EVALUATING CLOSER ™ INSECTICIDE IN NOBLE FIR CHRISTMAS TREES

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Closer ™ (sulfoxzflor) is a newly labeled insecticide (leafy vegetables, fruits and nuts) for suppression or control of many sucking insect, notably aphids. Efficacy on noble fir Christmas trees was not known.

In the summer of 2013 one research installation was established in W. Salem, OR. to test the product along with 4 operational grower trails. The research trial compared Closer at 2 rates against Lorsban- 4E and an untreated check on 4 foot tall noble fir with an existing aphid (*Cinara occidentalis and C. abietis)* population and evident damage. Evaluations were conducted at 1-week intervals for 21 days following treatment. Experimental design used a randomized complete block with 16 trees/treatment replicated four times. Selected trees were of the same size, and showed similar levels of aphid presence.

Treatments were as follows

Table 1. Treatment details

trt #	flag color	Product	chemical	rate	product used (ml)	surfactant rate	product used (ml)
1	red	UTC					
2	green	Closer	sulfoxaflor	2 fl oz/A	3.66	R-11 0.25%	6.90
3	blue	Closer	sulfoxaflor	4 fl oz/A	7.34	R-11 0.25%	6.90
4	orange	Lorsban-4E	chlorpyrifos	32 fl oz/A	59.00	R-11 0.25%	6.90

Results:
Tables 2 and 3 below compare initial conditions and final results 21 days following applications. No phytotoxicity was observed. We used an actual count of live aphids (twig and conifer) and a relative ranking. The count of living aphids proved more difficult than expected and highly variable depending on the branch selected and even the segment on the branch to count. We chose to look at areas of the tree with the most damage and count aphids at the intersection of 2 and 3 year old needles.

Though the blocks and trees were randomly assigned, the check treatment ended up with a somewhat higher initial aphid count, though the severity was about the same.

Table 2. Initial Summary (7/31)			
Treatment	**Twig aphid (ave)**	**Severity**	**Benificial insects (ave)**
Check	5.77	1.75	0.17
Closer- 2 oz	3.56	1.80	0.47
Closer-4 oz	3.33	1.70	0.84
Lorsban-32 oz	4.11	1.73	0.27

Table 3. Final Summary of Treatments after 21 days			
Treatment	**Twig aphid (ave)**	**Severity**	**Conifer aphid (ave)**
Check	0.42	1.03	0.38
Closer- 2 oz	0.25	1.02	0.17
Closer-4 oz	0.12	1.00	0.09
Lorsban-32 oz	0.06	1.00	0.02

At 21 days following application the severity of damage observed was around the same between treatments. This is expected, as damage does not disappear. Aphid counts for both twig and conifer aphids declined relative to the unsprayed check. Lorsban showed the largest control margin followed by Closer at 4 oz./A and 2 oz./A respectively.

Operational Observations:
Four Christmas tree growers were provided with Closer SC amounts needed for 2ac. trial observations. Comments from each were positive and consistent. Aphid mortality was observed 2 days following treatment. No phyto damage was observed. One grower neglected to add a surfactant in one batch and noticed that aphid control was less on this area. The 4 oz. rate appeared somewhat better than 2 oz. rate, but both rates provided control.