2008 WALNUT ROOTSTOCK ORCHARD TRIALS - YUBA COUNTY

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GROWTH AND PERFORMANCE OF CLONAL PARADOX ROOTSTOCKS TOLERANT TO *PHYTOPHTHORA*

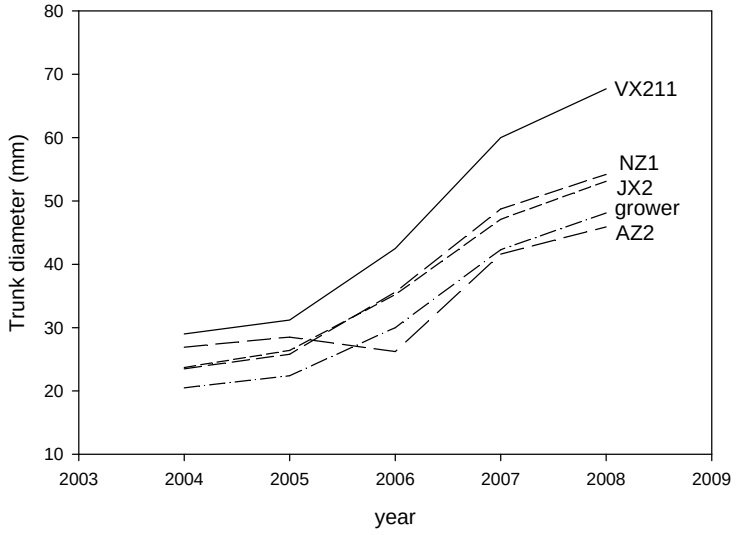
Research cooperators: Samuel Metcalf and Claudia Negrón
Grower/cooperator: Doublenut Farms, Yuba County.
Established: May 23-24, 2005
Design: 5 rootstocks - 4 clonal Paradox, VX211, AZ2, NZ1, JX2, and one seedling Paradox control. Rootstocks are replants in an orchard with severe tree loss from *Phytophthora*, randomized complete block design, 12 single tree replicates.

2008 Growth and Survival Results

VX211 continues to be significantly larger than any of the other rootstocks. There was 100 percent survival of all clonal material. Seventeen rootstocks were grafted to Chandler by Alex Suchan and Carolyn DeBuse in April and all were successful. One seedling Paradox check was still too small to graft and will have to be grafted in 2009.

Treatment	June 2005 Diameter (mm)	Dec. 2005 Diameter (mm)	Nov. 2006 Diameter (mm)	Nov. 2007 Diameter (mm)	Nov. 2008 Diameter (mm)	% Change (June 2005 to Nov. 2008)	Avg. Growth rating[1]	Survival (%)
VX211	29.0	31.2	42.5 a	60.0 a	67.7 a	+133	2.75	100
AZ2	26.9	28.5	26.2* c	41.6 b	45.9 b	+71	2.25	100
NZ1	23.5	25.8	35.6 b	48.7 b	54.2 b	+131	2.67	100
JX2	23.7	26.4	35.2 b	47.1 b	53.1 b	+124	2.67	100
CONTROL	20.5	22.4	30.0 bc	42.3 b	48.1 b	+135	1.75	83**

*Rootstocks were headed near or below 2005 diameter measurement point. 2006 measurement was on new shoot growing above previous cut.
**Seedling Paradox trees died in 2008
[1] Tree growth ratings: 0=dead, 1=poor growth, 2=moderate growth, 3=vigorous growth



WALNUT GRAFT COMPARISON

Cooperator: Joe Conant
Plot Established: 2005
Trees Planted: 1999
Design: Unreplicated comparison between nursery grafted Chandlers on Paradox (NG), own-rooted Chandlers (OR), and field grafted Chandlers on Paradox (FG, grafted same year as planted). Ten trees per treatment were measured. Yield data was collected in the middle between two treatment rows and represents five trees.

2005 -08 results are the means of ten trees; yield is in lbs/tree.

Treatment 2005	**Circumference cm**	**X Sect area cm^2**	**Dry In-shell (lbs)**	**Yield Efficiency**	**# Nuts/lb**
NG	62.9	315.0	82.3	.26	47.2
OR	65.9	345.7	66.6	.19	44.1
FG	65.4	340.5	64.6	.19	41.0
Treatment 2006	**Circumference cm**	**X Sect area cm^2**	**Dry In-shell (lbs)**	**Yield Efficiency**	
NG	68.5	373.6	80.7	.22	
OR	72.6	419.7	72.6	.17	
FG	73.7	432.5	81.0	.19	
Treatment 2007	**Circumference cm**	**X Sect area cm^2**	**Dry In-shell (lbs)**	**Yield Efficiency**	
NG	74.4	440.7	68.0	.15	
OR	78.7	493.1	77.0	.16	
FG	80.2	512.1	81.1	.16	
Treatment 2008	**Circumference cm**	**X Sect area cm^2**	**Dry In-shell (lbs)**	**Yield Efficiency**	
NG	80.9	521.1	Frost Damage[1]	-	
OR	84.4	567.1	-	-	
FG	84.1	563.1	-	-	

[1] There was yield but potentially variable due to April 2008 frost damage so not included.

2008 walnut quality.

2008	**%large sound**	**%Edible Yield**	**% Extra Light**	**%Light**	**%Total Light**
Nursery Graft	100%	50%	32%	63%	96%
Own Root	97%	46%	73%	11%	84%
Field Graft	94%	52%	75%	20%	95%