

# Short Note: On Mutant Albino in Red Sanders

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## Summary

Albino seedling is reported in *Pterocarpus santalinus*. Possible explanation for albino mutation is suggested together with its probable use in breeding.

The use of albino recombinants, as genetic marker, is discussed.

**Key words:** Spontaneous chlorophyll mutation, Albino, Lethal recessive homozygous, Genetic marker.

## Zusammenfassung

Es wird über einen Albino-Sämling bei *Pterocarpus santalinus* berichtet. Für die Albinomutation gibt der Autor eine Erklärung, wobei zugleich die Möglichkeit des Einsetzens als Marker für albino-recombinants diskutiert wird.

*Pterocarpus santalinus* is an endemic species to this country. Its distribution is restricted mainly to Cuddappah and Chittoor districts in Andhra Pradesh and to some pockets of Northern Tamilnadu. The importance of this timber is obvious as the quality wood fetches the foreign currency worth of Rs.75000 per tonne approximately.

Open pollinated progenies were raised from quality wood trees (trees with wavy grains) and non-quality wood trees (trees with normal grains) to understand the genetic nature of the waviness of grains. This work was carried out in the nursery of Genetics Branch, Forest Research Institute, Dehra Dun. In this experiment four to five year old pods,

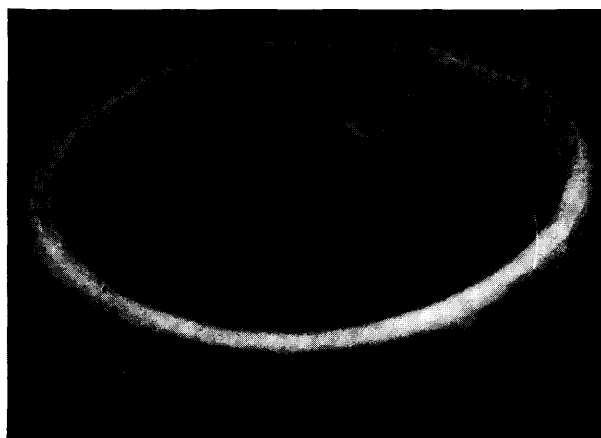


Fig. 1. — Normal and Albino Seedlings in Red sanders

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stored in polythene bags at room temperature under Dehra Dun condition, were also used. From this old stock, which gave low germination percentage, an albino seedling was noticed. Despite much care the albino could not survive beyond the cotyledonary stage.

*Pterocarpus santalinus*, a member of family *Leguminosae*, is considered to be a self pollinated crop. In the present case the mother parent was not heterozygote for this character. Had it been so, it would have produced a number of albinos in accordance with Mendelian ratio. The spontaneous change in one out of hundreds of its counterparts stakes its claim to be a mutant. This seedling leads to assume that the mutation might have taken place at some stage between seed formation and seed germination. The possible explanations for the emergence of such seedlings are:-

- (a) that successive or simultaneous mutation has taken place to bring about this type of lethal recessive homozygote for albino expression
- (b) that this is because of some minor or major changes in modifiers, or etc.

The appearance of chlorophyll deficient mutants, the albinos like this, merely suggests that the said species may prove to be a suitable material for further studies through artificial irradiation and chemical mutagens.

The term "spontaneous chlorophyll mutation" has been used frequently for the albinos occurring in the open pollinated progenies of the cross pollinated crops. At the same time the advantage of this expression, as genetic marker, has also been proposed to study the extent of outcrossing and inbreeding in the concerned species: (VENKATESH and EMMANUEL 1976, VENKATESH and THAPLIYAL 1977). The use of mutant albinos as genetic marker is misleading since spontaneous chlorophyll mutation of any degree cannot be expected in the progenies enabling the researcher to realise the extent of selfing and crossing in the species under consideration. In fact these albinos, the genetic markers, are not the mutants but the recombinants, for lethal recessive homozygous condition, resulting from the parent or parents with a pre-existing mutated gene for this character some time back in their history. The fertilization within or between such heterozygotes will naturally produce the albino types in a well defined ratio. Therefore, these albino seedlings are not spontaneous but with a predetermined nature.

## References

- VENKATESH, C. S. and THAPLIYAL, R. C.: Natural chlorophyll mutants in a Himalayan Pine. *Silvae Genetica* 26, pp. 142 (1977). —  
VENKATESH, C. S. and EMMANUEL, C. J. S. K.: Spontaneous chlorophyll mutation in *Bombax L.* *Silvae Genetica* 25, pp. 137 (1976).