346, 421, 515, 704, 705
 remnant.....872
 forest.....276
 infestation523
 population..77, 284, 306, 572, 574, 871, 885
 remote sensing...260, 280, 285, 294, 640, 773,
 859, 860, 904, 915
 imagery772, 775
 low altitude (LARS)907
 RPAS-based.....907
 remotely piloted aircraft systems (RPAS)...903-915
 removal.....39, 507
 breeding sites342, 346, 350, 414, 748
 egg sticks568, 570
 fruit671, 676, 883, 886
 host511, 512
 host plants.....570, 571
 invasive cacti562
 nucleotides.....649
 outlier values873
 overwintering larvae790
 suitable habitats346
 trees ..40, 115, 116, 216, 540, 545, 547, 677
 tsetse.....282, 298, 470
 waste.....239
 repellents242, 243, 256, 639, 736, 738
 repetitive.....437
 elements.....811
 sequences.....849, 851
 reproductive...149, 502, 563, 817, 843, 845, 932
 incompatibility.....367, 368, 370, 387
 manipulation.....371, 378, 444, 471, 919
 output.....843, 844, 877
 parasitism367-371, 374, 378, 379
 potential.....237, 370
 rate.....164, 220, 237, 483, 502
 systems.....444, 918
 residual.....220, 277, 331, 859
 activity.....242, 255, 351
 control331, 333, 582, 587
 effects.....152, 218
 fertility.....94, 370, 384
 indoor residual spraying (IRS).....351, 641,
 643, 710-712, 804
 residues.....133, 313, 427, 599, 847
 crop.....233-235, 239, 240, 243, 244
 genome-edited material832
 insecticide.....112, 120, 427, 603
 levels131, 218
 livestock production234
 pesticide.....3, 4, 136, 810
 toxic.....428, 936
 resistance....120, 125, 256, 258, 343, 353, 635,
 643, 810, 816
 acaricide256-258
 alleles....355, 798, 809, 818, 825, 829, 848,
 849, 851
 ampicillin.....934
 arthropod256, 312
 Bt-cotton56, 60, 87
 cross112, 313
 dessication473, 828
 development.93, 94, 218, 242, 305, 327, 825
 disease34, 44, 411, 427
 environmental300, 909
 evolution.....372, 809, 818, 829
 gene drives.....829, 845, 846, 849
 genotypes.....314
 host.....256
 insecticide....3, 114, 121, 218, 242, 305-314,
 327, 348, 405, 474, 641, 732, 784, 816
 knockdown313, 343
 landscape860, 861
 management51, 60, 61, 78, 79, 82, 243
 mating disruption.....791
 mechanisms242, 312-314, 355
 monitoring59, 78, 314
 multi-gene.....87
 mutations312-315
 organophosphates ... 257, 258, 312-314, 349
 prevention strategy62, 82
 public123
 pyrethroid258, 313
 streptomycin929
 ticks256-258
 tobacco mosaic virus5, 6
 resolution.....437, 773, 878
 spatial292, 860, 894, 895, 907
 temporal.....292, 312, 894, 895, 907

Responsible Choice label 123
restriction fragment length polymorphism (RFLP) 307-309
return on investment 161, 167, 177, 180
reverse breeding 647
vaccinology 259
rhodamine B 451
rice 617, 234, 412, 617-628, 907
bowl 617, 619
bunds 618-621, 624, 625, 628
doctor 627
ecosystems 618, 619
farmers 619, 622, 625, 627

S

sanitation...107, 137, 233, 239, 342, 562, 568, 635, 675, 679, 783
campaign 740
field 152, 154
fruit 179
methods 239, 899
orchard. 93, 94, 103, 139, 179, 671, 679, 704
practices 107
pre-release 114, 115, 118
sapote fruit fly 167
satellite 733, 734, 772, 775
communication 777
data 284, 860
DNA 849
images 388, 392, 606, 774, 777
navigation system 860
reception 773
remote sensing 773, 907
Saudi Arabia, Mecca 626
sawfly 935
scale pest 657, 658
Schistocerca Warning and Management System (SWARMS). 772
Schmidt, Jan 801
school 66, 748, 749, 753, 754, 758
children 345, 711, 712
farmer field schools 28, 29, 625
involvement 740
licensed educators 321
lunches 171
Schweitzer, Albert 805
scientific...38, 514, 652, 663, 751, 797, 800, 802, 804, 819, 820, 824, 833-835, 903
articles 703
community...353, 355, 409, 515, 747, 749, 805, 852
concepts 752
debate 799
evidence...256, 258, 262, 352, 643, 684-688
fact-sheets 676
initiative 757

institutions 34, 44
interest 25
knowledge 540, 721, 823, 834
literature 151, 754
principles 276, 284, 297
process 834
product evaluation 834
rationale 626
research 261, 262, 656, 664
specialty 806
uncertainty 652
understanding 753, 797
scouting 59
airborne 904
apps 892, 893
targeted 71
screen 325
cages 136, 413
covers 329, 348
houses 8, 46
insectary 415, 420
insecticide-impregnated 277, 861
mosquito 342, 346, 804
segregation distortion 845
selection 59, 85, 87, 224, 327, 781, 816, 849
biological control agents 41
endosymbionts 375, 376
intrasexual 149
isolates 42
natural 378, 791, 851
non-diapausing strains 153
phenotype 816
pressure 256, 313, 799
process 715
resistance 353, 825, 829
risk management options 173
strain 153, 791
site 408, 411, 412, 860, 865
tolerant breeds 469
trap 56
self
awareness 683
confidence 683
dispersal 8
efficacy 683
incompatibility 376
learning 776
limiting 650-652, 798, 801, 803
organization 801
perpetuating 377, 825
propelling 28
replicating 798, 802
sexing strain 473
sufficiency 216
sustaining 650, 651, 801, 844
treatment 259
selfish
chromosomes 843

- genes.....798
 genetic elements.....795, 801, 813
 semi-arid.....562, 564, 565, 768, 857
 semiochemicals.....150-152, 155
 Senegal.....770
 Dakar.....275-292
 Direction des Services Vétérinaires.....275, 277
 Guinean forests.....276
 Institut Sénégalais de Recherches Agricoles.....275, 277, 289, 299
 l'Ecole Senegal-Japon.....300
 Ministry of Livestock and Animal Production.....300
 Niayes area.....275-300, 862-865
 Senegalese Ministry of the Environment.....298
 Services Régionales de l'Elevage de Dakar.....275
 south-eastern.....280, 282, 292
 western.....276
- sensory impairment.....781, 782
 interference.....792
 organs.....603
 receptors.....782
 sentinel.....897
 animals.....890
 chicken.....325, 326, 335
 females.....788
 gardens.....37
 herds.....296
 host plants.....571, 575
 larvae.....240
 plots.....575
 sequential aerosol technique (SAT).....276, 859
 sequential IIT/SIT.....384, 385
 serological surveys.....277, 724
 sesame.....618, 628
 sewage.....922
 sludge.....236
 sex determination
 genes.....815, 817, 818, 826, 829, 852
 pathways.....815, 846
 sex ratio.....222, 386
 artificially biased.....843, 844
 driving distorters.....845, 850
 Fisher's principle.....843
 male-biased.....25, 844, 845
 non-driving distorters.....844, 850
 non-Fisherian.....844
 synthetic distorters.....843-852
 sex separation.....223, 407, 415, 426
 automated.....390
 Fay-Morlan sorter.....388, 447
 imperfect.....370, 379, 395
 machine.....427
 manual.....381, 391, 427
 mechanical.....381, 391, 427, 447, 815
 methods.....368, 370, 379, 395, 410, 416, 447
 sexual dimorphism.....733
 strategies.....416
 sexing systems.....395, 410, 814, 815, 826, 828
 sexual
 activity.....103, 444, 446
 competitiveness.....408
 dimorphism.....733
 intersexual selection.....149
 intrasexual selection.....149
 maturation.....149, 151, 202, 220, 408, 492
 performance.....929
 reproduction.....650, 796, 843, 844, 850
 stage.....796
 transmission.....353
 sharpshooters.....919
 shelf-life.....445, 820
 shipment.....18, 52, 69
 chilled.....63, 449
 ground.....356
 long-distance.....276, 286-288, 449
 postal.....514
 procedures.....225, 287, 658
 rejected.....121
 shopping malls.....754, 756
 silage.....239
 silver bullet.....803
 silverleaf whitefly.....935
 Sindbis virus.....434
 Singapore.....341, 373, 747-759
 National Environment Agency.....747-752
 Project *Wolbachia*.....748-759
 single-nucleotide polymorphisms (SNPs)....312
 SIT application....115, 138, 140, 207, 370, 408, 409, 448, 471, 497, 535, 613, 669, 675, 680, 687, 688, 791, 871
 component.....93-108, 121, 123, 125, 132, 153, 284-286, 290, 291, 296-298, 513, 685, 688, 790
 integration.....197, 513, 675, 676, 678, 687, 688
 pilot.....95, 96, 408, 444, 449, 453
 programmes.....93-107, 129-138, 177, 237, 311, 336, 472, 679, 686, 688, 790, 791, 816, 822, 828, 830, 896, 912-915
 SIT/IIT.....444
 combined.....387, 405-428
 female contamination.....381, 391, 426, 427
 potential side effects.....428
 trial.....387, 411, 415-417
 site-specificity.....647-649
 sleeping sickness.....276, 857, 858
 Slovakia.....288
 Slovak Academy of Sciences.....279, 287
 smart regulation.....705, 706
 social.....111, 567, 577, 622, 669-689, 693-706
 acceptance.....687, 792
 action.....721

- aggressive cues 680
 approach 111
 assessment 713
 barriers 669, 670, 678, 712, 899
 benefits 154, 186, 664
 capital 699, 706
 change 695, 703
 conditions 120, 712
 consequences 120
 context 645, 652, 689, 725, 831
 cooperation 899
 dimension 162
 economy 120
 effect 521
 environment 670, 733
 factors...19, 346, 635, 672, 674, 678, 689, 706, 711, 713, 797, 804
 impact threshold 506
 interactions 259, 670
 issues 120, 672, 678
 justice perspective 681
 landscape 672
 learning 700
 loafing 676, 681
 losses 535
 mechanisms 670, 699
 media 419, 592, 640, 754, 757, 759
 mobilization 342, 344
 norms 677, 689
 organization 717, 797
 pressure 166, 677
 processes 670, 684
 profile 693, 698, 706
 psychological drivers 678
 psychological perspective 681
 research 672, 681, 683, 687-689
 science research 670, 673, 688
 sciences...17, 27-30, 706, 712, 724, 759, 822
 stratification 797
 structures 674
 support 342, 684
 systems 674, 680, 899
 variables 698
 socially 677
 just development 805
 responsible 123, 822, 833, 834
 socio-ecological systems 695
 socio-economic 94, 255, 276, 804, 892
 context 17, 262, 699, 713
 dynamics 258
 effects 660
 factors of risk 724
 impacts 18, 93, 280, 406
 importance 143, 561
 research 797
 studies 282, 298
 threat 731
 sociology 713, 786
 socio-political
 aspects 251, 256
 situation 530
 soil....23-30, 76, 147, 163, 436, 491-499, 767, 810, 880, 899, 922, 934
 conservation 562
 drenches 880
 fertility 17, 23, 24, 26, 239, 858
 landroller 239
 loss 565
 management 24
 maps 499
 moisture 775
 nutrients 30
 recovery 169
 science 23
 texture 24, 495, 498, 499
 tillage 152
 treatment 880
 types 169, 485, 489, 495
 sooty moulds 149
 South Africa...108, 121, 122, 129, 139, 257, 291, 562
 Citrus Growers Association 93, 94, 106
 citrus industry 93, 95, 106, 130, 132
 Citrus Research International 94
 Civil Aviation Authority 102
 deciduous fruit industry 106, 130
 Department of Agriculture, Forestry and
 Fisheries 129, 132
 Eastern Cape 97, 104-107, 130, 132, 140
 exports 93, 94, 97, 106, 130, 131
 FruitFly Africa 129, 130, 133-135
 Northern Cape, Orange River Valley 97, 104, 130, 132
 Perishable Products Export Control Board..
 104
 Western Cape 93-108, 129-140
 XSit 93, 95, 98, 99, 102, 107, 108
 South America...18, 162, 164, 166, 187, 305, 306, 307, 308, 309, 310, 311, 312, 314, 340, 466, 469, 486, 563, 594, 731, 788
 South American cucurbit fruit fly 167, 188
 South American fruit fly 167, 188, 215-226
 South American tomato moth 658
 South Korea 617-619, 628
 Environmentally Friendly Agriculture
 Promotion Act (EFA) 628
 Southeast Asia...17-20, 25, 29, 165, 350, 351, 405, 406, 428, 730
 southern cattle fever tick 254
 southern house mosquito 323
 soybeans 628, 658, 893
 spaces of negotiation 699
 spaces of prescription 699
 Spain 542, 594, 897
 Agencia Estatal de Seguridad Aérea 909
 Alicante 903

- Balearic Islands.....736
 Canary Islands.....539-549
 Fuerteventura.....539, 540, 548, 549
 Gran Canaria.....540, 548, 549
 greenhouses.....658
 Mosquito Alert.....732
 Tenerife.....539, 540, 546, 548, 549
 Valencia.....910
 species-specific.....427, 470, 814
 ectoparasitoid.....41
 mating disruption.....603
 performance.....24
 pest control.....827, 835
 pest management.....234
 SIT.....427, 428, 443, 814
 strategy.....830
 targeting sequences.....852
 traps.....58
 spectrophotometry.....927
 sperm.....829, 845, 847, 929
 competition.....378
 depletion.....377
 identification.....377
 incompatibility.....444
 spermathecae.....436
 spermathecal fill.....294
 spermatogenesis.....843, 844, 846, 847, 850
 sterile.....283, 408
 viability.....378
 spindle planting system.....119
 spotted wing drosophila.....373, 513, 813, 817, 818
 spraying.....43, 120, 123, 294, 336, 343, 427, 470, 477, 510, 545, 586, 619-627, 675, 680, 711, 828, 859, 859, 915
 aerial.....61, 352, 469, 484, 497, 515, 529, 551, 555, 605, 606, 608, 671, 784, 883, 904, 907, 910
 bait.....152, 154, 199, 218, 486, 529, 530, 671, 686, 880, 883, 910-912
 ground.....277, 469, 484, 531, 606, 607, 910
 indoor residual.....351, 641, 643, 710-712, 804
 remotely piloted aircraft systems.....907, 912
 space.....352, 748
 spot.....154, 775
 system.....327, 330, 331, 333-335
 stable flies.....233-244, 473, 913, 925, 929
 stakeholder.....106, 114, 122, 135, 174, 189, 258, 297, 442, 521, 526, 541, 543, 550, 568, 623, 652, 669-688, 698-706, 709-724, 747-757, 776, 810, 823, 831-834, 892, 894, 898, 900
 attitudes.....670
 commitment.....131, 223, 275, 279, 455
 context.....717
 cooperation.....238, 675, 676
 coordination.....702
 engagement.....256, 261, 418, 675, 749
 expectations.....122, 124, 139, 704
 groups.....123, 672, 675, 676, 694, 700, 703, 704, 709, 747, 749, 833, 892
 identification.....832
 interviews.....680, 688
 investment.....698
 involvement.....251, 693, 831
 key.....669, 687, 700, 702, 704, 709
 motivation.....678
 real-time visualisation.....898
 Standards and Trade Development Facility (STDF).....175
 staphylinid beetles.....240
 sterile insect technique.....51, 93, 111, 129, 148, 169, 189, 197, 221, 233, 256, 283, 305, 319, 352, 367-395, 405, 443, 470, 484, 519, 562, 612, 643, 651, 669, 694, 729, 741, 747, 789, 803, 814, 845, 860, 877, 891, 928
 sterilisation.....95, 153, 215, 222, 225, 283, 336, 390, 407, 420, 427, 639, 651, 685, 688, 822
 cold.....699
 diet.....97, 98
 dose.....102, 223
 facility.....176, 177, 179, 181, 189
 female.....382, 384, 406, 422, 818
 incompatibility.....353, 376, 378, 417, 427
 male.....369, 416, 434, 444, 447, 448, 651, 847
 radiation.....133, 153, 369, 377-379, 385, 447, 448, 651, 824
 sterility.....136, 153, 339, 370, 407, 410, 424, 688, 828
 complete.....382, 390, 411, 416, 417, 426
 conditional.....367, 370
 construct.....817
 functional.....472
 genetic.....816, 817
 induced.....222, 223, 237, 289, 294, 384, 386, 411, 417, 427, 448, 651, 732
 inherited.....94
 insufficient.....408
 natural.....415
 semi-sterility.....382
 trait.....828
 stochastic.....877, 886
 dispersal.....556
 dynamics.....554
 processes.....380
 Stockholm Convention on Persistent Organic Pollutants.....122
 stockpiling of eggs.....445
 stone fruits.....108, 130, 181, 676
 streptomycin-resistant.....929
 stress.....136, 907
 abiotic.....930
 biotic.....930
 cold.....148
 economic.....133
 resistance.....415
 striped mealybug.....20

- striped rice stemborer 621
 subsidies 171, 689
 chemical inputs 628
 environment-friendly alternatives 628
 subtropical 144, 169, 340
 areas 319, 500, 501
 climate 324
 origin 166
 plants 94
 rainforests 670
 regions 167, 252, 633
 zones 198, 641
 success rate
 biological control 658
 eradication programmes 505, 509, 510, 514, 515
 microinjection 476
 Sudan 408
 sugarcane 183, 218, 234, 239, 658
 supercooling points 934
 superinfections 374-376
 supervision 134, 421, 531, 608, 686, 719
 supply chains 215, 216, 699, 899
 Suriname 165, 168, 172, 186, 188
 survival rates 285, 370, 418, 627, 929, 932
 sustainability 342, 346, 347, 639, 687, 710
 disease-vector control 343, 638
 food production 169
 long-term 709, 712
 mass-release programmes 394
 population suppression 373
 sustainable...4, 103, 104, 106, 121, 125, 179, 198, 218, 394, 407, 426, 625, 663, 717, 773, 777, 804, 814, 895
 agricultural development 3
 agricultural systems 131, 858
 animal management 720
 area-wide management 111, 161, 254, 255, 257, 618, 890
 career pathway 638
 control 5, 635, 711
 development 162, 257, 639
 environmentally 252, 347, 639
 eradication 862, 866
 farming 171
 funding 131, 132, 139
 livestock production 276
 management 114, 148, 154, 155, 226, 243, 662, 665, 686, 859, 889, 892, 900
 pest control 347, 809, 827, 828
 production of sterile insects 100, 107
 programme 113, 124, 347
 tsetse removal 282, 861, 862
 tsetse-free zones 284, 861
 use of biocontrol agents 664
 vector control 409, 633, 634, 637, 639, 641, 748
- Sustainable Development Goals 162, 634, 635, 637, 858
 swarms
 desert locust 766-771, 775, 776
 migratory 766
 mosquito mating 408, 446
 Sweden 433-455
 central 433-435, 440, 449, 454
 Environmental Protection Agency 441
 northern 434
 Supreme Environmental Court 438
 Swedish-Norwegian border 435
 Uppsala University 433
 sweet peppers 658
 Switzerland 633, 768
 symbiomes 917
 symbionts 154, 471, 922, 928
 bacterial 339, 353, 448, 449, 918, 932
 endosymbionts 367-395, 409, 427, 919-921, 930, 936
 facultative 919
 insect 918
 insecticidal activity 935
 obligate mutualists 919, 922
 origin term 918
 secondary 922
 sterility 353
 symbiosis 378, 918, 925
 synchronicity 898, 899
 synchronised 333
 development 450
 diapause 155
 emergence 147, 148, 445
 hatching 436, 445, 450
 mating behaviour 150
 synthetic 781
 attractants 499, 523
 biology 843, 848
 gene drive system 818
 insecticides 3, 42, 112, 143, 154
 organism 647
 pheromones 95, 567, 603, 779, 780
 sex ratio distortions 843-852
 systems approach 107, 172, 174, 184, 698

T

- Taiwan 121, 131, 182, 465
 Tanzania, Zanzibar 282, 290, 297, 470, 861
 targets 637, 638, 642
 blue and black fabric 241
 DNA sequences 849
 eradication 300, 509, 510, 514
 insecticide-impregnated 233, 240, 243, 244, 276, 282, 293, 862, 863, 865
 national 638
 primary 220
 production 136

- taxes
ad valorem 320
 based on land value 116
 hypothecated 679
 local 116, 319, 679
 parcel 116, 117, 124
 property 63, 114
 revenue 124
 special taxing districts 319
 that discourage behaviours 171
 taxonomy 146, 664, 920, 922
 integrative 222, 257
 uniform 649
- technical advisory
 committee 88, 185, 519, 522, 526, 536, 602
 group 643
- technical cooperation 161, 277, 285, 298, 300
 projects 174, 175, 177, 279
 regional projects 19, 183
- techno-centric
 emphasis 693
 thinking 694
- temperature anomalies 488, 775
- temperature sensitive lethal 132, 176, 816,
 817, 826, 828
- termites 921, 923-927, 930, 934
- territoriality 149
- Thailand...17-29, 347-353, 405-428, 433, 444,
 451, 617-621, 626
 Chachoengsao Province 22, 407, 411-413,
 419-426
- Department of Agricultural Extension.17,19
 eastern.... 21, 28, 29, 407, 411-413, 419-426
 Mahidol University 405, 415, 420, 433
 Ministry of Public Health 419
 Nakhon Pathom 405, 414, 415, 420, 433
 Rice Bowl 617, 619
 Thai Tapioca Development Institute .. 19, 29
 Thailand Institute of Nuclear
 Technology 420
- thermal 101, 287
 accumulation...492, 869, 870, 882, 884, 885
 accumulation models...607, 870, 871, 873,
 882, 885
- constants 492
 fogging 907
 maximum 484
 summation 874, 881
- thrips 510, 658
- ticks 464, 468, 510, 635
 Asian blue tick 254
 Asian longhorned tick 261
 black-legged tick 260
 borne diseases 251-262
 cattle fever ticks 258-261
 global distribution 252
 hard ticks 252, 257
 management 251-262
- population dynamics 251, 254
 redwater fever 253
 regulatory programmes 466
 soft ticks 252, 257
 southern cattle fever tick 254
 species 252, 255, 257
- tidal
 activity monitoring 324, 332
 fluctuations 330, 332
 waves 166
- tobacco 3-14
- tobacco cutworm 935
- tobacco mosaic virus 5, 6
- tomatoes 184, 520
 plant defences 933
- total population management 198, 859
- tourism 341, 634, 656, 731, 733, 741
 agritourism 114, 120
- tourist 166, 534, 567, 733-739, 742
 areas 525, 526, 568
 destinations 519, 520
 industry 566
 population 530
- toxic 933
- bait sprays 218
 effects 120, 827, 936
 neurotoxic 352
 residues 428
- toxicity 151, 152, 242, 781, 934, 936
 phytotoxicity 605
- toxins 343
 binary 934
 endotoxins 56, 60, 349
 paralysing 936
 toxin-antidote systems 829
- traceability 96, 606, 891
- trade.... 174, 555, 598, 645, 656, 671, 702, 869
 agricultural 831, 832, 889
 bans...145, 163, 164, 185, 519, 520, 534, 821
 barriers 169, 173, 895
 chain 832
 citrus 106
 closed routes 164
 disruption 164, 898
 global..... 111, 121, 125, 165, 506, 641, 730
 horticultural 163-167, 171, 175
 international...130, 131, 163, 171, 172, 183,
 253, 256, 593, 684, 694, 821, 831
- international fruit 144, 145
- international regulations 173, 694
- markets 171, 173, 198, 218, 671, 821
- names 628
- requirements 700, 701
- restrictions 522
- systems approaches 698
- transboundary 165
- volumes 505, 514
- trade-off 150, 369, 822

- training... 9, 11, 41, 108, 225, 275, 342, 352, 543, 548, 683, 702, 751, 895
 courses 153, 175, 574, 719
 disease diagnostics 43, 627
 events 43
 extension workers 10, 627
 farmers 10, 107
 growers 597, 602
 hands-on 427
 health personnel 343
 material 10, 776, 777
 public health entomology 634, 638, 640
 staff 279, 172, 522, 549, 588, 594, 718, 776
 train-the-trainers 543, 776
 trajectory model 776
 transboundary
 diseases 251, 252
 movement 161, 165, 172
 nature 186, 189, 776, 889
 pests 765, 766, 771, 777
 risks 163
 threats 765
 trade 165
 transgene 645, 647, 817, 852
 constructs 813, 816, 826, 833
 delivery techniques 646
 distorter 847, 850
 encoded-endonuclease 843, 846
 expression 816, 850, 851
 inactivation 850
 insecticidal 646
 modification 649, 852
 self-limiting 652
 transgenesis 237, 645, 647
 paratransgenesis 647, 934
 transgenic 356, 848, 852
 approaches 354, 416, 833
 bacteria 934
 constructions 355, 819
 cotton 54, 60, 78
 diamondback moth 646, 833, 929
 gene drives 474
 males 848, 849, 851
 modified organisms 851, 852
 mosquitoes 356, 357, 815, 833, 847
 releases 850
 RIDL 845
 sexing strains 416, 471
 strains 357, 816, 934
 technologies 815, 830
 transinfection 374-376, 379, 385, 409-411, 463, 473, 476, 477
 translocations 378, 382, 471, 816
 transmission 476, 637, 722, 843, 845
 African animal trypanosomosis 298
 blocking 471, 475
 Chagas 711
 cyclical 282, 300
 dengue 341, 342, 346, 348, 354, 748
 disease 324, 337, 339-342, 347, 352-358, 411, 426, 474, 636, 712, 714, 758, 818, 830, 859
 dynamics 475
 geo-referenced data 771
 horizontal 386
 local 748, 810
 malaria 795, 796, 800
 maternal 371, 376, 380, 385-387, 410, 411
 mechanical 282, 296
 pathogen 261, 353, 370, 372, 379, 633, 635, 639, 641, 796, 824, 919
 Saint Louis encephalitis 323
 vector-borne 341, 343, 406, 635, 639, 710
 video 904
 vertical 386
 virus 325, 341, 354, 355, 386, 411
 transparency 297, 345, 489, 543, 606, 645, 646, 649, 652, 664, 749, 899
 transponders 905, 907
 transport 41, 165, 277, 405, 476, 772, 773, 858
 anthropogenic 553, 555, 788
 boxes 69, 287
 chain 124
 equipment 589
 long-distance 276, 449, 450
 maritime 733
 protocols 286, 288
 pruning wastes 608
 sterile insect 69, 101, 102, 108, 202, 222, 276, 286-288, 390, 407, 416, 420, 448, 449, 914
 strategy 434, 444
 time 8, 449
 transposable elements 816
 TrapGrid software 875-877
 trapping 57
 delimitation 520, 526, 531, 554, 557, 588, 589
 densities 584, 873, 895
 detection 509, 554, 562, 583-585, 588
 cost 896
 grid 558, 875, 894
 guidelines 182, 895
 mass-trapping 135, 155, 347-349, 510-512, 544, 545, 571
 networks 180, 486, 489, 522-535, 540, 545, 546, 562, 574, 575, 584, 686, 877, 883
 probability of death 877
 rodent 714
 systems 117, 290, 348, 451, 484, 509, 567
 verification 534, 535
 traps
 adhesive-coated plastic bags 241
 Alsynite fiberglass panels 240
 attractiveness 876
 autocidal gravid ovitrap 347, 349

- automated 891-900
- banana-baited 284
- barcoded identification 56, 892
- Biogents-Sentinel (BGS) 324, 325, 392, 740
- blue and black fabric 240, 241
- bucket 133, 545
- buffalo fly traps 469
- camera-fitted 897
- carbon dioxide-baited CDC-traps 325, 452, 454
- CDC-light 324, 325, 434, 455, 735, 740
- Cook & Cunningham (C&C) 534
- delta 56, 86, 95, 104, 588, 599, 897
- dynamic micro-networks 546
- escape probability 875
- food-based 499, 523
- fruit-mimicking 150-152
- gravid *Aedes* trap (GAT) 347
- gravitraps 731, 753
- Jackson 499, 523-526, 534, 880
- lethal ovitraps 347-349
- McPhail 217, 221, 533, 880, 883
- mechanical rodent 722, 723
- modified Frick 56
- MosHouse sticky 414, 421, 422
- Multilure 201, 205, 523, 526, 533, 534
- ovitraps 347, 348, 356, 392, 394, 414, 415, 423, 426, 731, 737, 739, 740
- Phase IV 499, 523, 524, 525, 526, 533
- pitfall 892
- spherical green sticky 151-154
- sticky 240, 241, 740, 897
- trap plant 621
- trap trucks 324, 325, 335
- Vavoua 241, 276, 280, 285, 293
- white traps 241, 545
- William's 241
- wing trap 567
- yellow panel 534
- travel 598, 656, 674, 730, 747, 869
- great distances 165, 166, 765
- international 253, 514
- patterns 641
- travelers 342
- volume 505
- treatment threshold 84, 117, 124, 335
- tree

 - backyard 38, 41, 43, 118, 130, 677, 899
 - bands 116, 790
 - death 35, 552
 - holes filling 329
 - host 41, 111, 114-116, 150, 529, 531, 552, 880, 926
 - infected 33-35
 - inspection 540, 544
 - management 543
 - owners 114, 116, 120
 - palm 539-548

- removal 40, 116, 216, 677
- replacement 35
- stump 545
- triangulation 713, 714, 724
- triatomines 710, 720, 724
- control 722
- infestation 713, 720, 724
- Trinidad and Tobago 307, 308
- trophic

 - chains 23
 - ecology 18
 - interactions 29
 - levels 24, 25, 651
 - scales 29

- tropical 149, 197, 340, 427, 635

 - Asia 17-30
 - cattle 252
 - conditions 169, 197, 198, 211
 - diseases 633, 634, 642-644, 710, 718
 - origin 166
 - plants 94
 - rainforests 670
 - regions 167, 170, 241, 252, 633
 - rice ecosystems 619
 - storms 166, 324
 - zones 198, 427, 641

- tropical almond 491, 528, 529
- tropical gypsy moth 896
- Trouvelot, Étienne Léopold 552
- trypanocidal drugs 296, 370
- tsetse 113, 221, 240, 275-300, 353, 370, 373, 379, 443, 470-473, 505, 510, 732, 857-866, 911, 913-915, 919

 - belt 277, 280, 282, 292, 300, 858, 862, 863
 - control 275, 277, 290, 857-866, 903
 - dispersal 292, 300, 863
 - distribution 282, 857-866
 - ecology 864
 - eradication 282, 283, 290, 296, 297, 300, 861, 913
 - free zones 279, 282, 284, 861, 863
 - habitat 280, 284, 866
 - mass-rearing 285
 - population genetics 860
 - riverine 276, 863
 - saliva 298

- Turkey, Anatolia 788
- tussock moths 510, 514
- TV 419, 676
 - advertising campaigns 543
 - education series 622, 624
 - national 298
 - serials 618, 624, 625
 - shows 419
- tyres 331
 - discarded tyres 346
 - scrap tyres 804
 - used tyre dumps 334

U

- Uganda, northern 862-864
 UK 415, 665, 766
 Cambridgeshire 287
 Cardiff 95
 Imperial College London 843
 Mosquito Recording Scheme 732
 ulceration 464
 ultra-low volume (ULV)....71, 73, 77, 333, 334, 420, 859, 904, 907
 undernourishment 25, 170
 ungulates 258, 259
 unintended
 changes 801
 consequences 797
 population replacement...367, 377, 379-382, 387, 395
 single-nucleotide variants 799, 806
 United Nations 626, 804
 Agenda for Sustainable Development....796
 International Civil Aviation Organization (ICAO).....904
 Sustainable Development Goals...162, 634, 635, 637, 858
 univoltine 143, 144, 148, 154, 434
 unmanned
 aerial systems 124, 319, 336
 aerial vehicles (UAV)....103, 260, 450, 765, 774, 904-906
 aircraft 903, 913
 aircraft systems (UAS)... 336, 904, 908, 909
 fixed-wing 906, 913
 helicopters 906, 907, 913
 industry 908
 operation 905
 platform 906
 regulations 903-906, 908-910, 915
 upsurges 105, 294, 298, 639, 768, 776, 777
 uptake 638, 702, 894
 area-wide management 669-689
 gene drive systems 651
 urban 675, 733, 747
 areas...33-46, 111, 135, 216, 325, 348, 352, 358, 407, 555, 585, 686, 689, 731, 833, 870, 911-915
 centres 118, 639, 699
 communities 421, 675
 environments 320, 582, 747, 749, 899
 eradications 511, 514
 gardens 514
 habitat 285, 899
 host tree owners 120
 households 679, 689
 interfaces 74, 75
 landscape 236, 899
 mosquitoes 347, 747, 748
 planning 633
 settings 285, 641
 vectors 641
 urbanization 357, 405, 633
 rapid 641
 unplanned 635
 urbanized ecosystems 289, 331, 733
 uric acid 923, 926
 uricolytic strains 926
 Uruguay 307, 308, 311, 314, 466, 710
 border with Brazil 312
 Pasteur Institute 305
 USA.....4, 51-87, 94, 121-124, 131, 173-188, 216, 235-239, 253-261, 307, 319-321, 347, 350, 353, 373, 448, 466, 484, 485, 510, 535, 542, 551-559, 562-576, 581-593, 607, 646, 788, 820, 821, 870
 Alabama 564
 Arizona 51-88, 784
 Arizona Cotton Research and Protection Council (ACRPC).....54, 77, 78
 border with Mexico..68-75, 83, 85, 188, 258
 California...51-88, 165, 168, 174, 177, 408, 413, 466, 506, 581-594, 657, 785, 787, 788, 790, 869-887, 893, 897, 928
 California Department of Food and Agriculture (CDFA) 54, 63, 81, 515, 581, 588, 591, 870
 California, northern. 581-594, 604, 787
 California, southern 51-83, 780
 Canadian border 556, 791
 Centers for Disease Control and Prevention (CDC) 324, 349, 408
 Colorado River Basin 52, 79-85, 784
 Defense Advanced Research Projects Agency (DARPA).....806
 District of Columbia 448
 Environmental Protection Agency...59, 320, 448, 784, 833
 Federal Aviation Administration (FAA).909
 Florida...33, 35, 177, 186, 350, 407-409, 416, 465, 562, 576, 886, 894
 Florida Fish and Wildlife Conservation Commission 320
 Florida Keys Mosquito Control District.352
 Florida, Centre for Biological Control ...561
 Florida Department of Environmental Protection 320
 Florida, Keys 563, 576, 833
 Florida, Lee County Mosquito Control District 319-337
 Florida, north-western 233
 Florida, Sanibel Island 336
 Florida, southern.....324, 407, 563, 564
 Georgia 225, 390, 561, 568, 574
 Hawaii 165, 175, 470, 472, 562, 869, 934
 Indiana 61, 893, 897
 Iowa 893

Kansas 20
 Kentucky, Lexington 409
 Louisiana 241, 564
 Maryland 581, 932
 Massachusetts 551, 552, 555, 574, 581,
 587, 594, 802
 Michigan 367, 385, 556
 Minnesota 556, 788
 Mississippi 564
 National Academy of Sciences 651, 800
 National Cotton Council 53, 54, 88
 National Oceanic and Atmospheric
 Administration (NOAA) 873, 880, 83
 National Wildlife Refuge (NWR) 330
 Nebraska 233, 242, 331
 New Mexico ... 51, 54, 64, 66, 67, 75-77, 88
 New York 768, 779, 833
 North Carolina 551, 556, 561, 564, 788
 Oregon 705
 Pennsylvania 768, 933
 Puerto Rico 34, 186, 259, 349, 466, 563
 Rio Grande 66, 73-75, 188, 258
 South Carolina 564
 south-eastern 320
 south-western 52, 53, 82, 562, 563, 591,
 777, 785, 786, 790
 Texas...51-88, 188, 217, 251, 258, 259, 308,
 531, 576, 785
 Texas Permanent Quarantine Zone 258, 259
 Texas, Veterinary Pest Genomics
 Center 251
 University of Arizona 58, 78, 82
 University of California 581-594, 779, 780
 University of Maine 709
 University of Washington 893
 U.S. Fish and Wildlife Service 320
 Virgin Islands 34, 563
 Virginia 332, 556, 932
 Washington state 168, 551, 705
 West Virginia 551, 556
 USDA...63, 161, 173, 176, 407, 531, 536, 567,
 583, 588, 820
 Agricultural Research Service (ARS) 94,
 174-176, 233, 251, 561, 574, 869
 Animal and Plant Health Inspection Service
 (APHIS)...51, 54, 180, 483, 519-522, 534,
 551, 552, 561, 581, 585, 587, 784
 APHIS Aircraft and Equipment Operations
 facility 531
 biotechnology regulation 820
 Center for Plant Health Science and Tech-
 nology (CPHST) 51, 78, 94, 551, 581
 CPHST-APHIS-USDA data base 52
 Forest Service 551-559
 genome editing 820
 Hawaiian Fruit Fly Laboratory 174
 Plant Protection and Quarantine
 (USDA)...55, 553, 555, 581, 585, 587

V

vaccines 253-259, 406, 635, 732, 748
 VectoBac G larvicide 433-456
 vector
 elimination 357, 638, 711
 surveillance 638, 640, 641, 710
 vector control 252, 261, 341-343, 358, 367-395,
 405, 428, 633-644, 719, 741, 749, 804, 858
 activities 420, 711
 delivery 635, 639
 interventions 344, 345, 639
 measures 352, 414, 748, 810
 methods 39, 352
 operations 863
 products 642
 programmes...341, 342, 348, 351-355, 409,
 635-637, 642, 710, 711, 714
 staff 347, 349
 strategies 341, 342, 348, 357, 406, 638
 vector-borne
 diseases...260, 341-345, 405-420, 633-644,
 731, 826, 835, 851, 852, 937
 pathogens 372, 379, 639
 transmission 710
 vectoring
 agents 337
 disease 327, 406
 passive 514
 vegetable...75, 80, 130, 161-189, 565, 658, 736
 consumption 162, 170, 171
 crop residues 234, 239, 243
 exports 162, 171, 185, 519, 520, 671
 gardens 41
 production..83, 161, 170, 171, 180, 520, 899
 vegetation
 annual 771, 773, 774
 as indicators 437
 classifications 296
 density 439, 531
 greenness map 773
 imagery 775
 index 907
 Landsat images 292
 non-commercial 215
 suitability 278
 surrounding 150
 wetlands 332
 vegetative
 material 34, 39, 43, 234
 wastes 243
 Venezuela 186, 307, 314, 466
 veraison 583
 vetiver grass 621
 veterinary 253, 298, 368, 731
 baseline data 276
 medicine 251
 pests 472

- programmes 261
 public health 257
 services 174, 251, 256, 297
 staff 279, 297
 Viet Nam...18-23, 26, 28, 144, 146, 465, 617-624, 627
 Central Highlands 20
 International Center for Tropical Agriculture (CIAT) 17
 Mekong 21, 622
 Mekong University 617
 northern 618
 southern 21, 28
 Tien Giang Province 617, 623, 624
 vinasse 239
 vineyards 582-591, 597-613, 787
 abandoned 605, 606
 beneficial fauna 605
 inspections 585
 organic 591, 607, 611
 sanitation 139
 traps 588
 viral haemorrhagic fevers 341, 810
 virgin females 283, 287, 353, 783, 787
 virulence 646, 799
 viruses...252, 324, 340, 341, 354, 357, 379, 386, 635, 731, 844, 919, 929, 930
 vitamins 170, 925, 928, 931, 937
 vitellogenesis 149
 volume...37, 100, 136, 137, 216, 447, 449, 910
 application 606
 export 198
 droplet median diameter 327
 sales 626
 trade 505, 514
 ultra-low...71, 73, 77, 333, 334, 420, 859, 904, 907
- W**
- walnut husk fly 167
 walnut twig borer 935
 walnuts 168, 785, 787
 wasps 29, 149, 848, 913, 926
 parasitoid 19, 22, 34, 473, 914
 pteromalid 240
 wood-feeding 924
 waste management 345, 589, 639, 722
 water hyacinth 320
 water lettuce 320
 water levels.....324, 328, 332, 436, 439, 442
 wavelengths 97
 mid-infrared 773
 near-infrared 473, 773
 red 773
 web 297, 543
 application 546, 547
 portal.....559
 server 547
 site...115, 116, 123, 326, 592, 676, 754, 757, 820
 viewer 546, 547
 weeds 154, 563, 656, 659, 665
 aquatic 320
 biocontrol 561, 562, 658-660
 control 76
 detection 907
 weevils 35, 510
 boll weevil 54-88
 leafroller weevil 935
 red palm weevil...539-550, 765, 766, 777, 924
 welfare 475
 concern 464, 474
 effects 464
 farmers 276
 impacts 463, 467
 West Indian fruit fly 167, 179, 188
 West Indies 562
 West Nile virus 323, 379
 western cherry fruit fly 167
 wetlands 306, 332, 433-440, 449, 450
 wheat 234, 893, 907
 whiteflies 62, 82, 658, 935
 white-tailed deer 258-260
 whole genome sequencing 849
 wildlife 233-261, 306, 320
 livestock interface 258, 259
 vaccination 252, 259
 willow-leaf infusion 445
 wind 56, 144, 166, 240, 617, 618, 767
 borne movement 63, 69, 556, 788
 dominant 532
 down-wind 779
 patterns 770, 786
 speed 735, 770, 776, 906
 upwind 779
 wings 149, 913
 damaged 101
 deformed 287, 288
 geometric morphometrics 282
 beat frequency 897
 wingspan 149
Wolbachia
 bacteria...409, 417, 448, 748, 751, 752, 803
 based approaches 463, 476, 477
 densities 386, 387
 establishment 381, 387, 426, 448, 477
 genome transformation 474
 infection...371-380, 385, 386, 410, 424, 426, 448, 463, 471-476
 inhibiting viral pathogens 379
 reducing vector competence 372, 474
 strains...367-394, 410, 411, 416, 427, 444, 448, 472-477, 732
 transinfected 409-411, 420, 477

- Wolbachia*-infected.....388, 428, 472
 females....354, 370, 379, 380, 381, 411, 416,
 426
 individuals371, 378, 380, 381, 383
 insects.....379, 381
 lines374, 385
 males....353, 383, 391, 406, 409, 410, 416,
 424, 444, 472
 mosquitoes.....374, 385-387, 415, 427, 798
 populations353, 381, 409
 Wolbaki387
 factory.....390
 sex sorter.....390
 X-ray irradiator388, 390
 women577, 717, 720
 chemoprophylactic treatment.....804
 decision-making.....28
 wood.....585, 919, 925
 boring beetle.....923
 feeding beetle.....924, 926
 feeding termites923-926
 feeding wasp.....924, 926
 firewood.....553, 556
 woolly apple aphids216
 workers' safety120
 World Bank122
 World Health Assembly633, 634
 World Health Organization (WHO)...339, 342,
 343, 344, 358, 372, 406, 408, 626, 628, 633-
 644, 646, 711, 718, 730, 795, 796, 804, 805,
 858, 893
 Country Cooperation Strategy641
 Global Vector Control Response633-642
 Malaria Policy Advisory Committee.....643
 World Meteorological Organization488
 world's population162, 633
 World Trade Organization (WTO)....163, 172,
 821
 Sanitary and Phytosanitary Measures
 (SPS).....163, 172, 174, 175
- X**
- X chromosome.....817, 845, 847, 850
 bias844
 fragmentation.....846
- maternal.....847
 paternal.....849
 shredding843, 846, 848-852
 xanthurenic acid931
- Y**
- Y chromosome844-846, 850, 852
 invasive844
 mutant.....844
 yeast136, 415, 446, 671, 811
 gene drives.....796, 848
 hydrolysed yeast152, 202
 torula yeast523, 533, 534
 yellow fever...319, 324, 336, 339-342, 354,
 379, 405, 634-636, 810, 930
 yellow fever mosquitoes....324, 339-358, 373-
 375, 405-428, 443, 473, 747-759, 813, 815,
 844, 846, 852
- Yemen769
 yield....17, 36, 44, 82, 85, 98, 99, 163, 179, 216,
 218, 222, 287, 446, 599, 618-621, 624, 671,
 790, 832
 crop.....3, 4, 18, 29, 810
 losses.4, 18, 82, 145, 215, 217, 601, 618, 627
 mapping.....907
 reduction.....4, 163, 164, 167, 583
- Z**
- Zambia859, 931
 zebrafish848
 Zero Hunger162, 858
 zero-tolerance94, 832
 level.....103
 policy.....107
 Zika336, 339, 354, 405, 409, 634, 635, 731
 epidemics.....343, 419
 outbreaks406, 635, 731
 virus.....324, 325, 340, 379, 386, 731, 930
 Zimbabwe859
 Zambezi valley864
 zoonotic diseases251-253, 257, 724, 731