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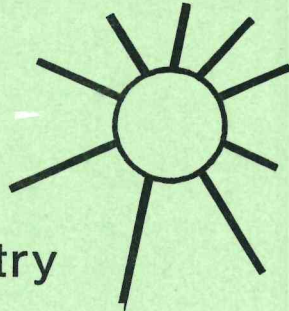
AGROFORESTRY UPDATE

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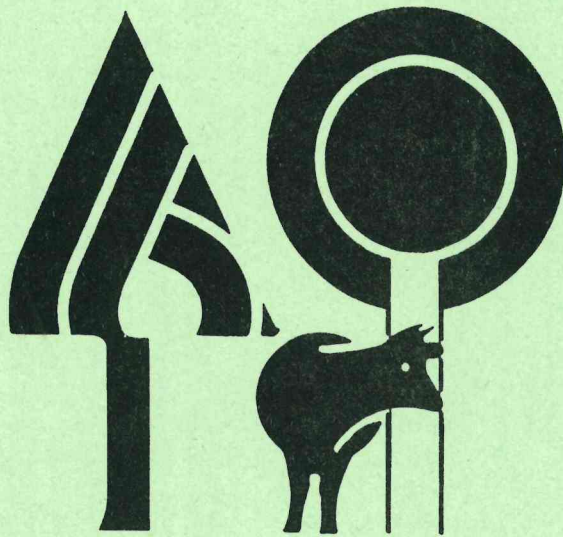
DEPARTMENT OF PARKS AND WILDLIFE

Agroforestry Update



Newsletter for Agroforestry

Researchers and Practitioners



Department of Conservation and Land Management

Department of Agriculture

C.S.I.R.O

Western Australia

ISSN 1030 - 7982

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WOOD UTILIZATION RESEARCH CENTRE AT HARVEY, WESTERN AUSTRALIA

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The Department of Conservation and Land management has a Wood Utilization Research Centre (W.U.R.C.) at Harvey, about 140 km south of Perth. The Centre was set up in late 1984 at a former commercial softwood sawmill.

The need for increased research in timber utilization is related to the changing forest resource. The available sawlogs of mature eucalypts in Western Australia (mainly jarrah and karri) will be depleted in about fifty years. Harvesting of regrowth forest has commenced, and in the future all hardwood will come from regrowth forests. Eucalypts native to eastern Australia are also being grown. Pine, particularly radiata pine, will provide an increasing proportion of the State's timber resources.

The W.U.R.C. research is supervised by a Management Committee of Mr Phil Shedley (Senior Utilization Officer), Mr Des Donnelly (Chief Utilization Officer) and Dr Graeme Siemon (Principal Research Scientist), assisted by Mr Don Challis (Secretary) and Mr John Dorlandt (Accounts). The Management Committee is responsible to a Department Policy Panel which ensures that research programmes are in accord with the Department's policies. The Panel comprises Mr Peter Hewett (Director of Forests), Mr Don Keene (Divisional Manager, Forest Resources) and Dr Per Christensen (Senior Principal Research Scientist).

The W.U.R.C. has programmes covering research into hardwoods and softwoods, as well as looking at viable commercial developments. The major research at present is on regrowth hardwoods, with Commonwealth funding under a Public Interest Project.

An important feature of the research is integrating forest growers, producers, manufacturers and consumers so that available timber resources are used as efficiently as possible. Industry participation in technical advisory groups is regarded as important.

Hardwood research trials

Research trials include the following projects:

Harvesting

A major harvesting trial compared five different machines and methods for felling and snigging in regrowth jarrah stands, and showed a range of options was commercially viable. Long length logging was recommended.

A study of forest residues showed that even after six years on the ground the moisture content of jarrah logs remained above fibre saturation point (f.s.p.); the moisture content at which cell walls start to dry out.

Stockpiling

A stockpiling trial comparing five different watering regimes on jarrah logs showed that a 'one hour on, three hours off' regime produced logs with limited end splitting and reduced growth stresses, similar to the results with continuous watering. A further trial has commenced to assess watering rates to as low as 1:11 which will result in further considerable savings in water and energy.

Sawmilling

Strategies in this field of research will include developing sawing principles and details for green and seasoned products. Sawing principles will cover breaking down methods using edger saws, through and through sawing, conventional and line-bar cutting patterns. Sawing details will take into account differing log dimensions and product requirements using patterns established and published by other research workers.

Seasoning

Seasoning research is concentrating on producing furniture grade timber and other value added products. Previous research showed that eucalypts should be dried in two stages, from green to fibre saturation point and from f.s.p. to final moisture content. Current research programmes are using the batch kiln to develop efficient schedules to prevent checking in the few days after milling. Research and commercial practice have both shown this period to be the most critical in the development of seasoning checks. After developing a reliable schedule for that initial stage, conventional CSIRO schedules will be tested and modified if required in drying down to f.s.p. The final stage will be to dry timber from f.s.p. to final moisture content, and to compare timber dried using conventional kiln schedules with similar material which is high temperature dried. Detailed assessment of moisture gradients at each stage will be made.

High temperature seasoning of jarrah boards has been successfully carried out in both the laboratory high temperature kiln and the commercial kiln.

Wood properties

Preliminary strength tests which compared regrowth and mature specimens of jarrah, karri and marri indicated that regrowth material has similar strength to mature wood. Further testing is planned. The species of particular interest is jarrah, which in the limited sample tested, had strength values higher than published data.

A durability trial has been commenced with the CSIRO Division of Chemical and Wood Technology to compare resistance to fungal attack of selected regrowth and mature Western Australian hardwoods, and several Eastern States species grown in Western Australia. The testing will be done in CSIRO's accelerated field simulator at Highett.

Product development

A project on sliced veneer production and plywood manufacture from regrowth jarrah and karri has commenced. Slicing of figured veneer is also being researched in a search for higher value products.

A furniture blank manufacturing trial using regrowth jarrah will commence in the next few months. The concept of standard edge-jointed panels for use as furniture blanks is designed to increase the efficient use of high value timber in manufacturing.

Management

"GUMTREE" (c) (General Utilization Model of Timber Resource Economic Evaluation) is being developed to model all aspects of a vertically integrated forest-based industry, from standing tree to the marketing of manufactured timber products. The purpose of the model is to provide policy makers and managers with a management tool for planning the efficient production and use of forest resources. Alternative wood processing and marketing strategies can be evaluated, and strategies decided. The sawmilling sector model has been completed, and is being tested.

Softwood research trials

The softwood research programme has concentrated on sawmilling studies of fast-grown pine, particularly radiata pine. The most recent study compared the sawn graded recoveries of similar sized logs milled from an agroforestry trial, a fuel reduced buffer, three conventionally grown plantations, and a private plantation. While sawn graded recoveries and the percentage of F5 stress grade timber were similar, there was a higher proportion of short length F5 pieces in the fast-grown pine. Milling agroforestry logs into boards produced higher recoveries than milling structural timber.

A previous study had compared recoveries from radiata pine of the same age, grown under different thinning treatments. The fast-grown stands produced less volume overall, but substantially more sawlogs, with much higher recoveries.

General

The W.U.R.C. is now a major research centre with excellent facilities for timber utilization research. As stated previously, liaison with the forest grower, the producer, the manufacturer and the user is considered important to make sure that research is "needs-based" as much as possible, with a balance of applied and fundamental research.

Enquiries on timber utilization matters are welcomed by the Department of CALM's timber advisory service on (09) 367 0333.

GROWING TAGASASTE AS A GRAZING AND FODDER CROP IN THE ESPERANCE REGION

**by Dean Savage - Farmer
Esperance, Western Australia**

History

In 1985 I had an area of some 23 hectares comprised of very deep sand hills, waterlogged and salt affected land in between, and a small percentage of "good" country. That is, 1 metre of sand over gravel/clay. This country had performed very poorly in the past, with cropping and pasture, and I decided there had to be a better system of achieving higher returns from that land, and at the same time, stabilizing the country.