

RED RASPBERRY: *Rubus idaeus*, 'Meeker'
Two spotted spider mite (TSSM): *Tetranychus urticae* (Koch)

J.T.DeFrancesco,
G.Koskela, G.C.Fisher
Oregon State University
2046 Cordley Hall
Corvallis, OR 97331

LEAF DISC BIOASSAY OF FOUR MITICIDES ON MORTALITY OF TWO SPOTTED SPIDER MITE, 1998:

A laboratory leaf disc bioassay was conducted to evaluate the mortality of TSSM by topical applications, and subsequent leaf residues, of four products. Raspberry leaves from a commercial field with a high population of TSSM were collected 24 Aug. Twenty four hours later, leaf discs (38mm diam) were cut from these raspberry leaves and supported (with the underside of the leaf facing up) on cotton in plastic cups (70 mm diam x 40 mm deep), which were then filled with distilled water. This arrangement prevented mites from moving off the underside of the leaf disc. Thirty adult female mites were aspirated onto each leaf disc. Treatments were applied using a spray tower as described by R.W. Miller, et al (J of Economic Entomology, 1985, Vol. 78, No. 6, pg. 1379). All treatments were applied at a rate equivalent to 50 gal of water per acre and were replicated four times. No surfactant was added to any of the treatments. Treated discs were held in the laboratory under natural light and at approximately 21°C. They were inspected for dead TSSM every 24 h for 5 d. Mites were recorded as dead when there was no movement when probed with a brush.

At 48 h after treatment, all treated leaf discs had significantly higher TSSM mortality than did those of the untreated check. Agri-mek and Naturalis-L displayed greatest mortality, followed by Savey and Vendex. At 120 h after treatment, Agri-mek had the highest mortality while Naturalis-L, Savey and Vendex were comparable to one another but with mortalities still significantly greater than those of the untreated check.

Treatment/formulation	Concentration (product/500 ml)	% Mortality	
		@ 48 h	@ 120 h
Agri-mek 0.15EC	1.25 ml	99.2 a	100.0 a
Naturalis-L	1.25 ml ^a	83.0 a	83.7 b
Savey 50WP	0.45 g	42.8 b	82.1 b
Vendex 50WP	2.39 g	53.2 b	68.2 b
Untreated check	- -	0 c	0 c

^a 2.3 x 10⁷ viable spores per ml

Means followed by the same letter within a column do not differ significantly, based on Fisher's protected LSD, at P ≤ 0.05.

Treatments:

Agri-mek 0.15EC = 5-O-Dimethylavermectin

Naturalis-L = *Beauveria bassiana*, strain ATCC 74040

Savey 50WP = hexythiazox

Vendex 50WP = fenbutatin-oxide