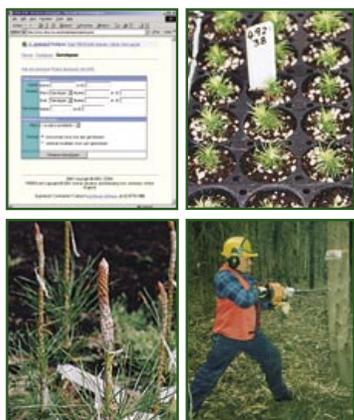## Southern Tree Breeding Association

The Southern Tree Breeding Association (STBA) manages the Australian cooperative tree improvement programs. The STBA has the rights to market TREEPLAN® on a global basis, and has a separate division to handle a bureau service for global clients.

The services include:

- Scoping studies to provide consultancy on how to implement best practice in tree or plant breeding programs
- Projects to input all the trial data, manipulate that data, undertake the genetic and statistical analysis of the data, and to produce predictions of breeding values based on TREEPLAN®
- Providing an ongoing service to update breeding values on a regular basis.

The TREEPLAN® system provides an integrated solution to managing data and regularly producing breeding values for improved profit.

Contacts for further information

Dr T.A. (Tony) McRae
General Manager

Peter Cunningham
Business Manager

Southern Tree Breeding Association
2 Eleanor Street
PO Box 1811 Mount Gambier
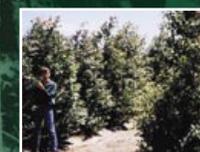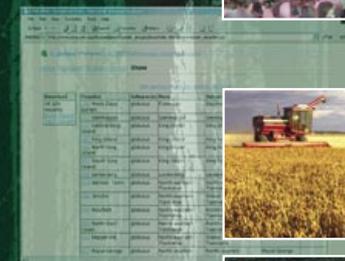SA 5290 Australia

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Generating increased profits through world class genetic solutions

**TREEPLAN®
Genetic
Improvement
Services**

TREEPLAN®
The world's leading genetic evaluation system for tree and plant improvement

The Southern Tree Breeding Association (Australia) has developed TREEPLAN® in partnership with the Animal Genetics and Breeding Unit (AGBU). AGBU has an international reputation for excellence in developing genetic evaluation systems for livestock improvement.
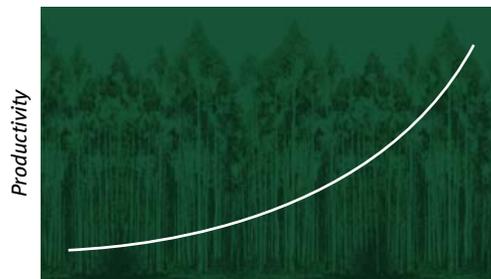
The system will estimate breeding and genetic values for tree species, and can be adapted to do the same for any species of plant.

TREEPLAN® is adaptable to other plant species.

TREEPLAN® is industrial strength 'BLUP' software designed for processing data associated with large genetic improvement programs.

The skilled use of TREEPLAN® can double the rate of genetic gain that can be achieved with conventional systems.

Time (generations)
Productivity

TREEPLAN® can rapidly accelerate improvement in productivity through genetic gain.

TREEPLAN®
Designed to make complex statistical methods accessible and easy to use

- Produces accurate breeding values.
- Allows straightforward and regular updates of breeding and genetic values.
- Fits an individual tree model 'BLUP' using all available information from relatives.
- Designed to make complex statistical methods accessible and easy to use.
- Is fast and minimises computing resources.
- Is coupled to a modern and secure data management system operated via a web based interface.
- Fits mixed models and allows high model flexibility.
- Specification of random and fixed effects are trait and trial specific.
- Is designed to operate efficiently when there are more than 50 traits in multi-trait models.
- Accommodates heterogeneous variances both environmental and genetic.
- Enhancements will include complex spatial modelling of within site environmental effects and incorporation of DNA information.
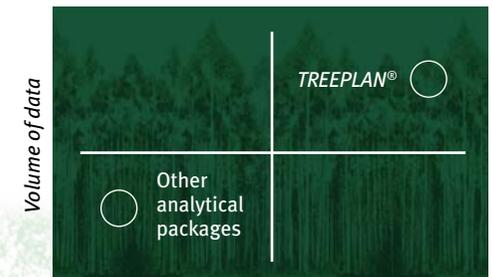

TREEPLAN® will rank individual trees for genetic merit across sites, years and generations.

TREEPLAN®
Ideally suited to large databases with complex pedigree

TREEPLAN® is the result of millions of dollars in research to develop a system that has the power to handle very complex databases including:

- Different regions and sites
- All pedigree data from close and distant relatives (siblings, parents, grandparents, founder groups)
- Different years
- Multiple traits
- Use of unbalanced data
- Complex pedigrees with information on unreplicated individuals and clonal replicates
- Multiple genetic groups to take account of founder effects.

Volume of data

TREEPLAN®

Other analytical packages

Complexity of data

It is the ability to handle complex pedigree together with large databases of information from trials that separates TREEPLAN® from other less robust systems.