

DRY AFFORESTATION EXPERIMENTS IN PESHAWAR

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To test the survival and growth of different tree species, under climatic conditions obtaining in Peshawar, three studies were laid out in the Pakistan Forest Institute in 1977. In all the three studies one year old tube plants were used. Planting was done just after rain.

Study No. 1. In this study *Tecoma undulata*, *Acacia cyanophylla* and *Euc. camaldulensis* were planted in February 1977, 5 replications, in each plot 24 plants were planted at 1x1m spacing using 260 plants of each species, 720 plants in all. Performance of the species was assessed in November, 1980 with the following results:

Reps.	Treatment	Species	Ht (m)
	A	B	C
I	2.75	4.15	12.31
II	2.48	3.50	11.82
III	1.28	3.40	11.38
IV	0.85	3.59	8.41
V	1.75	1.93	7.38
Treatment:	9.11	16.57	51.30
Total Average:	1.82	3.31	10.26

A: *Tecoma undulata*

B: *Acacia cyanophylla*

C: *E. camaldulensis*.

The difference in height growth of the three species is highly significant. The best height has been put up by *Euc. camaldulensis*, followed by *Acacia cyanophylla* and *tecaoma undulata*.

Study No. 2. Three species viz. *Euc. camaldulensis*, (A) *Acacia modesta* (B) and *Gleditschia triacanthos* (C) were taken up for this study. Planting was done on 10-7-1977 at 2 x 2m using 36 plants of each of the species. Following data were recorded in November, 1980:

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Reps.	Treatment (Species)		Ht (m)
	A	B	
I	4.70	2.60	1.00
II	3.47	2.00	1.00
III	6.80	2.80	0.90
IV	2.40	3.00	0.40
V	4.72	2.00	0.80
VI	3.00	3.30	2.00
Treatment:	25.09	15.70	6.10
Total Average:	4.18	2.18	1.00

The analysis shows that the 3 species have attained highly significant different heights during the past 3½ years, the order of merit being *Euc. camaldulensis*, *Acacia modesta* and *Gleditschia triacanthos*.

Study No. 3. In this study 3 species viz. *Ceratonia siliqua* (A) *Zizyphus mauritiana* (B) and *Tecoma undulata* (C) were used. Planting was done at 2x2m in 3 replications using 18 plants of each species. Half of these plants were mulched using pebbles in a radius of one metre around the plant. Height measurements were recorded in November, 1980 with the following results:

Reps.	Treatment (Species) Ht. (m)					
	A		B		C	
	M0	M1	M0	M1	M0	M1
I	0.10	0.30	2.50	2.30	2.00	2.43
II	1.53	2.00	1.20	3.00	0.80	2.40
III	0.10	0.60	3.00	3.50	1.40	2.60
Treatment:	1.73	2.90	6.70	8.80	4.20	7.43
Total Average:	0.58	1.00	2.23	2.93	1.40	2.48

M0 = Unmulched.

M1 = Mulched.

Major treatments i.e., species are highly significant for heights, the order of merit being *Zizyphus mauritiana*, *Tecoma undulata* and *Ceratonia siliqua*. Minor treatment i.e., mulch has contributed significantly towards height growth at 5% level.

Average rainfall received during the years

Year	Rain received (mm)	Average temperature (°C)	
		Maximum	Minimum
1977	443	29.0	15.8
1978	445	29.1	14.9
1979	267	28.7	13.7
1980	367	28.8	15.6

Indications from the above three studies are that all the above mentioned species can be successfully planted in the localities with 350 mm average annual rainfall with or without mulch. It is further confirmed that *Buc. camaldulensis* is the most important find for large scale afforestation programme in the Barani (rainfed) land.

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