

Fig Rooting Experiment

October 2008

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Objective

- Experiment designed to establish differences in rooting times and success rates for several variables
 - Use of a different “cooling-off” periods for cuttings
 - Variations in cutting stock maturity
- Experimental constants:
 - Cultivar: “Bella” Unknown
 - Cutting preparation methods
 - Environmental conditions (during root development)

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Cutting Preparation & Storage

- Cuttings taken from “Bella-Unknown” trees
- All cuttings include two or more “nodes/joints”
 - Cutting length is approximately 6-7 inches
- All cuttings were cleaned with dilute bleach solution
 - 10% household bleach / 90% tap water
- All cuttings wrapped in damp newspaper
 - Sealed in clear bags to retain moisture
- Storage temperature average 75°F
 - During root development “heating cycle”
- Chilled cuttings stored in refrigeration at 38°F
 - One week or one month

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Experimental Groups

Group	Quantity	Description	Pre-Chill Period	Diameter	Length
A	2	Last year's wood	None	3/4"	6" - 7"
B	6	Current season's wood	None	3/8" – 5/8"	6" - 7"
C	2	Last year's wood	1 week	3/4"	6" - 7"
D	6	Current season's wood	1 week	3/8" – 5/8"	6" - 7"
E	4	Current season's green wood	None	1/4" – 3/8"	6" - 7"
F	4	Current season's green wood	1 week	1/4" – 3/8"	6" - 7"
G	8	Current season's wood, dormant	1 month	3/8" – 1/2"	6" - 7"
H	8	Current season's green wood, dormant	1 month	1/8" – 1/4"	6" - 7"
I	8	Current season's partial wood, dormant	1 month	1/4" – 3/8"	6" - 7"

- “Green Wood” – soft new growth
- “Wood” – lignified or woody growth
- “Partial Wood” – mature new growth, turning woody
- “Dormant” – Leaves fallen off, exposed to a few freezing days

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Cutting Stock



(Top Row) Cuttings taken on 10-04-2008



(Bottom Row) Cuttings Taken on 11-08-2008

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Observations - Root Development (Group A)



10-06-2008 (2 days)



10-09-2008 (5 days)



10-11-2008 (7 days)



10-14-2008 (10 days)



10-17-2008 (13 days)

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Observations – Rooted Cutting (Group A)



10-28-2008 Group A
Cutting In Rooting Media,
Prior to Transplanting,
Total time 24 days



11-09-2008 Group A
Cutting In Potting Media,
Total time 36 days

- Rooting Media – 50% perlite, 50% vermiculite
- Potting Media – Equal parts: turface, perlite, pine bark mulch, sphagnum peat moss

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Observations – Root and Leaf Development



- Roots can develop at various locations on a cutting
 - (Left) Roots forming below upper node with leaf development
 - (Middle) Roots developing at lower node callus
 - (Right) Roots developing between node and callus
- Leaf and root development are independent and highly variable
 - Some cuttings will root without any leaves forming
 - Some cuttings will form leaves but no roots
 - Some cuttings will not form roots or leaves at all

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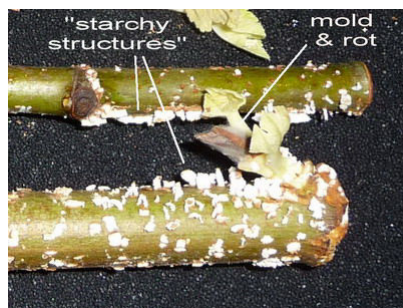
The “Nursery”



- Used to store cuttings during root development (heating cycle)
- Temperature and humidity environment for rooted cuttings
 - Clear plastic tub with a drainage rack
 - Lid kept open one inch for fresh air flow
 - Heating pad used to maintain 70-80 degrees
 - Humidity maintained at 60-80% RH

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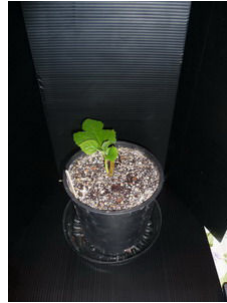
Observation – Unidentified “Starchy Structures”



- “Starchy Structures” observed forming on all cuttings within a few days
- Spongy in texture and easily flake or fall off
- Browning occurs within a week of formation of structures
- Forms on cutting and on new leaf growth
- Do not appear to be early root initials
- Not observed on other cultivars rooted by same method
 - EL Sals, Martin Unknown, Desert King, Adriatic, or Brown Turkey

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Observations – Vigor of Rooted Cuttings



- (LEFT) Group A Cutting 42 days after rooting
 - Larger diameter (3/4") woody cutting
- (RIGHT) Group E Cutting 36 days after rooting
 - Smaller diameter (3/8") green cutting

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Experimental Rooting Results

Description	Average (days)	Std. Dev. (days)	Percent Rooted	#1	#2	#3	#4	#5	#6	#7	#8
A - Last year's wood (no chilling)				13							
B - Current season's wood (no chilling)				X	47						
C - Last year's wood (1 week chilling)											
D - Current season's wood (1 week chilling)				42							
E - Current season's green wood (no chilling)	25.8	5.8	100%	19	21	31	32				
F - Current season's green wood (1 week chilling)	22.5	2.1	100%	19	23	24	24				
G - Current season's wood, dormant (1 month chilling)											
H - Current season's green wood, dormant (1 month chilling)											
I - Current season's partial wood, dormant (1 week chilling)											

Updated 11-28-2008 (55 days into experiment)

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