

# APPLE: *Malus domestica* Borkhausen, “Empire,” “Cortland,” “Jonagold,” and “Delicious”

## 5 Comparison of Early Season Applications Against San Jose Scale, 2014\*

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San José scale (SJS): *Quadraspidiotus perniciosus* (Comstock)

The purpose of this experiment was to test two early season  
15 insecticides that target overwintering SJS. Cultivars included were  
“Empire,” “Cortland,” “Jonagold,” and “Delicious”. Treatments,  
including an untreated check, were replicated three times in four-  
tree blocks and arranged in an RCB design. Centaur WDG was ap-  
plied at both delayed dormant (24 April) and pink (13 May) at  
20 100 gpa; Esteem 35 WP was applied at pink (13 May) at 100 gpa.  
Live SJS levels were assessed from the previous season’s wood  
for the overwintering generation on 24 April, 21 May, 29 May,  
and 4 June. Selected wood samples were brought into the  
laboratory and dissected under a microscope to determine the  
25 preapplication percentage of SJS winter survival, and also after

application to determine effectiveness. In situ fruit samples  
were taken after the first and second summer generations had  
emerged on 27 June and 29 July, respectively. A harvest damage as-  
sessment was taken on 9 September. All data were transformed and  
subjected to analysis of variance. Means were separated with  
30 Student’s *t*-test.

Very few significant differences were evident from the samples  
were taken from the wood (Table 1). Based on fruit damage, how-  
ever, both the delayed dormant and pink applications of Centaur  
provided acceptable control of SJS throughout the growing season,  
35 as did the pink application of Esteem. Phytotoxicity was not ob-  
served in any of the treated plots.

**Table 1.**

Treatment/form.	Rate amt/acre	Applic. timing	Live SJS on wood				% SJS fruit damage		
			24 April	21 May	29 May	4 June	27 June	29 July	9 September
Centaur WDG	34.5 oz	Delayed dormant	39.3a	8.7ab	3.0a	6.3a	0.0b	3.9b	4.3b
Centaur WDG	34.5 oz	Pink	33.3a	4.7b	3.3a	7.3a	1.1b	8.0b	7.0b
Esteem 35 WP	16.0 oz	Pink	44.0a	8.0ab	6.0a	8.3a	0.0b	5.0b	4.0b
Check	–	–	36.7a	14.7a	9.0a	16.7a	10.0a	34.6a	60.7a

Means within a column followed by the same letter are not significantly different (Student’s *t*-test,  $P \leq 0.05$ ). Data were transformed arcsine ( $\sqrt{x}$ ) prior to analysis.

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