

RAPID 'ŌHI'A DEATH (ROD) QUICK SAMPLING FIELD GUIDE

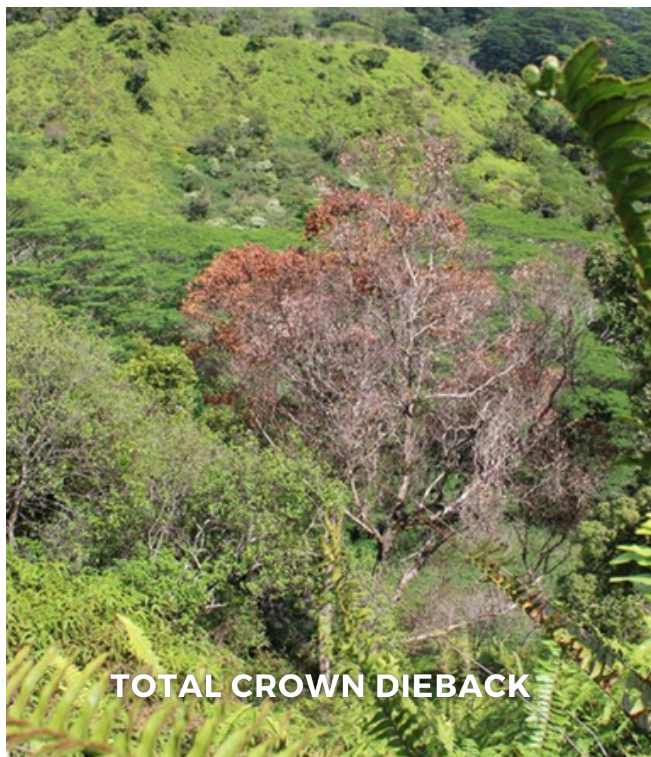
ROD: Two species of the *Ceratocystis* fungi are known to cause ROD:

- ***C. lukuohia*:** Causes tree mortality in approx. 4 weeks from infection, causes total crown dieback and flagging or browning of leaves.
- ***C. huliohia*:** less virulent than *C. lukuohia*. Mortality in trees takes longer. Causes cankers and localized dieback/flagging.

Both species of ROD cause leaf browning AKA "flagging". Leaf browning ranges from colors of light pink to rust brown. Leaves eventually fall off and remaining symptom is fine branching in the canopy.

SYMPTOMS OF ROD

- FLAGGING BRANCHES
- EXPOSED FINE BRANCHING
- TOTAL CROWN DIEBACK



RAPID 'ŌHI'A DEATH (ROD) QUICK SAMPLING FIELD GUIDE

SAMPLING TOOLS

MINIMUM TOOLS:

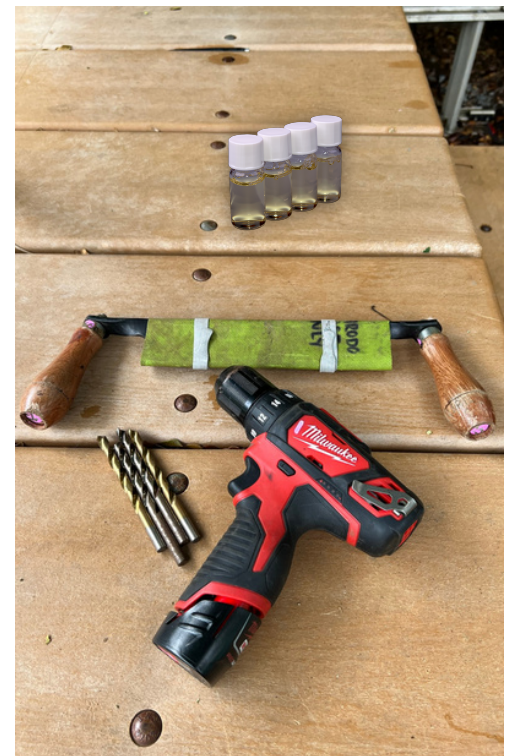
- GALLON ZIPLOC BAGS
- DISPOSABLE GLOVES
- SHARPIE
- ORANGE FLAGGING
- HATCHET
- HAND SAW
- ISOPROPYL ALCOHOL (70% MINIMUM)
- PRUNING SEAL
- BRUSH (FOR ROD ONLY)
- PHONE OR GPS UNIT FOR COORDINATES

EXTRAS:

- PLASTIC VIALS (FOR FRASS)
- DRAW KNIFE
- PORTABLE ELECTRIC DRILL
+ 3/8 IN DRILL BITS



EXTRAS



RAPID 'ŌHI'A DEATH (ROD) QUICK SAMPLING FIELD GUIDE

COLLECTING SAMPLES

You are collecting samples of the sapwood, the outermost portion of the tree under the bark. Sanitize tools with isopropyl alcohol between trees to prevent false positive results. Samples do not touch the ground for cleaner result. Note the GPS coordinates of tree and mark with flagging. Cover sample site (wound) with pruning seal.



PRIMARY SAMPLE TYPES:

***DO NOT INCLUDE ANY BARK IN SAMPLES**

Either or both cookie or wood chips samples are needed.

COOKIE

CUT CROSS SECTIONAL DISCS ½ -1" THICKNES.:
SUBMIT 2-4 COOKIES TO LAB.



WOOD CHIPS

SUBMIT AT LEAST ¼ FULL QUART BAG OR 5-6 LARGE,
WET CHIPS (DRY CHIPS ARE NOT USABLE IN LAB TEST).



SECONDARY SAMPLE TYPES:

***DO NOT INCLUDE ANY BARK IN SAMPLES**

not required but if you are able to collect & submit with primary (cookies and/or wood chips).

DRILL SHAVINGS

CHANGE BIT AFTER EACH DRILL HOLE.



FRASS

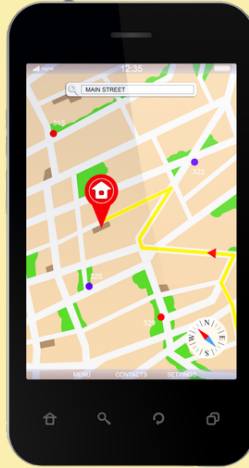
FINE SAWDUST FROM BEETLE ACTIVITY.
SCRAPE LOOSE FRASS INTO ZIPLOC BAG OR VIAL.



RAPID 'ŌHI'A DEATH (ROD) QUICK SAMPLING FIELD GUIDE

SANITIZE & SUBMIT SAMPLES

Note the coordinates and flag tree. Cover sample sites (wounds) with prune sealer. Remove dirt and spray tools and shoes with 70% isopropyl alcohol.



***DO NOT INCLUDE ANY BARK IN SAMPLES**

Label the bag with sample name. Sample name is the date (YYYY,MM, DD), your initials and sample number.

Example: Two samples taken of one tree on 4/18/2022 by John Smith:

Bag with sample 1 labelled as: 20220418JS-01

Bag with sample 2 labelled as: 20220418JS-02



Oahu Island: Fill out the Sample Submission Sheet & drop off samples to HDOA: 1849 Auiki St, Honolulu, HI 96819

RAPID OHIA DEATH SAMPLE SUBMISSION SHEET

Sample Name(s)*: _____
Mail-match sample ID field (using form) 123 ROD v.7. Convention to YYYYMMDD-initia###-## (e.g. 20190604EXB001-02)

Data input to ArcGIS Online Database?: Yes No Location: _____

Collection/Submission date: _____
Collected/Submitted by: Name: _____ Email/phone: _____

Type and # of samples: wood chips (), drill shavings (), frass (), soil (), cookie (), other ()
*Do not send bark, leaves or twigs/limb branches

Island (please circle): Hawaii Island Maui Kauai Molokai Lanai Oahu

Point of Contact for results:
Name: _____ Tel: 808-266-7954 Email: _____
Name: _____ Tel: 808-594-9292 Email: _____
Name: _____ Tel: 808-266-7954 Email: _____

If NOT provided online, please complete this section

Address or Location: _____ GPS & Elevation: _____

Island (please circle): Hawaii Island Maui Kauai Molokai Lanai Oahu

Disease symptoms or signs: wilt <input type="checkbox"/> browning of leaves <input type="checkbox"/> fruity smell <input type="checkbox"/> dead areas/dieback <input type="checkbox"/> internal discoloration <input type="checkbox"/>	Affected parts: trunk <input type="checkbox"/> branches <input type="checkbox"/> roots <input type="checkbox"/> leaves <input type="checkbox"/> flowers <input type="checkbox"/> entire tree <input type="checkbox"/>	Degree of damage: heavy <input type="checkbox"/> medium <input type="checkbox"/> light <input type="checkbox"/>	Insect damage/tunneling: yes <input type="checkbox"/> no <input type="checkbox"/>
--	--	---	--

Describe nature and extent of problem: _____

This section for lab use only

Results: _____

Date processed: _____

Please email any additional photos to: Lisa.Kelch@hawaii.gov and 2019ohia@hawaii.edu

Download Sample Submission Sheet:

bit.ly/oahuRODform