

## PERFORMANCE OF POPLAR CLONES UNDER IRRIGATED CONDITIONS IN THE PUNJAB

by

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**Introduction.** A number of studies have been laid out in Pakistan to select suitable clones of Poplar for different climatic regions. A recently concluded experiment near Peshawar (av ann rainfall 300 mm) has shown the superiority of *P. deltoides* I-63/51 over *P. deltoides*, I-90/60, I-72/51, I-69/55, I-18/62 and *P. euramericana* cv. I-214. Since this study was located in the Northern region (Lat. 34.2°N), of the country, it was considered desirable to test most of these and some other clones further south (31.4°N).

**Materials and methods.** The experiment has been laid out in Bhagat Reservoir Plantation (av ann rainfall 300 mm). The soil is clayey loam upto a depth of about 1 m and sandy loam in lower layers. Sub soil water level shows seasonal fluctuation from 5 to 6 m and the temperature ranges between 5°C to 43°C.

After uprooting all the old shisham and mulberry stumps and removal of debris, thorough ploughing was done with the tractor. The area was levelled and 0.75 m deep pits prepared at 4.5×4.5 m. One year old second stage nursery plants of the following clones were carried from the Institute Nursery, Peshawar and planted on 12-1-1975:

I<sup>1</sup>-63/51, I-69/55, I-19/64, I-18/62, I-77/51 (*deltoides*)

I-488, I-214, I-79/234 (*Hybrids*)

Y<sup>2</sup>-507, Y-509, Y-511, Y-528, Y-539 (*Hybrids*)

A<sup>3</sup>-65/27 (unknown) *P. nigra* molza<sup>3</sup>

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1 = Italy

2 = Yugoslavia

3 = Australia

**Layout and design.** Planting was done on 2.2 ha in randomised complete block design, with 4 blocks and 4 replications in 60 sub-plots, each sub-plot measuring 12×12 m. 540 plants were used in the actual study and 558 in the surround. One flood irrigation was given just after planting. The area received 16 irrigations during one growing season resulting in about 2 m total depth of water.

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**Recording of data. Survival.** In the first year, out of the total 36 plants of each clone following survivals were recorded:

Sl No.	Clone	No. of surviving plants on May 31, 1975	Survival percentage
1.	I-63/51	24	67
2.	I-69/55	28	78
3.	I-19/64	32	89
4.	I-18/62	23	64
5.	I-77/51	28	78
6.	I-488	35	97
7.	I-214	36	100
8.	79/234	36	100
9.	Y-507	36	100
10.	Y-509	36	100
11.	Y-511	36	100
12.	Y-528	36	100
13.	Y-539	36	100
14.	A-65/27	19	53
15.	<i>P. nigra</i> (Molza)	36	100

The results have once again confirmed poor rootability of deltoides clones when the plants have to be carried over long distances and there is a time lag of more than 24 hours between uprooting from the nursery and field planting.

**Diameter and height growth.** On March 2, 1978 the heights and diameters were as follows:

Clone	Average height (m)	Average diameter (cm)
I-69/55	15.5	15.5
A-65/27	15.2	13.2
I-77/51	13.4	14.2
I-63/51	13.1	13.5
Y-507	13.1	12.7
Y-509	13.1	12.7
I-18/62	13.1	12.2
I-488	12.8	13.2
I-214	12.5	14.0
I-79/234		
Y-528	12.5	13.2
Y-511	11.4	10.7
<i>P. nigra</i> (molza)	10.4	8.6
Y-539	9.8	8.1

