

SUPPLEMENTARY MATERIAL

Planting Deep Increases Early Survival and Growth of *Pinus echinata* Seedlings

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Supplemental Table 1. Effect of Planting Depth on Survival (%) of Loblolly Pine and Slash Pine Seedlings

	Species	A	B	C	References
		Survival with Root-Collar Near Surface	Survival with Root-Collar Below Surface (Various Depths)	Survival when Planted Deep (to the Terminal Bud)	
1	Loblolly	96.7	96.7	96.7	[1]
2	Slash	83	83	-	[2]
3	Slash	92	95	-	[2]
4	Loblolly	92	95	96	[3]
5	Loblolly	85	95	90	[3]
6	Slash	40	61	68	[4]
7	Loblolly	59*	66	77	[5]
8	Loblolly	80	88	88	[6]
9	Slash	72	72	80	[6]
10	Loblolly	97	97	91	[6]
11	Slash	95	95	89	[6]
12	Slash	77.3	84.4	89.8	[7]
13	Slash	40	60	89.1	[7]
14	Slash	80	90.2	94.7	[7]
15	Slash	56.9	74.2	87.8	[7]
16	Slash	68.4	76.9	84	[7]
17	Slash	86	89	89	[8]
18	Slash	71	70	70	[8]
19	Loblolly	72	82	75.8	[9]
20	Loblolly	79	86	-	[10]
21	Loblolly	84	86	-	[10]
22	Loblolly	84	90	-	[10]
23	Loblolly	92.6	84	87.7	[11]
24	Loblolly	75.3	72.8	90.1	[11]
25	Loblolly	90.1	95.1	90.1	[11]
26	Loblolly	93.8	95.1	85.2	[11]
27	Loblolly	92.6	86.4	82.7	[11]
28	Loblolly	97.5	90.1	85.2	[11]
29	Loblolly	95.1	95.1	90.1	[11]

(Table S1) contd.....

	Species	A	B	C	References
		Survival with Root-Collar Near Surface	Survival with Root-Collar Below Surface (Various Depths)	Survival when Planted Deep (to the Terminal Bud)	
30	Loblolly	95.1	92.6	92.6	[11]
31	Loblolly	88.9	91.4	90.1	[11]
32	Loblolly	91.4	79	81.5	[11]
33	Loblolly	92.6	88.9	86.4	[11]
34	Loblolly	79	77.8	69.1	[11]
35	Loblolly	82.7	80.2	64.2	[11]
36	Loblolly	77.5	82.5	-	[12]
37	Loblolly	55	61.8	-	[12]
38	Loblolly	60.2	57.5	-	[12]
39	Loblolly	36.1	56.8	-	[12]
40	Loblolly	70.4	71.9	-	[13]
41	Loblolly	70	82	-	[14]
42	Loblolly	60	69	-	[14]
43	Loblolly	64	74	-	[14]
44	Loblolly	82	85	-	[14]
45	Loblolly	72	74	-	[14]
46	Loblolly	88	85	-	[14]
47	Loblolly	74.4	71.1	84.7	[15]
48	Loblolly	84	92.1	96.4	[15]
Poorly drained soils or highly eroded topsoil					
49	Loblolly	87	76	69	[16]
50	Loblolly	90	73.4	21.2	[17]
51	Loblolly	89.6	31.6	0.4	[17]

The first 48 pairs in columns A and B were used to generate the equation $Y = 30.1 + 0.66X$ ($R^2 = 0.80$); where Y = survival of seedlings planted with about half of the shoot aboveground, and X = survival of seedlings planted near the root-collar. The regression equation does not include data where there was little or no topsoil [16] or the sites were poorly drained [17]

*Data reported by Koshi [5] indicates he made a transposition error and incorrectly reported data as 41% survival instead of 41% mortality.



Supplemental Fig. (1). Overview of the “outside” planting depth study.



Supplemental Fig. (2). Overview of the shade-house planting depth study.



Supplemental Fig. (3). Examples of seedlings planted outside (with root-collar near the surface) and sampled in May.



Supplemental Fig. (4). Examples of seedlings planted outside (with root-collar 11 cm deep) and sampled in May.



Supplemental Fig. (5). Seedlings that were alive on 30 May 2012 were clipped at 1 cm above the soil surface. On 3 August 2012, more than 95% of the seedlings in both treatments had sprouted ($P > F = 0.34$).

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