









Table 1.--Number of females pollinated, cone set the first year, and mature cone production on S1 jack pine trees following self-pollination and cross-pollination with other S1 trees

S <sub>1</sub> tree no.	S <sub>1</sub> Selfed (S <sub>2</sub> )			S <sub>1</sub> x S <sub>1</sub> -Mix		
	No. of females pollinated	Percent of conelets remaining after first season	Percent of conelets matured	No. of females pollinated	Percent of conelets remaining after first season	Percent of conelets matured
N2	28	46.4	25.0	16	68.8	56.2
N12	6	33.3	33.3	-- <sup>a/</sup>	--	--
N15	3	0.0	0.0	--	--	--
N23	11	45.5	45.5	9	11.1	0.0
N36	17	39.3	29.4	17	76.5	76.5
N40	5	0.0	0.0	5	60.0	60.0
N46-1	14	42.9	28.6	18	55.6	38.9
N46-2	10	50.0	50.0	--	--	--
N53	12	0.0	0.0	14	21.4	14.3
N78	35	8.3	0.0	16	75.0	6.2
N82	12	50.0	33.3	8	50.0	50.0
S16	7	0.0	0.0	3	0.0	0.0
S41	11	36.4	36.4	--	--	--
S42	8	75.0	62.5	9	77.8	55.6
S46	6	16.7	0.0	--	--	--
S75	10	60.0	40.0	11	81.8	27.3
S91	4	50.0	50.0	5	80.0	60.0
S100	7	42.9	42.9	6	50.0	50.0
P14	14	7.1	7.1	8	0.0	0.0
P43	21	0.0	0.0	10	0.0	0.0
P49	8	62.5	25.0	12	75.0	66.7
P62	11	18.2	18.2	7	0.0	0.0
P87	8	12.5	12.5	10	60.0	40.0
P88-1	20	60.0	50.0	31	38.7	38.7
P88-2	10	30.0	20.0	15	33.3	20.0
P90	10	20.0	20.0	13	23.1	15.4
P91	16	12.5	12.5	18	11.1	5.6
P92	41	80.5	73.2	30	66.7	60.0
P100	7	0.0	0.0	14	28.6	0.0
Total	372			305		
Mean		31.0 <sup>b/</sup>	24.7		43.5	30.9
SE		±4.50	±3.87		±5.88	±5.22

a/ No pollinations made.

b/ Comparison by "t" test indicates significant difference at 5% level from S<sub>1</sub> x S<sub>1</sub>.

Table 2.--Total and filled seed yields per cone in S<sub>1</sub> self, S<sub>1</sub> x S<sub>1</sub> cross, and S<sub>1</sub> open-pollinated jack pine

S <sub>1</sub> tree no.	S <sub>1</sub> Selfed (S <sub>2</sub> )			S <sub>1</sub> x S <sub>1</sub> -Mix			S <sub>1</sub> Open Pollinated		
	No. of cones	Total seeds per cone	Filled seeds per cone	No. of cones	Total seeds per cone	Filled seeds per cone	No. of cones	Total seeds per cone	Filled seeds per cone
N2	7	39.6	0.1	9	52.7	37.2	5	65.2	50.6
N12	2	34.0	12.0	-- a/	--	--	5	38.4	18.6
N15	0	--	--	--	--	--	0	--	--
N23	5	28.2	15.2	0	--	--	5	54.4	35.0
N36	5	47.2	24.4	13	42.5	23.6	5	55.2	39.6
N40	0	--	--	3	73.0	0.0	5	60.0	0.0
N46-1	4	70.0	16.2	7	55.7	30.3	3	62.3	38.0
N46-2	5	28.6	1.8	--	--	--	1	3.0	1.0
N53	0	--	--	2	44.0	13.0	5	12.6	4.2
N78	0	--	--	1	66.0	0.0	5	45.0	0.0
N82	4	49.0	20.5	4	40.8	31.3	1	39.0	25.0
S16	0	--	--	0	--	--	0	--	--
S41	4	1.8	0.0	--	--	--	0	--	--
S42	5	40.6	13.8	5	45.6	33.0	5	48.2	37.4
S46	0	--	--	--	--	--	0	--	--
S75	4	64.5	1.0	3	35.3	18.7	1	45.0	23.0
S91	2	19.0	7.0	3	15.7	11.7	5	54.2	39.0
S100	3	9.3	0.5	3	21.3	14.7	0	--	--
P14	1	55.0	5.0	0	--	--	0	--	--
P43	0	--	--	0	--	--	5	42.0	16.8
P49	2	46.0	12.5	8	35.9	16.2	5	45.0	29.8
P62	2	58.0	7.5	0	--	--	5	61.0	26.0
P87	1	23.0	2.0	4	35.8	20.8	2	17.5	11.0
P88-1	10	69.5	32.8	12	41.2	32.9	5	75.0	49.0
P88-2	2	40.0	0.5	3	49.7	31.3	2	21.0	21.0
P90	2	29.0	0.5	2	38.0	14.0	2	46.5	16.5
P91	2	37.0	2.5	1	24.0	10.0	5	20.8	8.2
P92	30	51.3	12.0	18	46.3	29.8	5	60.4	35.4
P100	0	--	--	0	--	--	0	--	--
Total	102			101			87		
Mean		40.0	8.9 <sup>b/</sup>		42.4	20.5		44.2	23.9
SE		±4.02	±1.96		±3.39	±2.60		±4.00	±3.32

--a/ No pollinations made

b/ Comparison by "t" test indicates significant difference at 1% level from S<sub>1</sub> x S<sub>1</sub> and S<sub>1</sub> open-pollination.









Table 3.-- Percent of total seed that is large, percent filled, germination and seedling production per cone

S <sub>1</sub> Tree no.	S <sub>1</sub> Selfed (S <sub>2</sub> )				S <sub>1</sub> x S <sub>1</sub> -Mix				S <sub>1</sub> Open-pollinated				S <sub>0</sub> Open-pollinated <sup>b/</sup>	
	Percent of total seed large	Percent of large seed filled	Percent of large seed germ.	No. of seedlings per cone	Percent of total seed large	Percent of large seed filled	Percent of large seed germ.	No. of seedlings per cone	Percent of total seed large	Percent of large seed filled	Percent of large seed germ.	No. of seedlings per cone	Percent of large seed filled	Percent of large seed germ.
N2	72.9	0.5	0.0	0.0	79.5	88.9	84.9	35.6	85.9	90.4	88.9	49.8	87.0	76.0
N12	85.3	41.4	37.9	11.0	--	--	--	--	80.7	60.0	60.0	18.6	88.0	41.0
N15	<sup>a/</sup> --	--	--	--	--	--	--	--	--	--	--	--	--	--
N23	91.5	58.9	57.4	14.8	--	--	--	--	86.0	74.8	74.8	35.0	79.0	79.0
N36	83.5	61.9	61.4	24.2	63.3	87.7	86.9	23.4	78.3	91.7	90.7	39.2	--	--
N40	--	--	--	--	2.7	0.0	0.0	0.0	--	--	--	--	--	--
N46-1	68.6	35.8	32.8	15.8	72.8	74.6	68.7	27.9	70.0	87.0	80.9	35.3	93.0	90.0
N46-2	60.1	10.5	10.5	1.8	--	--	--	--	100.0	33.3	33.3	1.0	93.0	90.0
N53	--	--	--	--	84.1	35.1	29.7	11.0	41.3	80.8	73.1	3.8	92.0	86.0
N78	--	--	--	--	3.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	--	--
N82	91.5	45.8	45.2	20.2	85.9	89.3	86.4	30.2	87.2	73.5	70.6	24.0	89.0	86.0
S16	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S41	57.1	0.0	0.0	0.0	--	--	--	--	--	--	--	--	--	--
S42	86.7	39.2	35.8	12.6	82.5	87.8	86.7	32.6	86.7	89.5	89.5	37.4	74.0	9.0
S46	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S75	72.1	2.2	2.2	1.0	71.7	73.7	69.7	17.7	71.1	71.9	66.7	20.0	72.0	69.0
S91	92.1	40.0	40.0	7.0	89.3	83.3	69.0	9.7	87.8	81.9	81.9	32.0	72.0	68.0
S100	67.9	5.3	5.3	0.3	79.7	86.3	84.3	14.3	--	--	--	--	62.0	35.0
P14	100.0	9.1	9.1	5.0	--	--	--	--	--	--	--	--	76.0	50.0
P43	--	--	--	--	--	--	--	--	71.9	55.6	55.6	16.8	94.0	75.0
P49	63.0	43.1	43.1	12.5	82.2	55.1	54.2	16.0	80.9	81.9	81.9	29.8	91.0	81.0
P62	63.8	20.3	20.3	7.5	--	--	--	--	60.7	70.3	69.2	25.6	88.0	14.0
P87	100.0	8.7	8.7	2.0	95.1	61.0	61.0	20.8	91.4	68.8	65.6	10.5	75.0	72.0
P88-1	91.4	51.6	51.6	32.8	85.2	86.0	85.8	30.1	82.1	79.6	78.2	48.2	89.0	0.0
P88-2	62.5	2.0	2.0	0.5	79.9	79.0	75.6	30.0	57.5	91.3	87.0	10.0	89.0	0.0
P90	81.0	2.1	2.1	0.5	82.9	44.4	44.4	14.0	87.1	40.7	40.7	16.5	96.0	67.0
P91	23.0	29.4	17.6	1.5	83.3	50.0	45.0	9.0	85.6	46.1	28.1	5.0	85.0	43.0
P92	73.9	32.7	32.2	11.8	73.0	88.2	85.0	28.7	82.4	71.9	71.9	35.8	--	--
P100	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mean	75.6	25.6 <sup>c/</sup>	24.5 <sup>c/</sup>	8.7 <sup>d/</sup>	72.0	65.0 <sup>e/</sup>	62.1	19.5	75.0	68.6 <sup>e/</sup>	66.1	23.5	84.1	56.6
S.E.	±3.83	±4.46	±4.38	±1.94	±5.99	±6.67	±6.50	±2.52	±4.59	±4.88	±4.96	±3.21	±2.07	±6.68

<sup>a/</sup> Indicates no seed available.

<sup>b/</sup> 100 S<sub>0</sub> seed were taken from stored seedlots that had previously been size-graded. Therefore data on total seed and seedlings per cone is not available.

<sup>c/</sup> Comparison by "t" test indicates significant difference at 1% level from S<sub>1</sub> x S<sub>1</sub>, S<sub>1</sub> O.P., and S<sub>0</sub> O.P.

<sup>d/</sup> Comparison by "t" test indicates significant difference at 1% level from S<sub>1</sub> x S<sub>1</sub> and S<sub>1</sub> O.P.

<sup>e/</sup> Comparison by "t" test indicates significant difference at 1% level from S<sub>0</sub> O.P.



















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