## **PLANTATION MANAGEMENT COOPERATIVE REPORTS**

| Report<br>No. | Title   | Author/s   | Date             | Confidential<br>or Release<br>date/price |
|---------------|---|--|------------------|--|
| 1             | A model to predict branch index in radiata pine direct sawlog regimes   | M. Kimberley<br>R.L. Knowles   | November<br>1993 | Confidential                             |
| 2             | Radiata pine followers trial — establishment report   | M. Dean  | November<br>1993 | -  |
| 3             | Review of silvicultural trials  | G.G. West  | May<br>1994      | -  |
| 4             | Validation of the model to predict branch index in direct sawlog regimes  | M. Middlemiss<br>R.L. Knowles  | November<br>1994 | Confidential                             |
| 5             | The effect of physiological age of cuttings on unpruned log quality — establishment report                                  | G. Holden<br>B. Klomp<br>J. Tombleson  | November<br>1994 | -<br>-                                   |
| 6             | Effects of pruning on improved radiata pine breeds — trial establishment report   | I. McInnes   | February<br>1998 | -  |
| 7             | Validation of the diameter over stubs function for genetically improved radiata pine  | G.G. West  | November<br>1994 | Confidential                             |
| 8             | Prediction of diameter and height starting values for the EARLY growth model  | G. G. West   | November<br>1994 | -  |
| 9             | Review of past wood quality research on agroforestry sites  | O. Cox<br>D. L. McConchie<br>R.B. McKinley   | April<br>1995    | -  |
| 10            | Special purpose radiata pine breeds trials — Establishment report   | G.T. Stovold   | April<br>1995    | -  |
| 11            | Dothistroma genetic gain trial —<br>Establishment report  | G.T. Stovold   | April<br>1995    | -  |
| 12            | Clonal trial for special purpose radiata pine breeds — Establishment report   | G.T. Stovold   | April<br>1995    | -  |
| 13            | Development of a 'stand-alone' joint venture planning system  | P. Middlemiss  | April<br>1995    | -  |
| 14            | Genetic gain trial to measure reduction of<br>Dothistroma infection with Dothistroma-<br>resistant breed — Results to age 3 | J.R. Lee<br>S.D. Carson<br>L. Gea  | April<br>1995    | -  |
| 15            | A strategy for efficient selection and evaluation of "designer breeds"  | S.D. Carson<br>M.J. Carson<br>G.G. West<br>J.C. Grace<br>T.G. Vincent<br>P.A. Jefferson<br>B.R. Manley | November<br>1995 | -  |
| 16            | Predicting the growth of young stands of radiata pine from site factors — An investigation in the Bay of Plenty region      | A. Wells   | November<br>1995 | -  |
| 17            | Genetic gain modifiers for log quality characteristics for use in STANDPAK — a preliminary analysis                         | J.A. Turner<br>B.R. Manley<br>G.G. West<br>SD. Carson<br>J.C. Grace<br>P.A. Jefferson<br>M.J. Carson   | November<br>1995 | -  |

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|---------------|--|--|------------------|------------------------------------|
| 18            | Comparison of techniques to measure tree internode lengths   | J.A. Turner  | November<br>1995 |                                    |
| 19            | Demonstration/Research Nelders of improved radiata pine breeds — Results of first assessment (unavailable – report not completed)            | J.D. Tombleson<br>J.A. Turner<br>P. van Wijk           | November<br>1995 |                                    |
| 20            | Pruning of improved radiata pine breeds,<br>Tumunui — A pilot study  | W.M. Blundell  | November<br>1995 | -                                  |
| 21            | Guadalupe hybrids timberbelt demonstration/research trial — Age 3 & 4 year assessment results  | J.D. Tombleson<br>J.T.D. Penman                        | November<br>1995 | -<br>-                             |
| 22            | Second log pruning trials — Installation report  | M. Dean  | November<br>1995 | -<br>-                             |
| 23            | Validation of the radiata pine shelterbelt growth model  | M. Dean<br>R.L. Knowles<br>M.O. Kimberley              | November<br>1995 | -<br>-                             |
| 24            | See report 30  |  |                  |                                    |
| 25            | Methodology of measuring shelterbelt optical porosity — a pilot study  | M.A. Carter  | November<br>1995 | -<br>-                             |
| 26            | Akatore agroforestry trial, results from 1974-1995   | G.G. Cossens<br>G.S. Crossan                           | November<br>1995 | -<br>-                             |
| 27            | Invermay agroforestry trial, results from 1974-1995  | G.G. Cossens<br>G.S. Crossan                           | November<br>1995 | Confidential                       |
| 28            | A comparison of older physiologically aged cuttings of radiata pine with juvenile cuttings and seedlings in shelterbelts                     | M. Dean  | November<br>1995 | -<br>-                             |
| 29            | Soil fauna populations in agroforestry trials (unavailable - report not completed)   | B. Willoughby  | May<br>1996      |                                    |
| 30            | Review of tree root studies  | M. Gautam  | May<br>1996      | -                                  |
| 31            | Breast height basic density of physiologically-aged cuttings vs seedlings, grown on a fertile farm site                                      | M. McConchie<br>K.F. Gilchrist                         | May<br>1996      | -                                  |
| 32            | Single clonal blocks vs clonal mixtures – Kawerau & Tumbarumba trial assessment results ( <i>unavailable</i> – <i>report not completed</i> ) | J. Tombleson<br>A. Straker<br>C. Borough<br>D. Darling | May<br>1996      |                                    |
| 33            | Causes and potential approaches to overcome inferior form and branching habit in radiata pine grown on farm sites — a literature review      | J.A. Turner  | Nov<br>1996      | -                                  |
| 34            | Single clonal blocks versus two and sixteen clone mixtures trial, Tarawera Forest — establishment report                                     | J.A. Turner<br>J. Tombleson<br>C. Te Riini             | Nov<br>1996      | -<br>-                             |

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|---------------|---|---|---------------|--|
| 35            | A strategic plan for new and existing silvicultural trials  | G.G. West D. Elliott M. Kater M. McLarin P. Smale W. Sutton P. Taylor | Nov<br>1996   | -<br>-<br>-                              |
| 36            | Evaluation of <i>Eucalyptus Globoidea</i> grown on Matakana Island  | A. Somerville<br>S. Gatenby   | Nov<br>1996   | -  |
| 37            | Study to identify sources of error in measuring sinuosity of the pruned butt-log using a height pole.                                 | J.A. Turner   | May<br>1997   | -<br>-                                   |
| 38            | A preliminary analysis of potential for development of genetic gain modifiers for stem straightness.                                  | J.A. Turner   | May<br>1997   | -<br>-                                   |
| 39            | Genetic and site differences in <i>Pinus radiata</i> internode length in New Zealand  | J.A. Turner<br>S.D. Carson<br>B.R. Manley<br>J.C. Grace<br>G.G. West  | May<br>1997   | Confidential                             |
| 40            | A comparison of the energy and force requirements of pruning loppers  | P. Crossland  | April<br>1997 | -<br>-                                   |
| 41            | Followers trials on forest sites  —establishment report   | M. Dean   | May<br>1997   | -  |
| 42            | Prediction of individual log internode index from estimated stand mean internode length   | J.A. Turner   | May<br>1998   | Confidential                             |
| 43            | Crown lightening trials: Installation report  | J.A. Turner<br>J.D. Tombleson<br>J.P. Maclaren                        | May<br>1998   | -<br>-                                   |
| 44            | Toppling trial establishment report:<br>Evaluation of severe lateral nursery root<br>trimming and contrasting genetic<br>improvement. | J.A. Turner<br>J.D. Tombleson<br>W. Brown                             | May<br>1998   | -  |
| 45            | Prediction of final stem sinuosity in pruned logs from juvenile stem sinuosity measurements.  | J.A. Turner<br>J.D. Tombleson   | May<br>1998   | Confidential                             |
| 46            | Towards a general stem volume and taper equation  | M Budianto<br>A.D. Gordon   | May<br>1998   | Confidential                             |
| 47            | The effects of a Wairarapa shelterbelt on agricultural parameters   | M.F. Hawke<br>A.G. Gillingham<br>D. Bell                              | May<br>1998   | -  |
| 48            | Effects of Boron deficiency on the root anchorage and incidence of resin pockets in <i>Pinus radiata</i>                              | J.R. Moore  | May<br>1998   | -<br>-                                   |
| 49            | Comparison of taper, volume and bark thickness of 26-year-old seedlings and cuttings from Mamaku Forest                               | M. Budianto<br>J.D. Tombleson<br>A.D. Gordon                          | May<br>1998   | -  |
| 50            | The effect of final crop stocking on growth across a range of sites.  | G.G West<br>J.P. Maclaren<br>M.O. Kimberley<br>A. Straker             | May<br>1998   | Confidential                             |

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|---------------|--|--|------------------|------------------------------------|
| 51            | Predicting green crown length in Radiata pine  | J.A. Turner  | May<br>1998      | uate/price                         |
| 52            | Waihi Toppling Trial - Assessment of roots following severe toppling   | J.D. Tombleson<br>J.A. Turner                                | November<br>1998 | -                                  |
| 53            | Assessment of roots – Ngaruawahia, Waihi & Fielding toppling trials  | J.D. Tombleson<br>J.A. Turner                                | November<br>1998 | -                                  |
| 54            | An evaluation of poplar on New Zealand hill country.   | H. McElwee<br>R.L. Knowles                                   | November<br>1998 | -<br>-                             |
| 55            | An assessment of stand and tree quality at low pruning comparing aged cuttings with seedlings                  | D.G. Holden<br>B.K. Klomp<br>C.L. Sundgren                   | November<br>1998 | -                                  |
| 56            | Target timber products from fertile farm sites: A case study using the Target Tree system                      | G.G. West  | November<br>1998 | -                                  |
| 57            | Followers experiments on farm sites (unavailable – report not completed)                                       | M. Dean  | November<br>1998 |                                    |
| 58            | Effects of erosion scars on stand growth and quality (unavailable – report not completed)                      | M Dean   | November<br>1998 |                                    |
| 59            | A national growth model for radiata pine shelterbelts (very large document - available on request)             | M MacKenzie<br>L Knowles<br>M. Dean                          | November<br>1998 | Confidential                       |
| 60            | Evaluation of the growth and root morphology of container grown cuttings produced by FORENZA                   | J.D. Tombleson<br>J.A. Turner                                | May<br>1999      | -                                  |
| 61            | Validation and improvement of models to predict "Diameter-over-stubs"  | R.L. Knowles<br>H. McElwee                                   | March<br>1999    | -                                  |
| 62            | Validation of a model to predict canopy closure for Radiata Pine   | H. McElwee   | March<br>1999    | -                                  |
| 63            | See report 54 above.   |  |                  |                                    |
| 64            | Lateral root growth of <i>Pinus radiata</i> adjacent to developed pastures                                     | M.F. Hawke<br>A.G. Gillingham<br>J.P. Maclaren               | June<br>1999     | -                                  |
| 65            | Study into the influence of genetic improvement on second log branching of radiata pine                        | M.S. Watt<br>J.A. Turner                                     | November<br>1999 | -                                  |
| 66            | A 3-point stem volume and taper equation for radiata pine  | A. Gordon<br>M. Budianto                                     | November<br>1999 | Confidential                       |
| 67            | The effects of shelterbelts on pasture and soil parameters at Poukawa Research Station, Hawkes Bay             | M.F. Hawke<br>M. Gray<br>A.G. Gillingham<br>M. Slay          | November<br>1999 | -                                  |
| 68            | A strength and stiffness comparison between timber from Tikitere, Kaingaroa, and a New Zealand wide study      | D. Gaunt<br>B. Penellum<br>K. McNab<br>J. Roper<br>J. Turner | June<br>2000     | -                                  |
| 69            | An investigation into the effects of boron fertiliser on wood properties and clearwood defects in radiata pine | R. McKinley<br>D. McConchie<br>M. McConchie                  | May<br>2000      | -                                  |

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|---------------|--|--|-------------------------|--|
| 70            | Wood density of radiata pine: Effect of nitrogen supply  | P. Beets<br>K. Gilchrist<br>M.P. Jeffreys    | May<br>2000             | -  |
| 71            | Significance of boron on butt-log straightness of radiata pine   | J.D. Tombleson<br>M. Budianto<br>J.A. Turner | May<br>2000             | -<br>-                                   |
| 72            | New generation toppling trials for winching - establishment report update  | J. Tombleson                                 | November<br>2000        | -  |
| 73            | Root system variation in <i>Pinus radiata</i> clones: Experimental study under semi-dry temperate silvopastoral ecosystem in New Zealand | M. Gautam                                    | August<br>2000          | -<br>-                                   |
| 74            | Wood properties of 26-year-old <i>Pinus</i> radiata from the Tikitere stocking trial   | R. McKinley<br>D. McConchie<br>M. Budianto   | November<br>2000        | -<br>-                                   |
| 75            | The effect of cyclaneusma infection on tree growth   | M. Dean<br>L. Bulman<br>M. Kimberley         | November<br>2000        | <del>-</del>                             |
| 76            | Assessment of tree quality of aged cuttings and seedlings at age 5 years   | D.G. Holden                                  | May<br>2001             | -  |
| 77            | GF Plus demonstration/research trials – establishment report. (Whole report not available electronically)).                              | S. van Ballekom<br>J. Tombleson              | May<br>2001 / Nov<br>07 |  |
| 78            | Comparison of GF and long internode breeds along with high wood density clones planted as shelterbelts – establishment report            | J.D. Tombleson<br>D.J. Bell                  | May<br>2001             | -<br>-                                   |
| 79            | Analysis of wood density and spiral grain at seven contrasting sites   | S. Kumar<br>R. Ball<br>D. Cown               | Nov<br>2001             | Confidential                             |
| 80            | Wood quality of radiata pine on farm sites – a review of the issues  | P. Maclaren                                  | May<br>2002             | -  |
| 81            | Analysis of internal checking data from the Goudies and Matea pruning / thinning / fertiliser trials (RO 1083/1 and 2)                   | M. Kimberley<br>M. McConchie D.<br>McConchie | May<br>2002             | November 04<br>-                         |
| 82            | No report allocated to this number   |  |                         |  |
| 83            | The effect of pruned height, pruning intensity, and timing on tree growth and quality - An interim analysis (yet to be completed).       | M. Dean<br>M. Kimberley                      | May<br>2002             | Confidential                             |
| 84            | USA Forestry Study Tour Background Notes<br>Part I – Pacific North West (hard copy<br>available on request)                              | J.D. Tombleson                               | September<br>2002       | November 04<br>-                         |
| 85            | USA Forestry Study Tour Background Notes<br>Part I – South East (hard copy available on<br>request)                                      | J.D. Tombleson                               | October<br>2002         | November 04<br>-                         |

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|---------------|---|---|------------------|--|
| 86            | Analysis of crop tree growth response to followers and timing of thinning (yet to be completed)   | M. Dean                                       | November<br>2003 | May 05                                   |
| 87            | Silviculture x traits trials – establishment report   | M. Dean                                       | May<br>2005      | Confidential                             |
| 88            | Profitability of converting pastoral farmland to forestry in the Taupo basin. Part I: Marginal analysis at the one-hectare level. Part II: Farm-level sustainability. | L.W. Hansen<br>R.L. Knowles<br>A. Laroze      | May<br>2004      | May 05<br>-                              |
| 89            | Growth and profitability of radiata pine farm forestry in Hawke's Bay and Wairarapa   | L.W. Hansen<br>R.L. Knowles<br>M. Halliday    | May<br>2004      | May 05<br>-                              |
| 90            | Realistic alternatives to radiata pine in New Zealand – a critical review   | J.P. Maclaren                                 | May<br>2004      | Nov 05<br>-                              |
| 91            | Functionality contained in the NZ Farm Forestry Association radiata pine calculator Version 2   | L.W. Hansen<br>R.L. Knowles<br>M. Kimberley   | August<br>2004   | Confidential                             |
| 92            | Validation of the 300 index growth model for radiata pine on three contrasting site types   | M. Kimberley<br>R.L. Knowles<br>M. Dean       | March<br>2005    | Confidential                             |
| 93            | Culling resin bleeders at the time of selection for pruning   | J. Cox<br>J.D. Tombleson<br>M.O. Kimberley    | October<br>2005  | Confidential                             |
| 94            | Conversion factors for Type I and II resin pockets  | M.O. Kimberley<br>J. Tombleson<br>G. Holden   | November<br>2005 | Confidential                             |
| 95            | Culling resin bleeders at the time of selection for pruning – do resin bleeders identify themselves at a young age?   | J.D. Tombleson<br>G. Holden<br>M.O. Kimberley | November<br>2005 | Confidential                             |
| 96            | Analysis of branch data from final crop stocking trials   | H.D. Marshall                                 | May<br>2006      | Confidential                             |
| 97            | Coast redwood silviculture trials   | M. Dean                                       | May<br>2006      | Confidential                             |
| 98            | A validation of the 300 index growth model  | M. Kimberley<br>M. Dean                       | June<br>2006     | Confidential                             |
| 99            | Extension of the 300 index growth model for non-performing site types – Stage 1   | M. Kimberley                                  | June<br>2006     | Confidential                             |
| 100           | Analysis of tree growth of clones grown in pure blocks and mixtures   | M.O. Kimberley<br>M. Dean                     | June<br>2006     | Confidential                             |
| 101           | Incorporating thinning responses into a branch diameter model   | M.O. Kimberley<br>H. Marshall                 | June<br>2006     | Confidential                             |
| 102           | A review of the Plantation Management<br>Research Cooperative trials and PSP's  | C. Goulding                                   | June<br>2006     | Confidential                             |
| 103           | Final assessment of 21 to 22 year-old cuttings trials   | M.I. Menzies<br>C.B. Low                      | May<br>2007      | Confidential                             |
| 104           | Rationalisation of volume and taper functions   | P. Silcock                                    | May<br>2007      | Confidential                             |

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|---------------|---|--|------------------|--|
| 105           | A new mortality function for New Zealand radiata pine   | M.O. Kimberley   | May<br>2007      | Confidential                             |
| 106           | Analysis of mono-clonal blocks vs mixtures trial – Tarawera forest                                  | H. Marshall  | May<br>2007      | Confidential                             |
| 107           | Extension of the 300 index growth model – Stage 2   | M.O. Kimberley   | June<br>2007     | Confidential                             |
| 108           | Forecaster Fork and Sweep Model   | H. Marshall  | June<br>2007     | Confidential                             |
| 109           | Wind Effects on Juvenile Trees, with Special<br>Reference to Radiata Pine Growing in<br>New Zealand | J. R. Moore<br>J.D. Tombleson<br>J.A. Turner<br>M. van der Colff | November<br>2007 | Confidential                             |
| 110           | Projection of tree lists using the 300 index model  | M.O. Kimberley<br>M. van der Colff<br>C.J. Goulding              | November<br>2007 | Confidential                             |
| 111           | Effect of genotype on acoustic velocity   | P. Silcock   | November<br>2007 | Confidential                             |