

Final Report for the Saratoga Horticulture Research Endowment

December 11, 2009

Research Agreement No. 09-000067-01

New Evergreen Shrubs for California Landscapes and Gardens: Five Selections of *XChiranthofremontia lenzii* – Documentation, Propagation, Distribution, and Evaluation.

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Executive Summary of Project:

The principal investigators seek funding from the Saratoga Horticultural Research Endowment to document, propagate, and distribute up to five clones of second generation *XChiranthofremontia lenzii* plants for additional testing and future evaluation at up to 14 new sites in California. These are entirely new plants that are significantly different from all other ornamental plants available in California. This final report updates and summarizes all of our work on this project since we filed our interim report (via email) on March 27, 2009.

Results:

This was not a good year for our second generation *XChiranthofremontia lenzii* plants, especially those planted in our experimental garden. The plants in this area of the garden suffered from a major infestation of what we believe to be fremontodendron psyllid (*Diclidophlebia fremontiae* (Klyver) Burckhardt & Mifsud). We had decided to target seven clones for propagation so that we would have the necessary five clones ready for distribution in the fall of 2009, but our propagation efforts did not work out as planned.

Propagation:

See attached excel spreadsheet of all propagation efforts to date (attachment titled: Final Report SHRE 12.11.09.xls).

Our propagation efforts this year have been disappointing. Our overall success rate from January through August was 9.75%, and yielded 115 plants. (This figure is less than the 210 plants that we had planned to distribute in the fall of 2009, so we have put off all deliveries of these plants to the test sites until 2010.) Note that propagations from September through October are still in the cutting flats. Our past experience with cutting propagation of *XChiranthofremontia* indicates that these propagations should be more successful.

It is interesting to note that cuttings of accession 22822 were significantly more successful (38% overall success rate) than all of the others, and that none of these cuttings were taken from plants in the experimental garden. These cuttings were collected from two plants that are growing in clay-loam soil on the garden's mesa. The soil in this location is much more fertile and moisture retentive than the soil in the experimental garden. It is also notable as that these two plants have very few fremontodendron psyllids.

Documentation:

Due to the disfiguring effect from the overabundance of fremontodendron psyllids on the *XChiranthofremontia* plants, it was decided to hold off on documenting the plants until the spring of 2010. Our site integrated pest manager has been monitoring and later treating this pest (with Merit 2F at a rate of 1 ounce per 100 gallons of water) toward enabling us to produce appropriately diagnostic specimens of each plant this coming year. At this time, these pests are much fewer in number, though they are still present at an acceptably low rate.

Future:

We will submit a follow-up report to this "final report" in June 2010 to update you on our continuing progress with this project.

Submitted via email on Friday, December 11, 2009 by Bart O'Brien.

SHRE GRANT FINAL REPORT: <i>XChiranthofremontia lenzii</i> F2 propagations of 7 clones in 2009 page 1 of 3								
Research Agreement No. 09-00067-01 (Reported by O'Brien & Jett on December 11, 2009)								
Accession #	Treatment 0	Treatment 1	Treatment 2	Treatment 3	Treatment 4	total cuttings	cutting date	cutting stuck
22821	0	0	0	0	0	70	5-Jan	6-Jan
22821	0	0	1	0	0	50	18-May	21-May
22821	0	0	0	3	1	50	12-Aug	12-Aug
22821	in flats					50	21-Sep	22-Sep
22821	in flats					50	13-Sep	13-Sep
22821	in flats					50	19-Oct	19-Oct
22821 sums	0	0	1	3	1		5 successful	out of 170
22822	0	0	0	4	0	50	10-Feb	12-Feb
22822	2	3	0	0	4	"	"	"
22822	4	N/A	N/A	N/A	N/A	23	10-Feb	12-Feb
22822	2	1	2	6	0	50	5-Jul	6-Jul
22822	0	0	0	0	5	"	"	"
22822	3	2	0	3	0	40	5-Jul	9-Jul
22822	0	0	0	0	3	"	"	"
22822	0	0	0	0	1	50	12-Aug	13-Aug
22822	1	2	1	2	0	"	"	"
22822	in flats					50	21-Sep	22-Sep
22822	in flats					50	13-Sep	13-Sep
22822	in flats					50	25-Oct	26-Oct
22822 sums	12	8	3	15	13		51 successful	out of 213
22823	0	0	0	0	0	50	10-Feb	12-Feb
22823	0	N/A	N/A	N/A	N/A	56	10-Feb	12-Feb
22823	0	0	0	8	0	50	15-Jul	16-Jul
22823	0	0	0	0	1	50	18-Aug	20-Aug
22823	0	2	0	4	0	"	"	"
22823	in flats					50	14-Sep	20-Sep
22823	in flats					50	28-Sep	28-Sep
22823	in flats					50	26-Oct	27-Oct
22823 sums	0	2	0	12	1		15 successful	out of 206
22824	0	0	0	0	0	50	18-Mar	19-Mar
22824	0	0	0	0	5	50	12-Aug	13-Aug
22824	5	4	4	2	0	"	"	"
22824	in flats					50	13-Sep	13-Sep
22824	in flats					50	21-Sep	21-Sep

22824	in flats					50	25-Oct	26-Oct
22824 sums	5	4	4	2	5		20 successful	out of 100
22825		0	0	0	0	70	11-Jan	12-Jan
22825		2	2	0	2	50	5-Jul	7-Jul
22825		0	0	0	0	2	12-Aug	13-Aug
22825		1	1	1	4	"	"	"
22825	in flats					50	13-Sep	13-Sep
22825	in flats					50	21-Sep	27-Sep
22825	in flats					50	25-Oct	26-Oct
22825 sums	3	3	1	6	2		15 successful	out of 170
22826		0	0	0	0	70	5-Jan	6-Jan
22826		0	0	0	0	50	18-May	19-May
22826		0	0	0	3	1	12-Aug	13-Aug
22826	in flats					50	13-Sep	13-Sep
22826	in flats					50	21-Sep	22-Sep
22826	in flats					50	19-Oct	19-Oct
22826 sums	0	0	0	3	1		4 successful	out of 170
22827		0	0	0	0	50	17-Feb	17-Feb
22827		0	0	2	1	0	15-Jul	16-Jul
22827		0	0	0	0	1	"	"
22827		0	0	0	1	0	18-Aug	20-Aug
22827	in flats					50	14-Sep	20-Sep
22827	in flats					50	28-Sep	28-Sep
22827	in flats					50	26-Oct	27-Oct
22827 sums	0	0	2	2	1		5 successful	out of 150
Accession #	Treatment 0	Treatment 1	Treatment 2	Treatment 3	Treatment 4	total cuttings	cutting date	cutting stuck
Total Sums	20	17	11	43	24	1,179	115 success out of 1,179 is 9.75%	

Treatments:
0. Wounded, bottom heat, Hormex 3:1 (aka: "control").
1. Wounded, bottom heat, and no Hormex used.
2. Not wounded, bottom heat, and Hormex 3:1.
3. Wounded, bottom heat, and 5% Dip & Grow.
4. Wounded, no bottom heat, and Hormex 3:1.

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SUMMARY FOR 2009		
Accession	Potted-up	Cuttings
22821	5	170
22822	51	213
22823	15	206
22824	20	100
22825	15	170
22826	4	170
22827	5	150
SUMS	115	1,179

overall 9.75% success rate as of December 11, 2009

NOTES		
Accession	Success/%	Description
22821	5/3%	This is 'Falling Stars'
22822	51/38%	Tomentose plant
22823	15/7%	Large plant, yellow flowers "A"
22824	20/20%	Flowers age to red
22825	15/9%	Lenz selection of 2008
22826	4/2%	Alternate 1, dwarf plant
22827	5/3%	Alternate 2, narrow short plant