

SOFT FRUIT NEWSLETTER APRIL 2010-04-22

Control of Two Spotted Spider Mite

Two spotted spider mites (TSSM), formerly known as Red Spider Mites, have been seen on many protected strawberry crops in N.Ireland this spring, appearing earlier than normal and on sites which have not previously been affected. The reason may be that any mites in the crop at the end of last year were put into diapause by the sudden cold in November and so survived the cold winter very well. The leaf speckling caused by this pest is not yet apparent.

Spider mites diapause (hibernation) within cracks of wooden stakes, drip irrigation lines, hollow steel work and generally off the plant, usually in small clusters of up to 20, bright orange mites. After they have received a period of brighter, warmer weather they come out of the hiding places, still orange in colour, to start egg laying. Usually this first generation goes unnoticed as the initial feeding damage is insignificant, however the second and subsequent generations can increase rapidly leading to sudden patches of damage and definite fruit loss.

All strawberry growers are advised to check the undersurfaces of leaves in each tunnel or glasshouse using a hand lens. The mites are about 0.5mm long depending on age. Inspect the crop at the warmest time of day then the mites are moving. They are difficult to see when still because at this time of year the colouring is similar to that of the leaf. Two darker spots on either side of the mite are a useful identifying feature, but not seen on the very youngest stages.

The following treatments are approved for use against Two spotted spider mite on protected strawberries.

Product and harvest interval	Active substance	Safety on bees and Beneficials	Efficacy (guide comment, depends on many factors)	Notes
Apollo 50 SC 7 days	Clofentezine Contact only	Safe, can be sprayed when bees flying	Moderate, active mainly on egg stage	Combine with SB Plant Invigorator for a safe treatment against all mite stages.
Various including Gyro, Talstar 80 Flo No HI	bifenthrin Persistent artificial pyrethroid Contact only	Very toxic	good	Apply as a 'clean up' at the end of the season because it will kill bees and beneficials. Max 2 treatments per year.
Borneo 3 days	etoxazole	Reasonable safety, remove bees for 24 h	Good at most stage of spider	Only one treatment a year per crop permitted. Moves

			mite, long persistence for up to 6 weeks.	across the leaf but not systemic, so apply one week before start of harvest when most leaves have appeared.
Dynamec (SOLA 0423/07) 3 days	abamectin	High risk to bees. Remove hives for at least 24 hours after spray.	Good	Contact, ingested and translaminar activity (moves through leaf). Short persistence allows predators to be reintroduced.
Floramite 240 SC 7 days	bifenazate	Safe. Remove bees when spraying or cover hive. Replace when chemical is dry	moderate	Only contact action, so cover leaves thoroughly with spray. Kills mobile stages, not eggs
Various including Majestik No HI	maltodextrin Not required due to physical mode of action.	Safe	moderate	Only contact action which gums up the breathing of the pest. Must achieve complete leaf cover
Masai 3 days	tebufenpyrad	Somewhat dangerous (web sites suggest fairly safe on bees but product label does not.)	moderate	Only contact action, so cover leaves thoroughly with spray. Kills mobile stages, not eggs
Naturalis-L Zero HI	A beneficial fungus that infects and kills a wide range of pests.	Safe for bees	moderate	Requires relative humidity over 60% so best applied in spring in the evening. Top up later in season to maintain the fungal population
Various including Syngenta Bioline, (Pollack, Huniford) Koppert	Phytoseiulus Natural biological control predator, pest must be present for establishment	Safe. A predatory mite	good, provides continuous control for a season	Introduce from May when temperatures are warm. If pests are numerous use a chemical first or the predators will be unable to cope
SB plant invigorator Zero HI	Physical, contact sulphur based soap spray, also	Safe	moderate	Smothers the pest, so complete leaf cover essential, can be mixed with most other sprays, works

	controls aphids, powdery mildew etc.			well with Naturalis-L.
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A control programme could include the application now of Dynamec, which has the advantage of being partially systemic. This could be followed by the application, one week before harvest begins, of Borneo.

During harvest the predator *Phytoseiulus* can be introduced, or a physical smothering product can be used. After harvest use either Dynamec or a bifenthrin product to clean up before winter, with the addition of Apollo to kill the eggs.

Control of resistance

Reliance on chemicals always leads to resistance developing, sooner or later. Mites do not become resistant to *Phytoseiulus* or Naturalis-L. They will also not gain resistance to the physically smothering treatments in SB Plant Invigorator or Majestik.

Growers who do rely on chemicals should always use at least two, at different times of year, for greater efficacy and to reduce chances of resistance developing.

For further information on TSSM or other aspects of soft fruit production please contact Anne Stone on 02894 426683, 07500 957895 or by e-mail on anne.stone@dardni.gov.uk