

Efficacy of Several Products for Managing Thrips Insects.

Ornamental Protocol Number: 07-004

Objective: Determine efficacy of new active ingredient formulations and new biopesticides for managing thrips infesting ornamental horticulture plants.

Experimental Design:

Plot Size: Must be adequate to reflect actual use conditions.

Replicates: Minimum of 6 with previously infested plant materials or 12 replications if relying upon attracting natural infestations or if infesting plant materials.

Application Instructions: Apply each treatment according to directions below. For foliar applications, make two consecutive applications 7 to 14 days apart according to manufacturer instructions. If no such instructions are available in the table below, apply at 14 days apart. For drench applications, make a single treatment to soil profile using sufficient volume to treat soil profile or a volume specified by manufacturer. Applications should be made using application equipment consistent with conventional commercial equipment.

Target Species: Western Flower Thrips (*Frankliniella occidentalis*), Onion Thrips (*Thrips tabaci*), Cuban Laurel Thrips (*Gynaikothrips ficorum*) or other species. Contact your regional coordinator if additional target species are of interest.

Plant Hosts: Use a plant host suitable for target species, such as snapdragons, cosmos or lisianthus. Record crop species and variety used.

Use Site: May be greenhouse, field container or field in-ground. Please specify in final report.

Evaluations: Record initial thrips population (all countable life stages – larvae, pupae, adults) and initial thrips feeding damage. Larvae and pupae may be counted together as immatures. Evaluations should occur 0, 7, 14, 28, 42, and 56 days after application or until no efficacy. Record plant height & width at initial and final evaluations only. Record phytotoxicity at each rating date on a scale of 0 to 10 (0 = no phytotoxicity; 10 = complete kill). If phytotoxicity is observed in treated plants, take pictures comparing treated and untreated plant material.

If different application methods or evaluations are made, please clearly specify differences in final report and explain how they enhanced results.

Recordkeeping: Keep detailed records of weather conditions including temperature and precipitation, soil-type or soil-less media, application equipment, application volume per area, irrigation, pot/liner size, plant height & width, and plant growth stage at application and data collection dates.

Treatments:

See tables on the following pages. Standards and A priority treatments are in the first table. B and C priority treatments are in the second table.

Reports:

Reports submitted on the standard IR-4 Ornamental Horticulture Research Report Form are preferred. However, reports in the AMT Tests format are acceptable as long as those reports are amended with detailed experimental design and materials and methods, along with raw data, recordkeeping information, and any pictures.

A report submitted electronically is preferred but not required. If the report is provided electronically, the basic report can be sent in MS Word or WordPerfect, the recordkeeping information as pdf or other electronic documents, and the raw data in MS Excel or other suitable program such as ARM.

Please direct questions to: Cristi Palmer, IR-4 HQ, Rutgers University, 500 College Road East, Suite 201W, Princeton, NJ 08540, Phone 732-932-9575 x4629, palmer@aesop.rutgers.edu.

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Revised By: CLP

Priority A and Standard Treatments List with rates, special application instructions, and contact information to obtain product and any suitable adjuvant needed.

Priority	#	Product (active)	Rates	Special Application Instructions	Contact Information to obtain materials and any needed adjuvants
A	1	BYI-8330 (spirotetramat)	1.7 fl oz (50 ml) per 100 gal	Two foliar applications, 14 d interval	Bayer, Mike Gorrell, 919-549-2423, mike.gorrell@bayercropscience.com
	2	BYI-8330 (spirotetramat)	1.7 fl oz (50 ml) per 1500 4 inch pots or per 1000 6 inch pots	Single application drench application. Use appropriate volume to sufficiently wet soil media with out any leaching from bottom of pot.	
	3	Flagship 25WG (thiamethoxam)	8 oz per 100 gal	Foliar spray treatment – using 200 gal per acre <i>NOTE: need data on flowers only, not foliage</i>	Syngenta, Nancy Rechsigl, 941-708-9338, nancy.rechsigl@syngenta.com
	4	Flagship 25WG (thiamethoxam)	8 oz per 100 gal	Drench Treatment - using 2 oz per 6 inch pot <i>NOTE: need data on flowers only, not foliage</i>	
	5	Tick-EX EC (Metarhizium anisopliae F52)	15 oz per 100 gal	Apply at 7 day intervals. Evaluate all stages of development	Novozymes Biologicals Inc., Jarrod Leland, 540-302-1225, JRRL@novozymes.com
	6	Tick-EX EC Metarhizium anisopliae F52	29 oz per 100 gal		
	7	Tolfenpyrad	14 fl oz per 100 gal	Evaluate all stages of development; spray to run off	Nichino, Marie Maks, 302-636-9001 x 3, mmaks@nichino.net
	8	Tolfenpyrad	21 fl oz per 100 gal	Evaluate all stages of development; spray to run off	
Standards	9	Standard Control Tool 1*	See below	See below	See below
	10	Standard Control Tool 2*	See below	See below	See below
	11	Untreated	--	--	

Standards	a	Avid (abamectin)	8 fl oz / 100 gal	Note: suppression only, immature thrips must be in contact with spray	Syngenta, Nancy Rechsigl, 941-708-9338, nancy.rechsigl@syngenta.com
	b	Conserve (spinosad)	6 – 11 fl oz / 100 gal		Dow AgroSciences, Anita Alexander, 770-339-7322, alalexander@dow.com
	c	Mesurrol (methiocarb)	½ -1 lb / 100 gallon	Do not combine with foliar fertilizers; make only 2 applications per season; 10 day interval required	Gowan, Julie Butcher, 928-819-1578, jbutcher@gowanco.com
	d	Tempo (cyfluthrin)	See label for use directions		
	e	Other suitable registered material	See label for use directions		

Priority B & C Treatments List with rates, special application instructions, and contact information to obtain product and any suitable adjuvant needed.

Priority	#	Product	Rates	Special Application Instructions	Contact Information to obtain materials and any needed adjuvants
B		ADV-5004	6.4 fl oz per 100 gal (0.5 ml per liter)	Two foliar applications, 7 day interval	Advan LLC, Rob Fritts, 559-299-2741, RFritts@AdvanLLC.com
C		Allectus (bifenthrin + imidacloprid)	21.3 fl oz per 100 gal	Two foliar applications, 14 d interval	Bayer, Mike Gorrell, 919-549-2423, mike.gorrell@bayercropscience.com
C		Aria 50SG (flonicamid)	90 – 120 g per 100 gal	Note: suppression only.	FMC, Bobby Walls, 919-735-3862, bobby_walls@fmc.com
B		BAS350i (fipronil)	1.2 oz per 100 gal	Two foliar applications, 14 d interval	BASF, Kathie Kalmowitz, 919-270-4592, kathie.kalmowitz@basf.com
C		BotaniGard ES (<i>Beauvaria bassiana</i>)	1 – 2 quarts per 100 gal	Apply BotaniGard ES at 5-10 day intervals. Severe insect pressure may require application at 2-5 day intervals.	BioWorks, Randy Martin, 317-272-1303, rmartin@bioworksinc.com
C		Celero 16WSG (clothianadin)	4 oz per 100 gal	Single application. Drench to fully wet root profile	Arysta, Doug Houseworth, 904-321-0795, LJHouse9@aol.com
C		Marathon Ultra (imidacloprid + cyfluthrin)	25 fl oz per 100 gal	Two applications 14 d apart spraying to wet the foliage; do not use surfactants	OHP, Jeff Dobbs, 770.992.0121, jdobbs@ohp.com
B		DPX-E2Y45	20 fl oz per 100 gal	Two applications, 14 d interval	Dupont, Chuck Silcox, 302-999-5953, charles.a.silcox@usa.dupont.com
C		MilStop (potassium bicarbonate)	For greenhouse plants, recommend 1.25 to 2.5 lbs/100 gallons.	Best used in a program as a rotational material with systemic chemicals. Contact only efficacy. Do not acidify the spray solution. MilStop is a contact-only material; coverage is the key to efficacy.	BioWorks, Randy Martin, 317-272-1303, rmartin@bioworksinc.com
C		Overture (pyridalyl)	8 oz per 100 gal	Two foliar sprays on a 14 day interval NOTE: need data on thrips other than WFT	Valent, Joe Chamberlin, 770-985-0303, jcham@valent.com
C		Pedestal (novaluron)	8 fl oz per 100 gal	Product is an IGR, effective on only immature stages of thrips. Activity may not be observed until 7 days after applications; multiple applications / rotation with other chemistry may be required for optimum results	Chemtura, Kevin Donovan, 203-573-2028, kevin.donovan@chemtura.com
C		Proud 3 (thyme oil)			
C		Pylon (chlorfenapyr)	5 fl oz per 100 gal	Greenhouse uses only; two applications 7 d apart spraying to wet the foliage; do not use surfactants	OHP, Jeff Dobbs, 770.992.0121, jdobbs@ohp.com
A/B		QRD 400	1.3 oz per gal		AgraQuest, Brett Highland, bhighland@agraquest.com

Priority	#	Product	Rates	Special Application Instructions	Contact Information to obtain materials and any needed adjuvants
B		Safari (dinotefuran)	8 oz/100 gal (foliar spray) OR 24 oz/100 gal (soil drench)	Two foliar sprays on a 14 day interval or one soil drench with 4 oz solution/ gallon of potting media	Valent, Joe Chamberlin, 770-985-0303, jcham@valent.com
C		Sugar Mover	1 pt per acre per week in drip irrigation		Albert Liptay, Stoller USA, ?, ALiptay@stollerusa.com
B		TriCon (BW 420)	Rate range is 0.4% to 0.8% solution (1/2 to 1 ounce per gallon). Recommend the 0.4% rate of TriCon as a tank-mix partner or rotational material.	TriCon is also an excellent surfactant – do not add surfactants to a spray solution containing TriCon; phytotoxicity may result. TriCon is a contact only material; coverage is the key to efficacy.	BioWorks, Randy Martin, , rmartin@bioworksinc.com
B		TriStar 70WSP (acetamiprid)	96 g per 100gal	Spray to wet; two foliar sprays on a 14 d interval with a wetting agent such as Capsil. NOTE: need data on thrips other than WFT	Cleary Chemical, Rick Fletcher, 732-329- 8399, rick.fletcher@clearychemical.com