

Site 2 – Ft. Collins		Furrow-irrigated	
CSU ARDEC			
1.	Control		
2.	Actigard 50 + Kinetic	6,5,4,3 wks prebulb	0.75 oz + 0.125 % v/v
3.	Actigard 50 + Kinetic	6,3 wks prebulb	0.75 oz + 0.125 % v/v
4.	Actigard 50 + Kinetic	4,3,2,1 wks prebulb	0.75 oz + 0.125 % v/v
5.	Actigard 50 + Kinetic	4,1 wks prebulb	0.75 oz + 0.125 % v/v
6.	Actigard 50 + Kinetic	4,2,0 wks prebulb	1.0 oz + 0.125 % v/v
7.	Actigard 50 + Kinetic	2,1,wks prebulb & 0,1 wks postbulb	0.75 oz + 0.125 % v/v
8.	Actigard 50 + Kinetic	2 wks prebulb & 1 weeks postbulb	0.75 oz + 0.125 % v/v
9.	Actigard 50 + Kinetic	6,5,4,3,2,1 wks prebulb & 0,1 wks postbulb	0.25 oz + 0.125 % v/v

Treatments applied in 272 ml of water (1088 ml for 4 reps), equal to 25 GPA. All plots are 5' x 25' (125 ft² x 4 = 0.0115 A).

Evaluated IYSV incidence **08/13** and **08/27/07**

Transplanted 'Exacta': **5/3/07**, Harvested: **08/28/07**; Storage Rot Evaluation: **12/03/07**

	Sprayed	Trt 2	Trt 3	Trt 4	Trt 5	Trt 6	Trt 7	Trt 8	Trt 9
6 wks prebulb	06 – 06								
5 wks prebulb	06 – 13								
4 wks prebulb	06 – 20								
3 wks prebulb	06 – 27								
2 wks prebulb	07 - 04								
1 wk prebulb	07 - 11								
0 Bulbing	07 - 18								
1 wk postbulb	07 - 25								

Summary: The *Iris yellow spot virus* (IYSV) incidence and severity during 2007 varied from moderate (Greeley, Pueblo – disease pressure in the area in 2006, but not in these fields) to severe (Fort Collins – disease pressure in this field in 2006). Disease symptoms were initially detected during late July to early August, and the second evaluation during late August was the most severe and relatively uniform (low % C.V.) at ARDEC, but more variable in the commercial fields at Greeley and Pueblo. Thrips pressure also varied during the season, and was light at Pueblo (commercial insecticide program, details not available), moderate at Greeley (commercial insecticide program, details not available) and severe at Fort Collins (no insecticide program).

Analyses of data from each site revealed that yield components (total, colossal, jumbo, medium) were not statistically different. There was no indication of phytotoxicity observed with any treatment at any site. Storage rot data (after more than 12 weeks storage) were not significantly different between treatments at any site, and losses due to combined infection by fungal (e.g., gray mold, black mold) and/or bacterial (e.g., sour skin, slippery skin, soft rot) diseases were considered to be light at all 3 sites. Losses varied from 1 -2 % at Pueblo, to 6 – 22% at Fort Collins, to 11 – 27% at Greeley.

IYSV incidence did vary and was significantly different only at the Pueblo site ($P = 10\%$). In general though the untreated control (# 1) had more severe disease than did early treatments (# 2, 3, 4) at 0.75 oz/A: Pueblo – 26% vs 16, 13, 16% (38 – 50% reduction in disease); Fort Collins – 71.5% vs 65, 66.7, 64.3 (7 – 10% reduction in disease); Greeley – 32% vs 24, 22, 30 (6 – 31% reduction in disease). When averaged over the 3 sites, the means for Treatments 1 versus 2 - 4 are: 45.3% versus 32.3%, 30.9% and 34.3% (24 – 32% reduction in disease). No late treatment (e.g., late prebulb to postbulb) reduced IYSV to any great extent. This early timing (4 to 6 weeks prebulb) supports previous research trends reported from Colorado since 2003.

In summary, the early treatments (e.g., beginning 4 or 6 weeks prebulb with 4 weekly applications at 0.75oz/A/application) showed the most consistent reduction (24 – 32%) of IYSV infection at these locations in 2007. However, onion yield components were not improved by this level of disease control; and highlight the critical need to study the role and value of Actigard in greater detail in 2008.

Future research topics could include Actigard rate (e.g., 0.5, 0.75, 1 oz), total applied (3, 4, 5 oz), spray interval (5, 7, 10 days), application technology (e.g., 1, 2 nozzles per bed), gallonage (e.g., 20, 30, 50 gal/A by ground rig), and adjuvants (e.g., penetrants such as Kinetic, LI 700, Activator). Consistency of plant response and reduced disease incidence/severity need to be further investigated to enhance the onion industry's confidence in the timely use of Actigard (when combined with thrips reduction) as a critical disease management tool to combat this expanding disease threat.