Efficacy and Crop Safety of Fluopyram for the Control of Nematodes in Fig

Project No. P13744
Date: 06/2024

PROJECT TITLE:

Efficacy and Crop Safety of Fluopyram for the Control of Nematodes in Fig.

PROJECT JUSTIFICATION AND OBJECTIVES:

IR-4 received a request for the use of fluopyram for control of nematodes in fig. The purpose of this research is to collect efficacy and crop safety data to support registration of Fluopyram for use on this specialty crop.

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

06/07/2024
Date

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MATERIALS & METHODS:

Host plant: Fig - Use locally grown commercial varieties that are susceptible to the test pest.

Pest(s): Nematodes affecting fig. The CA trial will collect data on Southern root-knot nematode (*Meloidogyne incognita*)

Treatments:

Treatment	MFG	EPA Reg. #	AI	Application	Rate & other notes
Untreated	N/A	N/A	N/A		N/A
Vellum One	Bayer	264-1078	Fluopyram	1st application: soil drench or drip or micro sprinkler followed by 2nd application: soil drench, drip or micro-sprinkler at root zone	202 ml/A; Two applications @ 7-day interval/year; Apply product with sufficient water; PHI: 7-day

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: Conduct a trial in the field with known history of nematode infestations in Fig. Each test site should include appropriate number of replications. Reasonable experimental units should be included to minimize the impact of the non-uniform distribution of the pest. Arrange plots in a randomized complete block design or other appropriate statistical 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.

Supplemental Crop treatments: The integrity of the study should be protected by managing pests causing significant damage to the crop other than the test target pest. 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:

Treatments will be applied in the spring of the first and second experimental year. Treatment assessments will be conducted as follows in both years.

Samples should be collected from each replication three times: 1) before the treatments, 2) at 3-month after treating, and 3) at 6-month after treating to determine the root-knot nematode population in soil. Root samples will be taken by digging 1-ft deep trenches tangentially to the tree root system after 3-month and after 6-month period to rate roots for RKN galling on a scale of 0 to 10 (0= no galls and 10= roots completely galled), and macerate them for nematode extraction. The galls are symptomatic for RKN disease. Growth will be assessed by measuring the diameter of the trees. If warranted fruit yields will be determined with a single harvest. The respective harvested material will be destroyed.

Crop Injury:

Assess phytotoxicity in the plot(s) preferably 7-14 days after treating of the fig trees, using the damage scale indicated below. The untreated plot should be assessed on each date that any treated plot is assessed. The rating is an assessment of the damage throughout the entire plot. If a rating of 1 or higher is given to a plot, a follow-up rating is needed 7-14 days after that, even if there is no additional test substance application in the interim, unless this rating is given to the crop at harvest.

Scale:

- 0 = no damage seen in the plot
- 1 = damage in ≤10% of the plot
- 2 = damage in 11-25% of the plot
- 3 = damage in 26-50% of the plot
- 4 = damage in >50% of the plot

Please keep a note of the type of crop damage seen.

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.

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 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. Andreas Westphal Kearney Agricultural Research & Extension Center 9240 S Riverbend Ave Parlier, CA 93648 Phone: 559-646-6555 Email: andreasw@ucr.edu **Shipping address is same as above**	P13744.24-CAP20	WSR

RESEARCH FIELD COORDINATORS

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