**Appendices**

A1: Literature search of all known injury, signs, and symptoms that occur on ironwood worldwide

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. |  | Tree organ affected | Symptom (sign of ) Disorder | Casual agent | Remark (Source) |
| 1 | Not defined | Needles, branchlets | Brooming (42, 3) | *Tree brooming virus* | B, V |
| 2 | Not defined | Needles, stem | Witches’ Broom (44) | *Mycoplasma-like organims* | B, MLO |
| 3 | Not defined | Stem xylem | Rickettsia-like organism (44) | *Mycoplasma-like organims* | B, MLO |
| **4** | **Not defined** | **Root**  | **Root knot nematode (1,20)** |  | **B, N** |
| 5 | Not defined |  | (9) | *Helicotylenchus cavenessi, Radopholus smilis, Rotylenchus reniformis, Tylenchus sp.,* *Xiphinema ifacolum* | B, N |
| **6** |  **Not defined** |  | **Soil tunnels on trunk** | ***Odontotermes obesus, O. wallanensis* (40)*, Termites***  | **B, I, G** |
| 7 | Adult trees | Trunk, branch | Dry wood termite (14) | *Kalotermes flavicollis, Macrotoma palmata* | B, I |
| **8** | **Adult trees** | **Stem (trunk)** | **Tunnel boring** | ***Nausitermes spp.*** | **B, I, G** |
| 9 | **Not defined** | **Branchlets** | **Galls, dieback on branchlet tips** | ***Unidentified wasps*** | **B, I, G** |
| 10 |  Small trees | Twigs, leaves | Twig girdler (36, 5) | *Oncideres cingulata* *Phassus malabaricus* | B, I  |
| 11 |  Not defined | Leaves  | Notcher weevil (36) | *Artipus floridanus* | B, I  |
| 12 |  Not defined |   | (Australian pine) Spittlebug (36, 5) | *Clastoptera undulata*  | B, I |
| 13 |  Young trees | Stem grildling  | Australian pineborer (36, 5) | *Chrysobothris tranquebarica*  | B, I  |
| 14 |  Not defined  | Root (sapling?) | Root rot (36, 30, 20, 3) | *Clitocybe tabescens* | B, I |
| 15 |  Adult trees  | Stem  | The black borer (30, 5,40) | *Apate monachus*  | B, I  |
| 16 |  **Saplings (nursery)** | Needles (branchlets) | Leaf cutting ant, defoliator (5, **21**) | *Atta insularis*  | B, I  |
| **17** |  **Not defined**  | **Branchlets, needle**  | **Cottony cusion scale 5,38)** | ***Icerya purchasi***  | **B, I**  |
| 18 |  Not defined  | Branchlets, needle  | 38 | *Nipaecoccus vastator \**  | B, I  |
| 19 |  Not defined  |   | The thorn bug (5) | *Umbonia crassicornis*  | B, I  |
| 20 |  Not defined  |   | A borer beetle (5) | *Sinoxylon anale*  | B, I  |
| 21 |  Not defined  | Branchlets, needle  | The leaf notcher weevil (5) | *Artipus floridanus*  | B, I  |
| 22 |  Not defined |  | Borer grubs (41) | *Coelosterna scabrata* | B, I |
| 23 |  Young plants | Root and stem  | Grubs (40) | *Oryctes rhinoceros* | B, I |
| 24 |  Saplings | Needles | Defoliator (40) | *Eumetra crameri* | B, I |
| 25 |  Not defined | Bark | Bark eating (40,38,37) | *Indarbela quadrinotata,* *I. tetraonis* | B, I |
| **26** |  **Saplings (nursery)** | **Defoliators** | **Defoliators (40)** | ***Mealy bugs*** | **B, I** |
| **27** |  **Not defined** |  | **Pentatomid bugs (7)** | ***Halys dentatus, Erthesina fullo*** | **B, I** |
| **28** |  **Not defined** | **Stem borer** | **Coleoptera - stem borer (21)** | ***Batocera rufomaculata*** | **B, I** |
| **29** |  **Not defined** | **Defoliator** | **Tussock moth - (35, 33)** | ***Lymantria xylina, L. detersa*** | **B, I** |
| **30** | Not defined | **Stem borer** | **Coleoptera – Stem borer (39)** | ***Macrotoma palmata***  | **B, I** |
| **31** | Blooming  |  | **(43)** | ***Anoplophora chinensis*** | **B, I** |
| **32** | Not defined | **Sap suckers** | **Cicadellids (44)** | ***Hishimonus sp.*, *Oncopsis sp. (Bythoscopus sp.)***  | **B, I** |
| 33 |  Not defined | Needle, leaves | Blight, Wilt (9, 1, 10, 3,32)Root rot, wilt | *Phytophthora sp., P. spinosa,* *P. vesicula, P. cambivora* | B, F, GB, F, G |
| 34 |  Seedlings  | Leaf, needle and stem | Necrosis (9, 1, 10)Leaf spot | *Colletotrichum gloeosporioides (AM)**Glomerella cingulata (TM)*  | B, F, GB, F, G |
| 35 |  Seedling  | Foliage, root | Foliage blight, root rot (1, 32) | ***Fusarium sp., F. oxysporium*** | B, F, G |
| 36 |  Not defined | Root , Shoestering root rot (CA) | Root rot (9, 1, 10, 20)  | ***Armillaria mellea****, A. Tabescens****Rhizomorpha subcorticalis***  | B, F, AMB, F, TM |
| **37** |  **Not defined** | **Wood** | **Wood rot (9, 1, 10, 20), conks on old trees****Wood rot , Heart rot (1,10)** | ***Fomes annularis (1), F. appalantus\*, F. marmoratus\*, F. lucidus (2/), F. badius, F. durissimus, F. fastuosus, F. Senex( 9)******Ganoderma annularis(1,10), G. tornata,*** ***G. applantum (17), G. Lucidum*** | **B, F, AM****B, F, TM** |
| 38 |  Seedlings? | Root | Root rot, damping-off (1, 10, 12, 32) | ***Rhizoctonia solani****,* *R. Bataticola\***Thanatephorus cucumeris* | B, F, AMB, F, TM |
| 39 |  Seedlings? | Needles? | Southern blight (9,1, 10, 3) | *Sclerotium rolfsii (AM),* *Athelia rolfsii (TM)* | B, F, AMB, F, TM |
| 40 |  Not defined | Stem and branchlets, twigs, needles | Stem cankers and Dieback (1, 10, 5,24) | *Phomopsis Casuarinae* *Botryosphaeria ribis, B. parva*  | B, F,  |
| 41 |  Not defined |  | Pink disease (5) | *Corticium salmonicolor* | B, F,  |
| **42** |  **Juvenile and mature** | **Foliar wilt and cracking of the bark** | **Blister Bark (30, 29, 40, 25,26,27,15,23,13,18, 19,28)**  | ***Trichosporium vesiculosum******(Subramanianospora vesiculosa)*** | **B, F (Hyph.)** |
| 43 |  Seedling  | Foliage | Foliage blight (1) | *Coryneum sp.* | B, F |
| **44** |  **Not defined**  | **Tree (through wounds)** | **Saprophyte-parasite (9, 30)** | ***Ganoderma lucidum*** | **B, F** |
| 45 |  Mature tree | Stem, tree | Die back (1, 30, 10)Stem canker | ***Diplodia natalensis*** (30), *D. sp., Botryodiplodia sp. (1,10),*  | B, F |
| **46** |  **Not defined** | **Wood**  | **Brown rot (10, 5, 2, 6, 40)**  | ***Phellinus noxious, P.kawakamii, P. badius*** | **B, F** |
| 47 |  Not defined | Needle | Needle spot (1) | *Alternaria sp.* | B, F |
| 48 |  Not defined | Needle  | Needle necrosis (1) | *Thielavia sp.* | B, F |
| 49 |  Not defined | Needle | Leaf spot (1) | *Helminthosporium sp.*  | B, F |
| 50 |  Not defined | Needle | Leaf spot | *Gleosporium sp.* | B, F |
| 51 |  Not defined | Stem, leaf, plant  | Dieback, Gall (1, 10) | *Sphaeropsis sp.* | B, F |
| 52 |  Not defined | Wood  | Wood rot (1) | ***Polyporus cinnabarinus****, P. rigidus,* *P. Sanguineus, P. hydnoides**Pycnoporus cinnabarinus, P. sanguineus* | B, FB, F |
| 53 |  Not defined | Wood | Wood rot (1) | ***Auricularia sp.*** | B, F  |
| 54 |  Not defined  | Wood | Wood rot (1) | ***Rigidoporus lineatus***  | B, F  |
| 55 |  Not defined | Wood | Wood rot (1, 40) | ***Hexagonia hydnoides****,* *H. decipens* | B, F |
| 56 |  Not defined  | Crown, wood | Rot, needle necrosis (1) | *Epicoccum sp.* | B, F  |
| 57 |  Not defined  | crown | Crown rot (1) | *Phyllostica sp.* | B, F |
| 58 |  Seedlings? | Root  | Root rot (1, 10,32), Damping off  | *Pythium sp.*  | B, F |
| **59** |  **Not defined** | **Needle, stem?** | **Powdery mildew (1, 10)** | ***Oidium sp.***  | **B, F** |
| 60 |  Not defined  | Fruits (Cones?) | (10) | *Helicosporium panacheum*  | B, F  |
| 61 |  Not defined |  | (10) | *Allescheriella crocea*  | B, F |
| 62 |  Not defined |  | (10) | *Sebacina sp.*  | B, F |
| 63 |  Not defined | Wood | Rot (10) | *Inonotus rickii* | B, F |
| 64 |  Not defined |   |  | *Rhytidhysteron rufulum* | B, F |
| 65 |  Not defined | Bark, trunk | Pink disease (9,40,24) | *Corticum salmonicolor*  | B, F |
| 66 |  Seedling  | Seedling blight | Blight (9, 3, 31) | *Macrophomina phaseolina**Sclerotium bataticola* | B, F  |
| 67 |  Not defined |  | (9) | *Phoma Casuarinae*  | B, F |
| 68 |  Not defined |  | (9) | *Poria hypolateritia* | B, F |
| 69 |  Not defined |  | (9) | *Schizophillium commune*  | B, F |
| 70 |  Not defined |   | (9) | *Ustulina deusta* | B, F |
| 71 |  Not defined |   | (9) | *Xylaria hypoxylon* | B, F |
| 72 | Not defined | Aerial portions | Wood rots (40) | *Daldinia concentrica, Sternum lobatum, Fomes spp., Irpex sp., Osmoporus carteli,* ***Polyporus spp., Poria subweirii, Poria sp., Ganoderma applanaatum, G. pseudoferrum,*** *Schizophyllum commune, Tremella mesenterica* | B, F |
| 73 | Not defined | Stump | stump rot (40) | *Hypoxylon deustum, Stereum nitidulum, Daedalea flavida, Hexagonia discopoda, H. thwaitesii* | B, F |
| 74 | Not defined | Butt | Butt rot (40) | *Phellinus kawakamii* | B, F |
| 75 | Not defined | Trunk, branch | Cankers (40) | *Thyronectria pseudotrichia,* ***Pestalotia Casuarinae****, Diplodia natalensis, Phomopsis Casuarinae* | B, F |
| **76** |  **Not defined** | **Yellowing of foliage, wilting and death** | **Bacterial wilt (1, 3, 40)** | ***Pseudomonas solanacearum*** ***Ralstonia solanacearum(5)*** | **B, Ba, G** |
| 77 | Not defined | Crown | Crwon gall (1) | *Agrobacterium tumefaciens* | B, Ba |
| 78 | Not defined | stem | Fasciation (34) | *Corynebacterium fascians* | B, Ba |
| 79 | Not defined | Soil (beneficial) | Entomopathogenic nematode (11) | *Heterorhabditis sp.*  | B, Ba |
| 80 | Not defined | Aerial portion of tree | Parasitic flowering plant (4) | *Cuscuta sp.*  | B, P, G |
| 81 | Not defined | Leaf  | Spot, green scurf (1) | *Cephaleuros virescens*  | Al, F |
| 82 |  Not defined |  |  | *Flooding* | A, G |
| 83 | Young and old | Tree |  | *Fire* | A, G |
| 84 | All stages | Tree |  | *Storms and typhoons* | A, G |
| 85 | Not defined | Small trees | Killing trees (36) | *Lightning strikes, Freezing*  | A  |
| 86 | Not defined |  | Tree Dieback (16) | *N, P, K deficiencies*  | A  |

Key

A = abiotic I = Insect

Al = algal MLO = Mycoplasm-like-organism

AM = Anamorph N = Nematode

B = biotic P = parasitic flowering plants

Ba = Bacterial (Bacteria) TM = Teleomorph

F = fungal (fungi) V = viral (Virus)

G = Guam (prevalence)

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A2: Ironwood Tree Conference Agenda and Presentations.

**IRONWOOD DECLINE CONFERENCE**

**University of Guam**

**University of Guam Cooperative Extension Service**

**Western Region SARE Program**

**Western IPM Center**

**January 6-10, 2009**

**Purpose:**

Project Principal Investigator (PI), the post-doctoral researcher in charge of research activities of the grant, cooperators, and invitees will participate in a Five-day conference. Participants will work face-to-face to teach each other new skills and insights that will lead to the discovery of the cause of Guam’s ironwood tree decline and its eventual control. The participants themselves will constitute the conference’s primary resource with free discussion and the exchange of ideas driving its problem solving and fact-finding mission.

**Objectives:**

**A.** Develop diagnostic survey tools suitable to evaluate Guam’s Ironwood trees. The use of this tool will reduce the likelihood of important site information being missed during collection of ironwood field data.

**B.** A diagnostic field key, based on ironwood literature and expertise, will be developed to link various injury, signs, and symptoms with pests and diseases.

**C.** Protocols will be developed for collecting field samples for basic lab analyses that are suitable for Guam.

**D.** Develop protocols for handling, storage, and shipment of samples off island for analysis.

**E.** Develop standardized severity measurement levels of Ironwood decline on Guam.

**PRE-CONFERENCE**

|  |  |  |
| --- | --- | --- |
| **Day / Time**  | **Activity** | **Presenter / Contact**  |
| **Day 0 - Monday,** **January 5, 2009** |  |  |
|  |  |  |
| **2:40 am** | **Dr. Pinyopusarerk KE 111** |  |
|  |  |  |
| **1:20 pm** | **Mr. Badilles on CO9597** |  |
|  |  |  |
| **7:10 pm** | **Dr. Spaine on CO1** |  |
|  | **Dr. Smith on CO1** |  |
|  | **Dr. Nelson on CO1** |  |
|  | **CONFERENCE SCHEDULE** |  |
| **Day 1 -Tuesday,** **January 6, 2009** |  |  |
| **5:50 am** | **Dr. Nandwani on CO9317** |  |
|  |  |  |
| **7:45-Hotel** | **Hotel pick travel, travel to**  |  |
| **8:00-8-45**  | **Paseo: collect samples** |  |
| **10 minutes** | **Nimitz beach** |  |
| **10 minutes** | **Cetti Bay Overlook** |  |
| **10 minutes** | **Fort Soledad** |  |
| **30 minutes** | **Merizo Cemetery (Faha site)** |  |
| **Pier 11:00 out at 11:15** | **Cocos Island:collect samples** |  |
| **12:45** | **Lunch Break Cocos Island**  |  |
|  | **Be at Pier between 1:30-1:45**  |  |
| **2:15-3:00** | **Tour UOG:collect samples** |  |
|  **3:00-315 pm**  | **Break UOG** |  |
| **3:15-4:30** | **Sci. Bldg. Rm 110****View old cultures and process new samples** **Open discussion Obj. A &B**  |  |
|  |  |  |
| **Day 2 – Wednesday****January 7, 2009** |  |  |
| **Hotel pickup 8:00****8:30-10:00** | **Watson farm, survey, sample** | **Mr. Watson,**  |
| **10:30-11:45** | **UOG process samples** |  |
| **11:45 – 12:30 pm** | **Lunch Break-UOG** |  |
| **12:30-3:00** | **Conference Presentations****Sci Bldg. Rm 110** **Welcome & island perspective** | **Assoc. Dir. Artero,** **UOG & Local Scientists** |
| **3:00 – 3:15 pm**  | **Break** |  |
| **3:15** | **Rota perspective** | **Mr. Badilles** |
| **3:30** | **Saipan perspective** | **Dr. Nandwani** |
| **3:45** | **USDA Forest Research Station perspective** | **Dr. Spaine** |
| **4:00** | **Florida perspective**  | **Dr. Smith** |
| **4:15** | **Hawaii perspective**  | **Dr. Nelson** |
| **4:30** | **Australian perspective**  | **Dr. Pinyopusarerk** |
| **Return to Hotels** |  |  |
| **6:00** | **Optional Chamorro Village / dinner**  |  |
|  |  |  |
| **Day 3 – Thursday****January 8, 2008** |  |  |
| **Hotel pickup 8:00** |  |  |
|  | **Yigo AES station, samples, use backhoe**  |  |
| **11:00**  | **Depart Yigo** |  |
| **11:30 – 12:15 pm** | **Lunch at Andersen**  | **Mr. Russell Young** |
|  | **Andersen Air Force Base: survey, sample, use backhoe** | **Mr. Russell Young** |
| **2:30**  | **Return to UOG** |  |
|  **3:00-3:15 pm**  | **Break UOG** |  |
| **3:15 - 4:30** | **Process samples,** **Open discussion** |  |
|  |  |  |
| **Day 4 – Friday****January 9, 2008** |  |  |
| **Hotel pickup 8:00****11:00****11:30** | **Ritidian Point****Windward Hill Country Club****Ipan Beach Park** |  |
|  |  |  |
| **12:00 – 1:00 pm** | **Lunch Break Jeff’s Pirates cove return UOG** |  |
| **1:15-1:30** | **Travel reports and paper work** |  |
| **1:30-3:00** | **Identify support efforts of participants & Obj A-E** |  |
| **3:00 -3:15 pm**  | **Break** |  |
| **3:15 -4:00** | **Identify support efforts of participants & Obj A-E** |  |
| **4:00 pm**  | **Closing Comments** **group Photo**  | **Yudin**  |
| **Day 5 – Saturday****January 10, 2008** |  |  |
| **2:30 am**  | **Flight out Mr. Badilles** |  |
| **4:20 am** | **Flight out Dr. Pinyopusarerk KE112** |  |
| **7:00 am** | **Flight out Dr. Nandwani** |  |
| **Hotel pickup 8:00****8:30-10:30****10:45-12:00** | **1,000 step trail,** **Finish off recommendations for ironwood project** |  |
| **12:00**  | **Finished** |  |
| **Day 6 – Sunday****January 11, 2008** |  |  |
| **7:30 am** | **Flight out Dr. Spaine CO2** |  |
|  | **Flight out Dr. Nelson CO2** |  |
|  | **Flight out Dr. Smith CO2** |  |

**IRONWOOD DECLINE CONFERENCE**

**University of Guam**

**University of Guam Cooperative Extension Service**

**Western Region SARE Program**

**Western IPM Center**

**Wednesday Jan 7, 2009 Afternoon Session**

**Opening Remarks (12:30):**

Mr. Victor Artero, Associate Director Cooperative Extension Services

**Guam Presenters:**

Dr. Lynn Raulerson University of Guam (Biologist) 12:40– 1:00

Dr. Mark Landers/Mr. Chip Guard University of Guam (Meteorologists) 1:00 – 1:20

Dr. Aubrey Moore University of Guam (Entomologist) 1:20 – 1:40

Bart Lawrence NRCS Guam (Director/Forester) 1:40 – 2:00

Dr. Robert Schlub University of Guam (plant pathologist) 2:00 – 2:20

Dr. James McConnell University of Guam 2:20 – 2:40

Dr. Zelalem Mersha University of Guam (plant pathologist) 3:00 – 3:20

**Break 3:20 – 3:40**

Off Island Presenters:

Dr. Nandwani and Mr. Badilles CNMI College (plant pathologist) 3:40 – 4:00

Dr. Jason Smith University of Florida(plant pathologist) 4:00 – 4:20

Dr. Pauline Smith USDA Forestry Georgia (plant pathologist) 4:20 –4:40

Dr. Scot Nelson University of Hawaii(plant pathologist) 4:40 – 5:00

Dr. Khongsak Pinyopusarerk CSIRO Australia (Casuarina breeding) 5:00 – 5:20

**Closing Remarks:** Dr. Zelalem Mersha (5:20)

A3: Ironwood Workshop Agenda.

**Tree Care Workshop for**

**the Ironwood Tree and Other Trees of the Mariana Islands**

**University of Guam**

**University of Guam Cooperative Extension Service**

**The Davey Tree Expert Company**

**Western Pacific Tropical Research Center**

**Western Region SARE Research and Education Program**

 **Department of Agriculture Forestry and Soil Resources Division**

**Landscape Management Systems**

**Jan 10, 11, 12, 14**

**Purpose:** to update the citizens of Guam and the Northern Mariana Islands on the health of its ironwood tree, and to provide them with tree care practices that can be used to reduce the impact of pests and diseases in ironwood as well as other trees of the region.

Objectives:

 A. To improve Guam’s ironwood tree health and its long-term outlook

 B. Promote good stewardship of the ironwood tree and other agroforestry species.

 C. To explore collaborative projects with The Davey Tree Expert Company

**UOG/Workshop contacts:**

Bob Schlub, work 1-671-735-2089/72, home 1-671-734-3346, rlschlub@uguam.uog.edu

Roger Brown work 1-671-735-2094/80, rwbrown@uguam.uog.edu

ANR office, 1-671-735-2080, Fax 1-671-734-1244

**Location:**

University of Guam, Agriculture and Life Science building, Rm 127

|  |  |  |
| --- | --- | --- |
| **Location / Day / Time**  | **Activity** | **Presenter / Contact**  |
| **Tuesday,** **January 10, 2011** | Saving Guam's Gago / ironwood tree |  |
|  |  |  |
| 7:45 - 8:20 | Registration:Donuts, fruit, coffee, juice  | Brown, Schlub |
| 8:20 | Welcome, Introduction,  | Artero, Schlub  |
| 8:30 | Intro to campus tree walk, |  |
| 8:45 | Exam ironwood trees on UOG campus  | Schlub, Moore, Persad,Others |
| 9:30 | Return to classroom, Break  |  |
|  |  |  |
| 9:45 - 9:55  | Ironwood worldwide | Schlub |
| 9:55- 10:15 | Ironwood on Guam & its decline | Schlub |
| 10:15-10:30 | insect pests of ironwood | Moore |
| 10:30 | Break |  |
| 10:40-12:15 | Subjects: uses of ironwood in urban landscapes and agroforestry, tree care practices for the ironwood; windbreak, pruning, tree hazards, tree recovery, alternative tree species | Persad |
| 12:15 | Lunch (will be provided) | Brown |
| 1:00 pm  | Depart on Field trip |  |
| 1:15-1:45 | Mangilao Golf course: ironwood trees in landscape and windbreak | Schlub, Persad, Moore |
| 2:00-2:45 | Bernard Watson's farm: ironwood decline, windbreak,  | Schlub, Persad, Moore |
| 3:00- 4:00 | Yigo Exp Station: decline, care, windbreak | Schlub, Persad, Moore |
| 4:00 -4:45 | Depart and return to UOG campus | Schlub, Persad, Moore |
| **Wednesday****January 11, 2011** | Tree Care for the Mariana Islands  |  |
| 7:45 – 8:20 | Registration:Donuts, fruit, coffee, juice  | Brown,Schlub |
| 8:20 | Welcome, Introduction,  | Artero, Schlub  |
| 8:30 | Intro to campus tree walk, |  |
| 8:45 | Exam trees on UOG campus  | Schlub, Moore, Persad,Others |
| 9:30 | Return to classroom, Break  |  |
| 9:45 - 10:15 | Tree diseases | Schlub |
| 10:15-10:45 | Tree insects  | Moore |
| 10:45- 12:00 | Plant Health Care for trees of Guam and the Mariana Islands | Moore |
| 12:00 | Lunch |  |
| 12:45 -2:00 | Plant Health Care for trees of Guam and the Mariana Islands | Persad |
| 2:00 | Break |  |
| 2:15-3:00  | Round table discussion | Schlub, Moore, Persad, & others |
| 3:00 | Depart for Department of Forestry |  |
| 3:15-4:15 | Presentation and tour of Dept of Forestry | Santos, Soliva |
| 4:15  | Depart Department of Forestryreturn to UOG | Santos, Soliva |
| 4:30 | Arrive UOG  |  |
|  |  |  |
| **Thursday****January 12, 2011** | Exploring collaborationwith The Davey Tree Expert Company  |  |
| 8:15 – 8:40 | Registration: Public Sector | Brown, Schlub |
| 8:40 | Welcome, Introduction,  | Artero, Schlub  |
| 8:45-9:45 | Seminar: Davey Tree working with the public sector | Persad,  |
| 9:45  | Break  |  |
| 10:00-11:30 | Exploring collaboration with Guam's public sector - discussion | Persad & Schlub |
| 1:00 - 1:25 | Registration - Private Sector |  |
| 1:25 - 1:30 | Welcome, Introduction,  | Artero, Schlub  |
| 1:30 - 2:30 | Seminar: Davey Tree working with the private sector |  |
| 2:30  | Break |  |
| 2:45 - 3:45 | Exploring collaboration with Guam's private sector |  |
| 3:45 | **Finished** |  |
|  |  |  |
| SaturdayJanuary 14 | Plant a Tree-Save an Island |  |
| 7:50 - 8:25 | Open |  |
| 8:25 | Welcome, Introduction |  |
| 8:30 - 9:30 | Ironwood Decline, Basics of tree care for home owners | Persad |
| 9:30 - 11:00 | Ask the experts | Persad, Schlub, Moore |
| 11:00 - 12:00 | Visit Displays, Tree give-a-way |  |
| 12:00 | Finished |  |