



ArborGen Update

December 2005



Except to the extent that they relate to historical information, there are statements included in this document which are “forward looking statements” as defined in the US Private Securities Litigation Reform Act of 1995, and they are included herein in reliance upon the safe harbors created by the Act. As forward-looking statements are predictive in nature, they are subject to a number of risks and uncertainties relating to Rubicon, its operations, the markets in which it competes and other factors (some of which are beyond the control of Rubicon). As a result of the foregoing, actual results and conditions may differ materially from those expressed or implied by such statements.

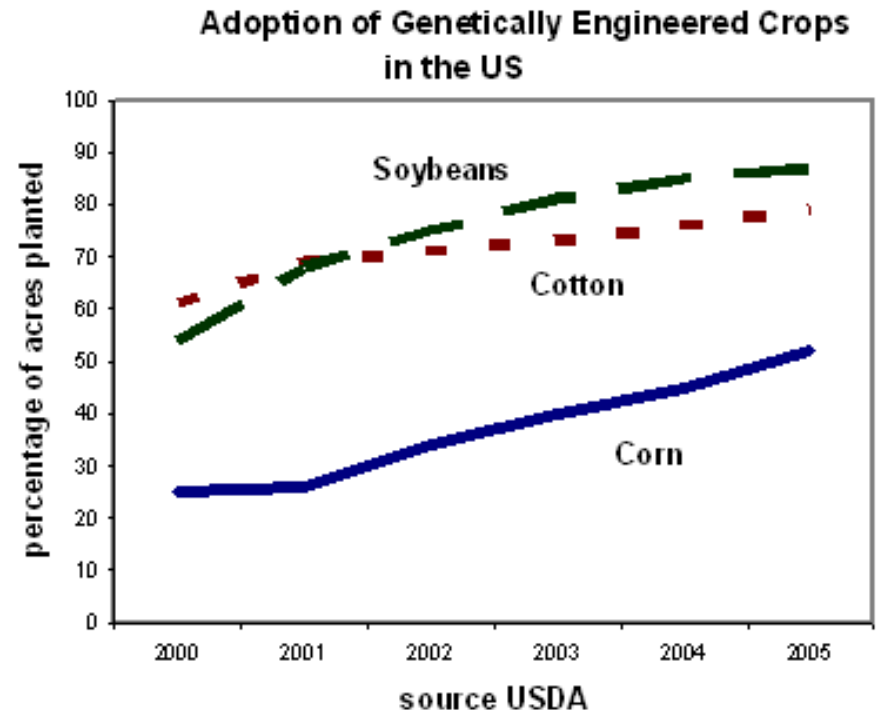
The information contained herein is believed to be accurate but we give no warranty of accuracy or reliability and take no responsibility for accuracy or reliability. No investment decision can be taken on the basis of information contained herein"

ArborGen

- The World's leading forestry bioengineering company
- Joint venture entered into February 2000
- Equal Partners
 - International Paper Company
 - MeadWestvaco Corporation
 - Rubicon Ltd
- Each contributed Intellectual Property and receives value at the time of commercialization through royalties

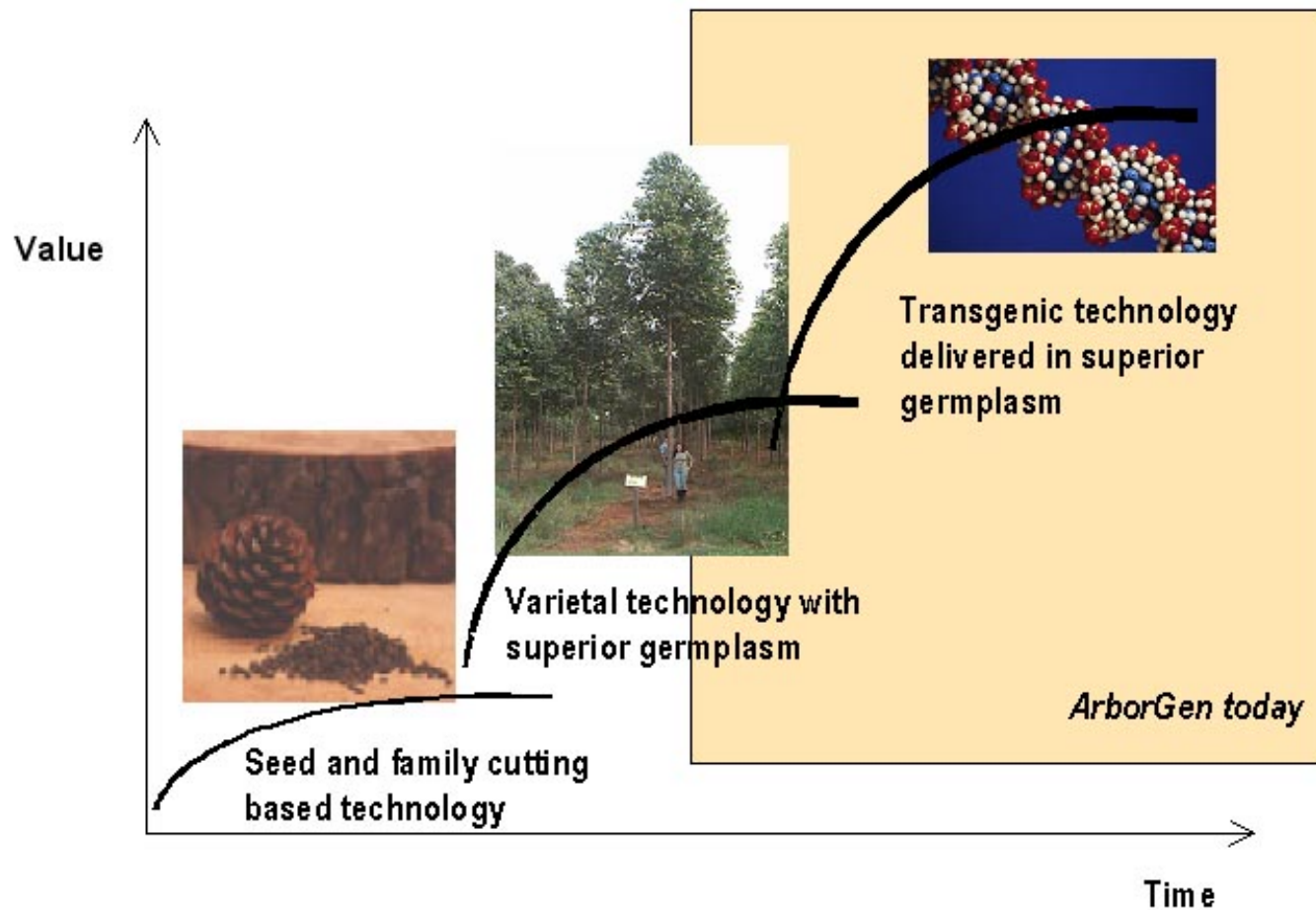
Target is to repeat the success of AgBio in forestry

- Biotechnology is revolutionizing global agriculture
- First genetically engineered crops were planted just 10 years ago.
- This agricultural genetic revolution will also occur in forestry
- Future is a step change that will significantly alter the economics of the forest industry
- Potential to revolutionise plantation forestry, more so than in agriculture, because even the most commercialised tree species are still only several breeding cycles from their wild state.
- ArborGen is well positioned
- There is no other major competitor in forestry unlike agriculture



ArborGen today is focused on transgenic technology in forestry

Forest biotechnology – three paths



ArborGen has a clear business proposition

- Aspiration to be the pre-eminent player in the global development and marketing of bio-engineered trees to the forestry industry
- Vision is to create products that:
 - Bring significant value to the forest industry through an understanding of end user needs
 - Are environmentally and socially responsible – provide clear benefits to the public and sustainable forestry
- Application is through genetics and enhanced trait technology
- Business plan builds a base portfolio of products to ensure financial success while looking at how best to develop a wider portfolio of products through collaborations and technical alliances

ArborGen's recent achievements

- The initial five-year funding commitment of the three ArborGen funding partners ended in February this year.
- Partners view ArborGen as a 'live' business—so rather than being funded under a venture capital model, ArborGen is now be funded on a year-to-year basis on actual performance/milestone achievements against budgets and plan targets.
- Achievements in the research programme have allowed ArborGen's management team to increase the focus on product commercialization.
- At the same time, the science and research priorities have now been shifted to identifying and delivering the second round of products to ensure ArborGen has a well balanced product pipeline, as we see in ag-bio companies such as Monsanto.
- There are three themes to this commercialization focus:
 1. Regulatory and public acceptance;
 2. Customer acquisition; and
 3. Cost-effective large-scale production.

Good progress is being made on each of these.

Product pipeline development

■ Improved Pulping Project for Brazil

- Remains on course to commercialization.
- The improved pulping characteristics are generated by altering the lignin content and composition in Eucalyptus (lignin is the 'glue' that holds a tree together, but which adds considerable energy and environmental cost at the time of extraction in the pulping process).
- Excellent results have been received from field trials, confirming lignin reductions at the initial target level of 20%.
- Additional benefits to the pulp customer will come from a slight increase in cellulose content and an overall increase in pulping efficiency.
- A second-round product is also being developed for this market with the addition of a growth gene. Such a product is targeted to achieve either significantly higher yield per hectare per current rotation age or significantly faster rotations – either outcome would generate huge value to the forest grower.

Product pipeline development cont

■ North America Hardwood Project

- Is focused on the development of a new product for use in the US pulp and paper industry as a hardwood alternative to replace the depleting natural resource.
- Hardwood pulp is essential for manufacturing a range of high-quality papers, where the short fibers that are inherent in the composition of hardwood trees are essential for paper smoothness (this can be compared with softwoods, which have long fibers and much higher strength characteristics).
- Product concepts being considered include the introduction of an improved cold-tolerant eucalyptus that can resist the North American winter conditions.
- Another possibility being explored is the selection of one of the existing North American species and developing a commercially attractive product through the application of biotechnology to achieve growth increase and faster rotation – growth rates of more than double that currently available have been demonstrated in selected hardwood species.

Product pipeline development cont

■ Pine Solid Wood products

- The focus for Pine Solid Wood customers, whether structural or appearance, is to bring value gains through faster rotation and improved wood quality.
- Research efforts in this area have shown impressive results for Loblolly.
- The proportion of low strength juvenile wood can be reduced, and rotation lengths shortened, giving improved stiffness and higher yields per hectare over time.
- Impressive results from more than one growth gene have been received to date from field trials. Compared with the control group, one gene in particular has delivered more than a 2.5 fold increase in volume gains for loblolly pine in one season – importantly with no difference in wood chemistry.

Product pipeline development cont

■ **ArborGen's genomics discovery programme**

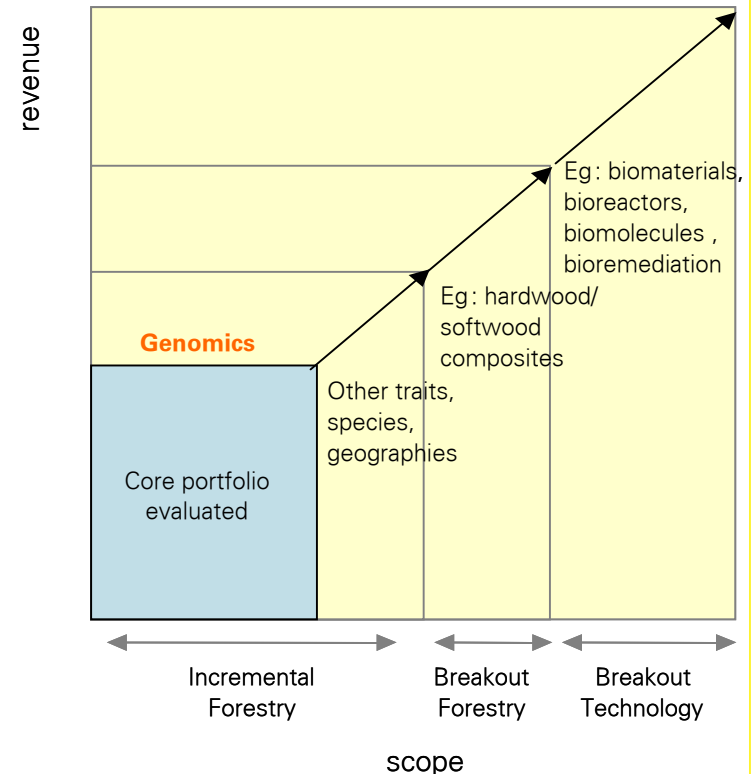
- Continues to research prospects for achieving 'step-change' improvements in desirable traits.
- ArborGen has developed a high throughput programme with a large number of genes now in test.
- Central to this is the EST (Expressed Sequence Tags) databases ArborGen has access to, with over 600,000 ESTs in pine and eucalyptus and 3,000 full-length genes in the programme.
- ArborGen has filed 39 patent applications, with 33 of these being in gene technology – an indicator of the progress in this area.

Product pipeline development cont

■ New product opportunities

- With oil prices at record levels and a focus on energy self-sufficiency, ArborGen is also looking at opportunities in biomass for co-firing in energy production and in biofuels.
- ArborGen's existing pulp projects have direct applications in this area.
- At issue is the degree such improvements can enable forestry to compete with agricultural crops and petroleum based products.
- Such a product would be a step-out, but is a good example of how ArborGen's intellectual property can be leveraged into value creation opportunities in other sectors.

Incremental Revenue Opportunities



Commercialization focus - regulatory and public acceptance, customer acquisition

- **Regulatory and public acceptance:**

- ArborGen has been active with both the Brazilian and US authorities to ensure that any issues associated with the launching of biotechnology products in plantation forest trees are understood and that the regulatory regime implemented is science-based and workable in practice.

- **Customer acquisition:**

- ArborGen has appointed managers in both Brazil and the US to work closely with target customers to ensure customers are familiar with the value-added products that ArborGen has to offer, while at the same time enabling ArborGen to develop an in-depth market understanding.
- Given that Brazil will be ArborGen's 'first-product to-market' country, a Brazil office and operational presence has been established – this has been very positively received.
- Relationships in place with key Brazilian customers and field trials have already been established – an important hurdle in both the regulatory and customer acceptance processes.

Commercialization focus - cost-effective large-scale production

- **ArborGen Clonal Testing Service.**

- Allows multiple companies to bring their elite clonal material to ArborGen for 'side-by-side' testing across multiple locations.
- Participants now able to obtain access to the best possible genetics
- Added benefit for ArborGen – it will ensure that its products will be manufactured using the best base-genetics available.
- A number of other forestry companies will shortly join the Testing Service.
- ArborGen provides the underlying manufacturing capability to produce many millions of seedlings through its somatic embryogenic (SE) technology.

- **License to Weyerhaeuser's Manufactured Seed technology.**

- If proven, the technology will enable ArborGen's products to move directly from an embryo to an 'artificial' seed.
- Will significantly reduce the costs of storage and handling, and improve the ease of planting for the forest grower.

- **ArborGen's SE Business**

- Is rapidly expanding with loblolly pine customers in the US, as well as in Brazil, Argentina and Chile.

ArborGen's value - Rubicon AGM shareholder meeting improved pulping hypothetical example

- Consider just the Improved Pulping Eucalyptus product for Brazil-assumptions:
 1. Brazilian eucalyptus treestock market of around 350 million annual plantings
 2. This new improved-pulping treestock captures 1/3 of this market
 3. Value of the improved pulping treestock to pulp producer equates to approximately US\$15 of additional margin per tonne of pulp produced, which equates to US\$1 of additional value per treestock sold.
 4. Assume that this additional value is split 50:50 between the treestock provider and pulp manufacturer.
- Value of one year's worth of sales, of this one trait, in this one market, can be simply calculated as US\$ 38 million post tax.
- Repeating this level of sales year after year, without any assumed growth in market share, or penetration into other markets, translates into a value for this one product of some US\$475 million post tax (capitalized at the forest industry's discount rate of 8% after-tax).