

GROWTH PATTERN OF POLAR CLONES

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A study to compare the rate of growth of 15 clones under irrigated conditions was laid out in Bhagat Reservoir plantation over an area of 2.5 ha in February, 1975. The area, an old shisham and mulberry plantation was cleared off all the trees and 1-year old plants of the following 15 clones transported from Pakistan Forest Institute, Peshawar were planted at a spacing of 4.5 x 4.5 m in 0.5 m deep pits.

P. deltoides : Y-507, Y-509, Y-511, Y-539, Y-528, A/65/27,
I-63/51, I-19/46, I-69/55, I. 77/51, I-18/62.

Hybrids : I-214, I-488, I-79/234

P. nigra : Molza

Planting was done in randomised complete block design in 4 replications and 4 blocks in 60 subplots measuring 12 x 12 m. In all 1098 plants were used, 540 in the actual study and 558 in the surround. The crop was measured regularly at the end of growing season. Data on height and diameter over a period of 7 years are tabulated in the appendix. *Populus nigra* (Molza) did not perform well and was excluded from the study.

Inferences

Diameter

It is indicated from the data that diameter growth of clones is highly significantly different and that Italian clones have on the whole given a much better performance as com-

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pared to the clones imported from Yugoslavia and Australia. Their level of significance is given below :

Clones		Diameter cm
I-69/55	I-69/55	23.0
I-77/51	I-77/51	21.9
I-53/51	I-63/51	21.5
I-214	I-214	20.0
I-18/62	I-18/62	19.9
A-65/27	A-65/27	19.8
I-488	I-488	19.6
I-69/64	I-69/64	19.2
79/234	79/234	19.2
Y-507	Y-507	18.8
Y-509	Y-509	17.7
Y-511	Y-511	16.0
Y-528	Y-528	12.4
Y-539	Y-539	10.5

Significant at 5% level

Significant at 1% level

Clones covered by one line are not mutually significantly different.

Height

Height growth is also highly significantly different. Again, Italian clones have done better as compared to Australian and Yugoslavian.

Clones		Height m.
I-69/55	I-69/55	20.2
A-65/27	A-65/27	19.0
I-63/51	I-63/51	18.7
I-77/51	I-77/51	18.4
I-18/62	I-18/62	18.1
I-214	I-214	17.8
I-488	I-488	17.4
I-19/64	I-19/64	16.8
Y-507	Y-507	16.8
79/234	79/234	16.4
Y-509	Y-509	15.3
Y-511	Y-511	15.1
Y-528	Y-528	11.3
Y-539	Y-539	11.2

Significant at 1% level

Significant at 5% level

Clones under one line are met mutually significantly different.

Conclusions

It is indicated that for hot plains of Pakistan, where average annual temperature range is 8°C – 44°C or so, Yugoslavian clones should not be planted. Instead preference should be given to deltoides clones of Italian origin.

APPENDIX

Comparative growth of Poplar clones at Baghat Reservoir Planatation

S.No. Clone No.	Y E A R S											
	February 1976	January 1977	December 1978	December 1979	December 1980	December 1981						
	Dia (cm)	Ht. (m)	Dia (cm)	Ht. (m)	Dia (cm)	Ht. (m)	Dia (cm)	Ht. (m)	Dia (cm)	Ht. (m)	Dia (cm)	Ht. (m)
1. I-69/55	7.6	4.3	10.7	7.50	15.2	15.54	20.4	19.6	21.9	19.97	23.0	20.2
2. Y-509	6.9	3.2	9.9	7.83	12.7	13.11	16.1	14.9	17.1	15.47	17.7	15.3
3. A-65/27	5.6	3.5	9.6	7.83	13.2	15.24	17.4	18.4	19.0	18.97	19.8	19.0
4. Y-507	6.6	4.2	9.6	7.80	12.7	13.11	17.1	16.7	18.4	16.84	18.8	16.8
5. I-19/64	7.4	3.7	11.7	8.47	14.5	12.19	18.1	15.5	18.9	15.62	19.2	15.8
6. I-18/62	6.4	4.3	8.4	7.28	12.2	13.11	17.8	16.8	19.0	17.53	19.9	18.1
7. 77/51	7.4	4.1	10.4	7.95	14.2	13.41	19.6	17.4	22.1	17.83	21.9	18.4
8. Molza	5.8	3.4	7.1	6.80	8.6	10.36	9.9	10.8	10.1	10.51	—	—
9. I-488	6.9	4.4	9.9	8.29	13.2	12.80	17.7	16.7	19.0	16.76	19.6	17.4
10. I-214	7.1	3.3	9.6	7.65	14.0	12.50	18.2	16.6	19.5	16.84	20.0	17.8
11. Y-528	6.1	3.1	8.4	7.59	10.2	10.97	11.7	10.3	12.2	10.97	12.4	11.3
12. 79/234	7.1	3.8	10.4	8.11	13.2	12.50	17.1	16.0	18.5	16.23	19.2	16.4
13. Y-511	6.1	6.5	9.4	5.82	11.4	10.67	14.7	14.2	15.0	14.71	16.0	15.1
14. Y-539	4.6	3.2	6.9	6.95	8.1	9.75	10.2	10.8	10.3	11.05	10.5	11.2
15. I-63/51	6.6	3.8	9.9	7.50	13.5	13.11	19.3	17.4	19.6	18.59	21.5	18.7