Difenoconazole + Azoxystrobin: Efficacy and Crop Safety for the Control of Anthracnose of Avocado

Project No. P13771
Date: 06/2024

PROJECT TITLE:

Difenoconazole + Azoxystrobin: Efficacy and Crop Safety of Difenoconazole + Azoxystrobin for the Control of Anthracnose of Avocado.

PROJECT JUSTIFICATION AND OBJECTIVES:

IR-4 received a request for the use of Difenoconazole + Azoxystrobin on avocado for control of anthracnose. The purpose of this research is to collect efficacy and crop safety data to support registration of Difenoconazole + Azoxystrobin on avocado for the control of anthracnose.

Adherence to Good Laboratory Practices (GLPs) is not required for trials conducted under this research plan.

IR-4 RESEARCH COORDINATOR:

Consult with the Research Coordinator listed below regarding desired changes in this research plan prior to occurrence.

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06-10-2024

Signature of IR-4 Research Coordinator
Jaimin Patel

Date

MATERIALS & METHODS:

Host plant: Avocado - Use locally grown commercial varieties that are susceptible to the test pest. Report variety/source, lot number, etc.

Test Site: Avocado field (for spray) and laboratory (for inoculation and data collection)

Pathogens(s): Anthracnose (*Colletotrichum gloeosporioides*)

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Treatments:

Treatment	MFG	EPA Reg. #	AI	Application Method	Formulated Product Rate	No. of Appl	GPA
Untreated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Standard control	See label	See label	See label	Foliar Directed	Read label	Read label	80-200 gal/A
Quadris Top	Syngenta	100-1313	Difenoconazole + Azoxystrobin		415 ml/A + adjuvant*	4 applications @ 10-day interval; PHI: 0-day	

*All applications shall include an adjuvant at a rate recommended by the adjuvant label

Test Substances Manipulation: Read product use directions prior to manipulation and application. Applicators and handlers must wear the personal protective equipment listed on the product label. Do not use old/expired products for trials conducted under this research plan. The IR-4 Research Coordinator will arrange for new test substance to be delivered.

Upon receipt of the test substance(s), document the corresponding lot/batch number. Store the test substance in a secure, clean, dry area at temperature ranges noted in the product label. Use application equipment that will provide uniform application of the test substance and simulates the intended commercial application technique. To ensure accurate delivery, calibrate test application equipment prior to application of the test substance(s).

Experimental Design: Each test site should conduct four replicates of each treatment. Arrange experiment in appropriate statistical design. If natural inoculum is not present in the field plot, inoculations should be conducted at two (2) days after the fungicide application for all treatments.

Supplemental Crop treatments: To protect the integrity of this study, manage pests causing significant damage to the crop other than the target pest. Early season applications of fungicides can be made but separate the first application of the test substances and these other fungicide applications by a minimum of three (3) weeks. Maintenance pesticide applications must be applied across the entire test site including the non-treated control plots. Only EPA-registered maintenance pesticides should be used at labeled rates and applied to all experimental units. Document all supplemental crop treatments.

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DATA COLLECTION:

Efficacy:

Evaluate foliar disease severity at the time of each application and an additional one evaluation 1-week after the final application. Record foliar disease severity as the percentage of canopy affected with anthracnose. Evaluate fruit incidence and severity 2-3 weeks after the final application. Harvest 50 fruits from each plot and evaluate each fruit for incidence and severity of anthracnose infection. Incidence is the number of fruit with anthracnose infection while severity is the extent of the anthracnose infection. Data can be presented on a 0-100 scale but please include the raw fruit data with the report.

Fruit and Foliage Injury:

Crop health should be evaluated and reported on all plots 3-4 days after each application and once at trial conclusion. If injury is noted, then additional evaluations must be taken on a weekly basis until no more injury is observed. Assess four randomly selected areas within each plot. Use visual ratings on a 0 to 5 scale:

- For foliar injury: 0 = no adverse effect on foliage; 3 = moderate damage; 5 = severe damage
- For fruit injury: 0 = no adverse effect on fruit; 3 = moderate damage and spotting; 5 = severe damage; spotting

Specify the type of injury (fruit burn, spotting, epinasty, etc.) and record if any delay in maturity occurred. Please provide an overall assessment (if the level of phytotoxicity would be acceptable in commercial production).

STATISTICAL ANALYSIS:

Conduct appropriate statistical analysis to determine if significant differences exist between treatments. Statistical analysis from commonly used agricultural data programs, such as but not limited to Agricultural Research Manager (ARM), SAS, Minitab, etc. is acceptable.

DATA REPORTING:

At trial completion, please submit a final report and the raw data in two separate files to the IR-4 Research Coordinator and the appropriate Regional Field Coordinator (RFC) listed below.

For the sake of consistency and to avoid missing information, IR-4 encourages collaborators to adopt and fill out the Final Report Research Template provided by the Research Coordinator prior to trial conclusion.

The final report and the raw data should be submitted to IR-4 within 60 days of last data collection.

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DATA PUBLICATION:

For non-confidential test substances, IR-4 encourages researchers to publish the results obtained from the study. Any publications should acknowledge support by IR-4 and consider including our plant pathologist, Jaimin Patel, as one of the authors when you publish any article resulting from this protocol. IR-4 Plant Pathologist spends a considerable amount of time in preparing protocol and providing technical details in this protocol.

TRIAL SITE INFORMATION

Researcher	Field ID NO.	RFC
Dr. Romina Gazis University of Florida TREC, 18905 SW 280 Street, Homestead, FL 33031-3314; Ph: 786-217-9276 email: r.gazisseregina@ufl.edu **Shipping address same as above**	P13771.24-FLP20	SOR

RESEARCH FIELD COORDINATORS (RFC)

SOR: Kristen Searer-Jones, IR-4 Southern Region Field Office, Univ of Florida, 1642 SW 23 Drive Bldg 833, PO Box 110720, Gainesville, FL 32611-0720. Ph: 352-294-3979; email: k.searerjones@ufl.edu