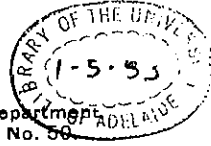


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WESTERN AUSTRALIA.

# PINE NUTRITION

An Account of Investigations and  
Experiments in connection with the  
Growth of Exotic Conifers in  
Western Australian  
Plantations

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## SUMMARY.

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With the object of providing for future local requirements of softwood timber in Western Australia, the Government has planted 11,400 acres of pines during the past 15 years in 16 different centres. The majority of these plantations, consisting of *P. radiata* and *P. pinaster*, have shown rapid and uniform growth.

In common with all plantations of exotic conifers in Australia, certain areas of irregular and abnormal growth have developed. With a view to discovering possible remedial measures and to avoid further planting on sites not likely to give satisfactory results, a detailed study has been made of the factors affecting the growth of pines in plantations, and numerous experiments carried out. This publication is in the nature of a progress report on the main aspects of the work.

The geology and soils of the region concerned are briefly described. Emphasis is placed on the importance of detailed soil survey based on the whole soil profile as a first step in the study of plantation problems, and on virgin soils close correlation has been established between soil type and pine growth. Anomalies due to site changes following intensive cultivation and pasture establishment are discussed.

The depth, physical properties and moisture-retaining capacities of soils have been found to be of very minor importance in determining the suitability of sites for the growth of either *P. radiata* or *P. pinaster*, but the investigations have shown that *P. radiata* requires a soil containing a considerably higher percentage of essential plant nutrients than is needed for the successful growth of *P. pinaster*.

The paramount importance of the fertility factor in determining the value of soils for different pines is postulated and the  $P_2O_5$  content of Western Australian soils is stated to be a valuable indicator of the suitability of different soil types for *P. radiata* and *P. pinaster* respectively, provided such soils have not been intensively developed for pasture or crop purposes.

Remedial measures to restore to normal growth areas of young pine affected by various disorders are described and discussed. The most important corrective treatments applicable to the pine crop on a large scale are cultivation, the application of dressings of superphosphate at the time of and after planting, and spraying very young pines with a solution of zinc salts.