Section VIII
Mites & Sap-Sucking Pests

SPIDER MITE CONTROL WITH ACRAMITE 50WS, 2007

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Yellow spider mite field trial.

Population levels of spider mites in Washington were generally non-economic ones for this season especially in northwestern Washington. Problematic mid-harvest populations of the yellow spider mite, *Eotetranychus carpini borealis,* never reach potential treatment levels of 25 per leaf until late August and early September. This period of intense primocane development, onset of leaf senescence, aggressive numerical response of the mite predator, *Neoseiulus fallacis,* when coupled with the difficulty of physically applying good coverage of an acaricide are all factors favoring late season biological control. Under these conditions we field tested 2 rates of the selective, soon to be registered acaricide, Acramite™ (bifenazate) with Vendex™ (fenbutatin-oxide) on a mature 'Meeker' site in Lynden, WA. Applications were made on 13 September 2007 with our plot spray equipped to deliver 133 gpa at 1.8 mph with 2 D4-45 Tee Jet nozzles on top of boom, with 2 D2-25 nozzles pointing up into the row while both vertical arms were equipped with 14 D3-25 Tee Jet nozzles. Treatments were replicated five times and plots measure 30 feet long by 10 feet wide. Twenty-five leaflets were taken at random from primocanes at chest height on both sides of the row. These samples were sampled with a mite brushing machine. Compared with the untreated check, Acramite at 0.38 and 0.50 lb(AI)/acre were significantly different at 7, 11 and 17 days posttreatment (Table 1). Though non-significant, the average motiles/leaf were numerically less than our standard Vendex, given the cooler field conditions for these comparisons. Most importantly, there were no significant differences in the numerically increasing phytoseiid predator densities on a spider mite population that was still increasing at 27 September. However, at this time, our samples revealed low, overwintering (orange-yellow-colored) females and very few spider mite eggs.

Table 1.

Treatment	lb(AI)/acre	Ptrm	Motile YSM/leaf 7DAT	11DAT	17DAT
Acramite 50WS	0.38	27.9b	8.9b	6.6c	10.5b
Acramite 50WS	0.50	48.7a	9.4b	8.7c	9.3b
Vendex 50WP	1.00	41.1ab	16.5b	21.8b	12.8b
Untreated check		33.3ab	27.4a	30.7a	55.7a

Mean within columns followed by the same letter are not significantly different (Fisher's protected LSD, $P<0.05$), PRC ANOVA SAS.

Twospotted spider mite field trial.

A postharvest population of twospotted spider mite, *Tetranychus urticae,* was sampled and treated on 10 September 2007 in a 2 year-old 'Meeker' field at the WSU Mt. Vernon NWREC. Pretreatment densities for this late season infestation approximated 3 mite/leaf. Though non-economic, this numerically increasing population and cool/cloudy weather conditions were ideal to compare Acramite with Vendex on an incipient twospotted spider mite infestation on red raspberry. Rates and application methods were identical to those used for YSM above. Compared with the untreated check, the 0.05 lb(AI)/acre rate of Acramite was significantly different to 16 days posttreatment given the low levels of this last generation infestation (Table 2).

Table 2.

Treatment	lb(AI)/acre	Ptrm	Motile TSSM/leaf 3DAT	9DAT	16DAT
Acramite 50WS	0.38	3.5a	0.6b	1.5ab	0.9bc
Acramite 50WS	0.50	2.8a	0.2b	0.7b	0.4c
Vendex 50WP	1.00	2.8a	0.8a	1.6ab	1.6b
Untreated check		3.9a	1.7a	3.1a	5.3a

Mean within columns followed by the same letter are not significantly different (Fisher's protected LSD, $P<0.05$), PRC ANOVA SAS.

The registration of Acramite for 2008 season will provide the red raspberry industry with an acaricide that is a very selective, possessing quick knockdown, long residual and exhibiting good activity under PNW weather conditions.