

EFFECT OF LIGHT, SHADE AND AGE ON SURVIVAL OF TRANSPLANTED SEEDLINGS OF *JUNIPERUS EXCELSA*, M. BIEB.

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Summary. *An experiment under split plot design was conducted to know the effect of light, shade and age on survival of transplanted seedlings. Both major and minor treatments were found non-significant. However, seedlings placed in open showed better growth and form.*

Introduction. Since the juniper forests do not regenerate naturally, work has been started in the Institute for developing techniques to raise the juniper seedlings for planting out in the field. As the germination per cent is very low, almost 0.5 per cent, and the seed does not respond to any treatment, it has to be sown in large quantities in the beds from which the seedlings are pricked in polythene tubes. An experiment was conducted to find out the best age for pricking the seedlings and also effect of shade and light on survival and subsequent growth.

Material and Method. The seedlings of different ages grown in nursery beds were pricked on 3-3-1981 in polythene tubes, filled with mixture of sand, garden soil and leaf mould having 1 : 1 : 1 ratio by volume. All the transplanted seedlings were kept in shade for 24 hours before shifting to the experimental site.

The experiment was laid out in split plot design. Major treatments were overhead shade and no shade (open). Minor treatments were different ages of seedlings viz. 5 days (T_1), 10 days (T_2), 20 days (T_3) and 30 days (T_4). Ten seedlings each were replicated four times under each major split. Subsequently treatments were randomised under each split and were placed in shade and open, separately. Seedlings were covered with 1.3 x 1.3 cm wire mesh to protect them from birds and snails. Regular watering with rose can was continued.

Results and Discussion. The final readings were recorded on 3-6-1981 as under:

Replication	Shade				Open			
	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
1	9	9	7	10	7	10	8	10
2	7	8	7	10	7	8	9	10
3	9	10	7	6	9	10	7	8
4	8	8	10	10	8	8	7	4
Total	33	35	31	36	31	36	31	32
Percentage Survival	83	88	78	90	78	90	78	80

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Data were statistically analysed. Shade, light and age of seedlings did not significantly influence the survival. However, there was marked difference in form and growth habit of seedlings. Seedlings in the open, where direct sun light was available, developed the following characteristics:

- Light green foliage colour having short stiff needles in a rosette form, vigorous in growth
- All
- All seedlings developed branches.
- Cotyledonous leaves were absent.

In the case of seedlings under shade, the leaves were tender and dark green, Seedlings did not develop branches. Cotyledonous leaves were still persisting.

Conclusion. Seedlings of age 5-10 days were tender and less developed having only two cotyledonous leaves. They needed utmost care at the time of pricking. Comparatively, seedlings of age 20-30 days were full grown with rosette formation of leaves. Their pricking was easier.

Although the age, light and shade did not have a significant effect on their survival, the seedling of 20-30 days, placed in open, grew better, were thrifty, tough and capable of bearing the adverse field conditions.