



Efficacy and Crop Injury of Inpyrfluxam for management of Southern Blight in Processing Tomatoes

Project No. P13511

Date: 04/2023

PROJECT TITLE:

Efficacy and crop injury of inpyrfluxam for management of southern blight in processing tomatoes

PROJECT JUSTIFICATION AND OBJECTIVES:

IR-4 received a request for the management of southern blight in processing tomatoes. The purpose of this research is to collect efficacy and crop safety data to support registration of test fungicides for control of southern blight of processing tomatoes.

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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Signature of IR-4 Research Coordinator
Jaimin Patel

04/27/2023

Date

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MATERIALS & METHODS:

Host plant: Tomato (processing) - Use locally grown commercial varieties that is susceptible to the test pest. Report variety/source, lot number, etc.

Test Site: Field (must be at two different locations)

Disease/Pathogens(s): Southern blight / Fungi: *Athelia rolfsii* (formerly *Sclerotium rolfsii*)

Treatments:

Treatment	MFG	EPA Reg. #	AI	Application Method	Product Rate	No. of Appl. & RTI ¹ ; Any note
Untreated	N/A	N/A	N/A	N/A	N/A	
Standard registered control	Depends on the product	Depends on the product	Depends on the product	Read label	Read label	Read label
Excalia	Valent	59639-230	Inpyrfluxam	Drench (directed to the base of the plant)	2 fl oz/A	1 st application at transplanting in 500 gal/A volume; 2 nd to 4 th applications in 70 gal/A volume at 30, 60 and 90 days after 1 st drench; 1 day PHI

¹ RTI= Re-treatment Interval

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 within 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: Please select a tomato field that has a history of southern blight.. If field site does not have a history of southern blight, please perform artificial inoculation. Please keep a record of inoculum concentration and a plant stage when inoculum is applied. Inoculate with pathogen when soil has an optimum conditions (i.e. soil moisture & temperature) for *S. rolfsii* growth. Each test site should include four (4) blocks and each block should contain all treatments. Arrange plots in a randomized complete block design or other appropriate statistical

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design. The individual plots should be large enough to permit accurate application of the test substance in a manner that represents the major application technique that will be used commercially. Conduct appropriate statistical analysis to determine if significant differences exist between treatments.

Supplemental Crop treatments: To protect the integrity of this study, manage pests causing significant damage to the crop other than the target pest. Only EPA-registered maintenance pesticides should be used at labeled rates and applied to all experimental units. Document all supplemental crop treatments.

DATA COLLECTION:

Efficacy:

Collect disease severity and incidence from each treated plot weekly starting from first appearance of the symptoms. Disease severity should be recorded as the percent of affected tissue per plant. Incidence should be recorded as the number of plants showing disease symptoms or signs in percentage. Record type of disease symptoms observed (i.e. wilted plants, lesion on stem, girdling of the stem, etc.). When submitting report, please provide percent increase or decrease in disease severity/incidence compared to untreated control.

Crop Injury:

Crop health should be evaluated and reported on all plots weekly after each application and once at trial conclusion. Assess enough number of plants in each treatment. Use visual ratings on a 0 to 5 scale:

- For foliage injury: 0 = no adverse effect on foliage; 3 = moderate foliage damage; and 5 = severe foliage damage including defoliation and numerous spotting
- If damage appears to affect plant stand, record such data with type of injury.

Specify the type of injury (Stunted plant, dying branch, leaf burn, leaf cupping or twisting, chlorosis, etc.). If injury observed on tomato fruits, please record injury on a similar scale as well. Please provide an overall assessment (if the level of phytotoxicity would be acceptable in commercial production).

Yield:

Determine the marketable yield (i.e. weight). Provide percent increase or decrease in marketable yield compared to untreated control.

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.



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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 90 days of last data collection.

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.

TRIAL SITE INFORMATION

Researcher	Field ID NO.	RFC
Dr. Jaspreet Sidhu Vegetable Crops Farm Advisor Cooperative Extension Kern County 1031 South Mount Vernon Avenue Bakersfield, CA 93307 661-868-6222 jaksidhu@ucanr.edu Shipping address is same as above	P13511.23-CAP14	WSR

RESEARCH FIELD COORDINATOR (RFC)

WSR: Dr. Kari Arnold, Regional Field Coordinator, Western Region, Western Region IR-4 Project, Cell: (530) 574-9181; email: klarnold@ucdavis.edu