

GROWTH AND PERFORMANCE OF CLONAL PARADOX ROOTSTOCKS TOLERANT TO PHYTOPHTHORA – SOLANO COUNTY

Bruce Lampinen

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Established: Spring 2005

Design: 3 rootstocks – all clonal Paradox (GZ1, AZ2 and JX2). Rootstocks are replants in three adjacent orchards with severe tree loss from water problems, randomized complete block design, with single tree replicates.

2005 and 2006 Water Potential, Growth and Survival Results

Tree death was minimal in the 2005 season but following the wet spring in 2006, there was extensive tree death. The table below has the total percentage of trees that had died by the end of the 2006 growing season.

Rootstock	Orchard BA7 percent dead	Orchard LE1 percent dead	Orchard DA1 percent dead	Total percent dead
GZ1	37.5	100	100	77.3
AZ2	12.5	33	45.5	31.8
JX2	25	100	58	52.2
Total by Orchard	25	78	68	53

The replants and adjacent trees were the closest to each other in water potential in the BA7 orchard which had the lowest death rate for replants. In the LE1 orchard, the replants tended to be considerably more stressed than the adjacent trees and the overall tree death rate was highest at 78%. In the DA1 orchard, the replants averaged 2.8 bars less stress than the adjacent trees and tree death was 68%.

2006 midday stem water potential of replants versus adjacent mature trees

Rtstck.	Orchard BA7			Orchard LE1			Orchard DA1		
	Replant	Adj.	Diff.	Replant	Adj.	Diff.	Replant	Adj.	Diff.
GZ1	-7.4 a	-6.9 a	-0.5	-9.6	-6.4	-3.2	-5.8 a	-8.9 a	+3.1
AZ2	-10.4 b	-7.5 a	-2.9	-10.6	-5.5	-5.1	-5.9 a	-8.9 a	+3.0
JX2	-7.4 a	-6.9 a	-0.5	Dead	-6.8	n/a	-6.1 a	-8.2 a	+2.1
Overall	-8.4	-7.1	-1.3		-5.9	-4.1	-5.9	-8.7	+2.8