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भारतसरकार/Government of India

कृषि एवं किसान कल्याण मंत्रालय /Ministry of Agriculture & Farmers Welfare
कृषि एवं किसान कल्याण विभाग/ Department of Agriculture, & Farmers Welfare
वनस्पति संरक्षण, संगरोध एवं संग्रह निदेशालय, एन.एच.4, फरीदाबाद (हरियाणा)/
DIRECTORATE OF PLANT PROTECTION, QUARANTINE & STORAGE
N.H.-IV, FARIDABAD (HARYANA) – 121001

Dated: 15 .07.2022

To,

The Directors of Agriculture/ Horticulture

All States/ Union Territories

Sub:-Advisory on South East Asian thrips (*Thrips parvispinus*) on Chilli -reg.

Sir,

I have the honor to bring to your kind notice that heavy infestation of South East Asian thrips (*Thrips parvispinus*) in chilli crop occurred during Rabi 2021 in southern parts of the country leads to significant crop loss, there is possibility the pest may be expected to occur during the ongoing Kharif season based on availability of chilli crop and favourable weather conditions therefore monitoring of chilli crop is required well before devastating effect of invasive pest for adopting management measures at appropriate time and to avoid any economic loss to the farmers.

The symptoms due to thrips damage include deep punctures and scratches on underside of the leaves leads to reddish decoloration and yellowing. Flower petals are also shows brownish streaks due to sucking of sap by thrips shows drying & withering and ultimately results in fruit loss.

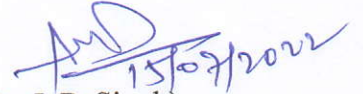
Booklet on “Monitoring, Diagnosis and Management of South East Asian Thrips, *Thrips parvispinus* in Chilli” was developed by DPPQ&S in consultation with ICAR incorporating biology of pest, identification key, damage symptoms, integrated management strategies of pest which is a ready reference for extension functionaries and farmers for management of Invasive Chilli Thrips This booklet is available at the link http://ppqs.gov.in/sites/default/files/south_east_asian_thrips_thrips_parvispinus-monitoring_and_management.pdf The following IPM strategies are suggested in the booklet for the management of thrips on Chilli crop:

- Raise seedlings in protrays under polyhouse condition with insect proof nets. Under open field conditions preference should be given for raised nursery beds and care should be taken to prevent the sucking pest infestation at nursery stage by monitoring the sucking pests with sticky traps
- Collect and destroy infested crop debris. Uproot infected Chilli plants & weeds (*Parthenium* spp, *Abutilon* spp, *Cleome viscosa*, *Prosopis* sp., *Lantana camara*, *Calotropis* sp., *Tecoma* sp) present in the vicinity of field bunds which are acting as off season host to prevent further spread in field.

- Deep summer ploughing & frequent intercultural operations (earthing up, raking of soil) to destroy pupae and residual stages of thrips and other pests.
- Application of well decomposed farm yard manure (FYM) or compost @ 2.5 t/ha, enriched with *Metarhizium anisopliae* or *Pseudomonas fluorescens* @ 2 kg/t along with recommended doses of farm yard manure (25 to 30t/ha).
- Soil application of 500 kg of Neem cake and 1.50 -2.00t on of vermi-compost/ha to induce resistance against thrips
- Seed treatment with Imidachlorpid 70WS @10 g per kg seed.
- Seedling root dip for 30 minutes with Imidachlorpid 17.8% SL @ 0.5 ml/ L.
- Follow recommended spacing (60 x 30 cm or 45 x 45 cm) and avoid close spacing, as the high density planting favors the pest incidence and multiplication.
- Balanced fertilization with enhanced potash application along with nitrogen and phosphorous fertilizers to induce plant resistance against the pest & avoid application of excess nitrogenous fertilizers as it makes plant prone to severe pest attack
- Border cropping with 2-3 rows of tall growing crops like sorghum / maize / bajra / fodder grasses etc. sown thickly as a barrier for thrips movement.
- Intercropping chilli with maize / sorghum and cowpea at 10:3:1 as barrier and reservoir crops for natural enemy multiplication, leading to biological control of thrips.
- Erection of blue or yellow/white sticky traps @ 65–75 traps/ha at crop canopy height for mass trapping purpose and 20-25 traps/ ha for monitoring purpose.
- Adopting sprinkler irrigation system instead of flood irrigation, since the jet of water spray from sprinklers disrupts the growth and multiplication of thrips.
- Spraying of microbial based insecticides like *Beauveria bassiana* or *Lecanicilium lecanii* at 4.00 g or ml/L (spore load - 1x10⁸ cfu/g or ml), *Pseudomonas fluorescence* – NBAIRPFDWD at 20g/L or *Bacillus albus* – NBAIR-BATP @ 20 g/L uniformly covering whole plant.
- Foliar spray of Entomo Pathogenic Nematode (EPN), *Steinernema carpocapsae* formulation at 10g/L + 1 g wetting agent.
- Soil application of EPNs, *Steinernema carpocapsae* or *Heterorhabditis indica* at 7.50-12.50 kg/ha. It can be applied as soil drenching after mixing in 500 -750 L of water. EPN's are to be used early in the morning or during late evening hours as they are sensitive to UV and high temperature. Spraying of EPNs in peak sunshine hours be avoided.
- Spraying % Neem Seed Kernel Extract (NSKE) or 5% Neem Seed Powder Extract or 0.50% Neem oil (5 ml/L), 0.50% Pongamia oil (5 ml/L), and 5% *Vitex negundo* extract (50 ml/L)
- Spraying of commercial formulation of neem based insecticide (Azadirachtin 3000 PPM) @ 2 ml/L.(how much water/ha)
- Spraying of 2% Fish Oil Rosin Soap (FORS) (20 ml/L) solely or in combination with Neem Seed Kernel Extract
- Spraying of sea weed (*Kappaphycus alvarezii*) extract @ 2 ml/L for inducing resistance in plant to withstand the severe incidence of thrips.
- The waiting periods mentioned against insecticide molecules (furnished in the annexure below) to be followed to avoid pesticide residues in the harvested produce.
- Repeated spraying of chemical insecticides with same mode of action and spraying of sub-lethal doses to be avoided to overcome thrips resurgence (sudden outbreak)
- Farmers are advised for spraying of registration committee approved label claim pesticides only which are attached as **Annexure-I**

Further it is advised that chilli growing areas to be monitored on regular basis and if any incidence of Thrips is reported by the farmers, extension functionaries and even through the newspapers or through any other sources, survey of the affected area may be conducted immediately and the concerned officials at the Division/District/Block may be advised to take the suitable plant protection measures immediately. The detailed information may also be sent to this Directorate through e-mail ppa@nic.in or appa.ipm-ppqs@gov.in urgently to apprise the same to the Department of Agriculture & Farmers Welfare.

Yours faithfully



(Dr. J. P. Singh)

Plant Protection Adviser

Encl: Annexure-I (RC approved pesticides)

Copy to:

1. PPS to Joint Secretary(PP), DAC & FW, Krishi Bhawan, New Delhi- I 10001
2. PS to PPA
3. Officer In-charges of CIPMCs Vijayawada, Hyderabad, Bengaluru, Ernakulum, Trichy & Nagpur for necessary follow-up

CIB-RC approved registered Pesticides for Thrips of Chili

Crop	Common name of the disease	Dosage per ha			Waiting period from last application to harvest (in days)
		a.i. (g)	Formulation (g/ml)%	Dilution water (L)	
Acephate 95 % SG	Thrips	750	790	500	07
Acetamiprid 20 % SP	Thrips	10-20	50-100	50-600	03
Carbofuran 03 % CG	Thrips	1000	33300	--	--
Cyantranilprole 10.26 % OD	Thrips	60	600	500	03
Dimethoate 30 % EC	Thrips	200	600	500-1000	--
Emamectin benzoate 05 % SG	Thrips	10	200	500	03
Emamectin benzoate 01.90 % EC	Thrips	07.13	375	500	14
Ethion 50 % EC	Thrips	750-1000	1500-2000	500-1000	05
Fenpropathrin 30 % EC	Thrips	75-100	250-340	750-1000	07
Fipronil 05 % SC	Thrips	40-50	800-1000	500	07
Fipronil 80 % WG	Thrips	40-50	50-62.5	500	5
Imidacloprid 70 % WS	Thrips	700-1050	1000-1500	--	--
Imidacloprid 30.50 % m/m SC	Thrips	43.75-52.5	125-150	500	5
Imidacloprid 17.80 % SL	Thrips	25-50	125-250	500-700	40
Lambda-cyhalothrin 04.90 % CS	Thrips	25	500	500	5

Lambda-cyhalothrin 05 % EC	Thrips	15	300	400-600	5
Methomyl 40 % SP	Thrips	300-400	750-1125	500-1000	5-6
Oxydemeton-methyl 25 % EC	Thrips	250	1000	500-1000	--
Spinosad 45 % SC	Thrips	73	160	500	3
Spirotetramat 15.31 % w/w OD	Thrips	60	400	500	5
Thiacloprid 21.70 % SC	Thrips	54-72	225-300	500	5
Thiamethoxam 30 % FS	Thrips	02.1	7.0	This is used as seed dresser	
Tolfenpyrad 15 % EC	Thrips	150	1000	500	7
Diafenthiuron 47 % + Bifenthrin 09.40 % w/w SC	Thrips	293.75+ 58.7	625	500	7
Emamectin Benzoate 01.50 % + Fipronil 03.50 % SC	Thrips	07.5+17.5 - 11.25+26.25	500-750	500	3 day or 48 hrs. Re-entry period after each application
Emamectin benzoate 5 % w/w + Lufenuron 40 % w/w WG	Thrips	27(Emamectin benzoate 3.0 + Lufenuron 24.0)	60	500	3
Flubendiamide 19.92 % + Thiacloprid 19.92 % w/w SC	Thrips	48 + 48- 60 + 60	200-250	500	5
Fipronil 07 % + Hexythiazox 02 % w/w SC	Thrips	70 + 20	1000	500	7
Hexythiazox 3.5% + Diafenthiuron 42% WDG	Thrips	22.75 + 273	650	500	7
Indoxacarb 14.50 % + Acetamiprid	Thrips	43.31+37.13- 45.94+39.38	825-875	500	5

07.70 % w/w SC					
Profenofos 40 % + Fenpyroximate 02.50 % w/w EC	Thrips	0.4+0.025	1000	500	7