

**KEY POINTS FROM TECHNICAL
SESSIONS OF THE NZ FOREST SITE
MANAGEMENT COOPERATIVE HELD AT
LINCOLN UNIVERSITY ON 24 NOVEMBER 1993**

by

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REPORT No. 66

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**NZ FOREST SITE
MANAGEMENT COOPERATIVE
TECHNICAL PRESENTATION NOTES
24 NOVEMBER 1993**

- 1. P.A.R.R. TRIAL AT RIVERHEAD FOREST - MALCOLM SKINNER**
- 2. MAMAKU MULTINUTRIENT/WEED CONTROL TRIAL - MALCOLM SKINNER**

The following notes are copies of the slides presented during the technical sessions. These are only interim results. Full reports will be written up and forwarded to Cooperative members at a later date.

P.A.R.R. TRIAL AT RIVERHEAD FOREST

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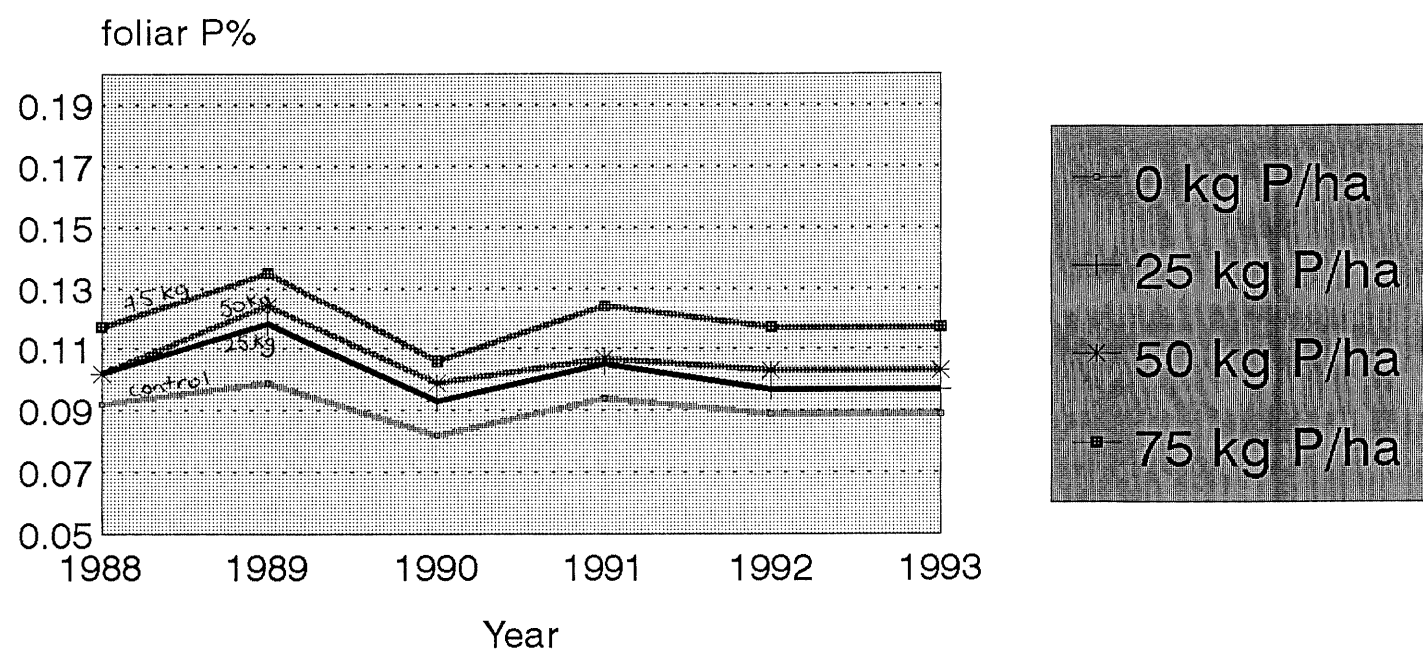
PARR (partially acidulated reactive rock) trial at Riverhead Forest. CHH Forests Ltd. AK1055

- To determine optimum rate of acidulation of phosphate rock, and
- The optimum rate of application on a 2nd rotation clay
- The Site
 - Riverhead clay, medium P retention
 - 2nd rotation: planted 1983
 - trial established 1987
 - plots 25*25 m, with 15*15 m measurement area
 - 500 sph

PARR (partially acidulated reactive rock) trial at Riverhead Forest. CHH Forests Ltd. AK1055

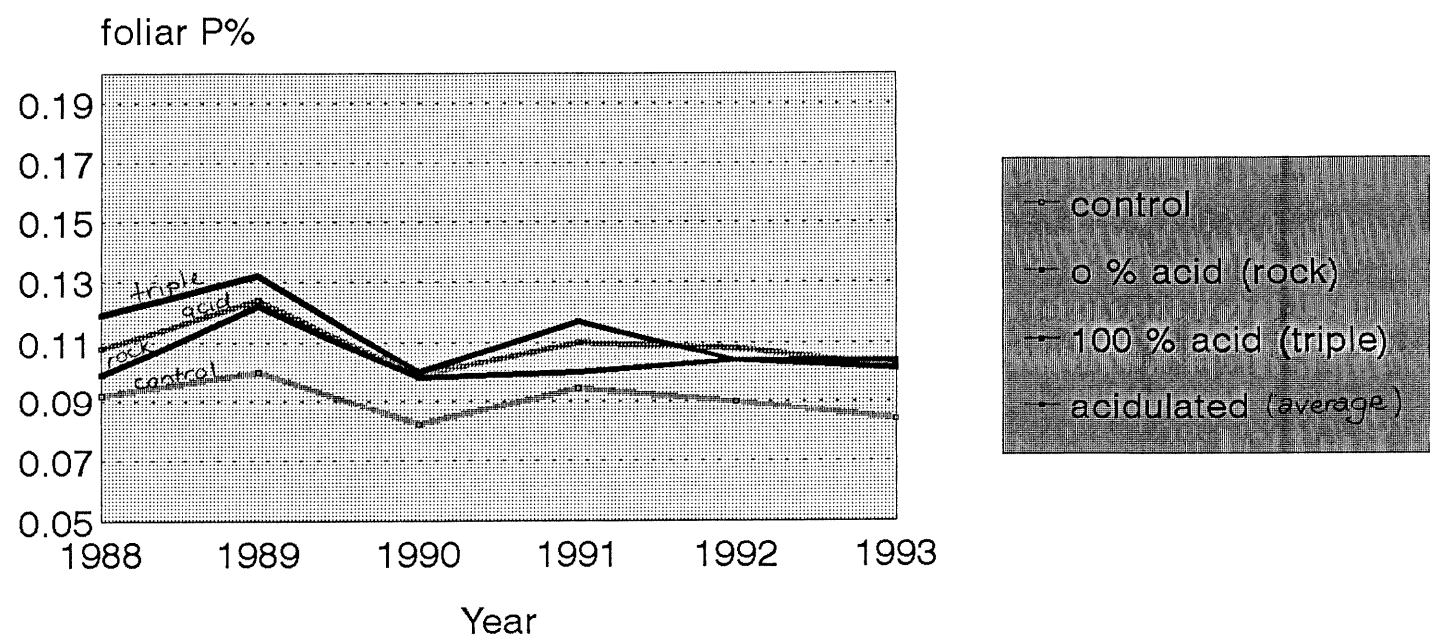
- HYPHOS from East Coast Bays Fertiliser Company
 - * North Carolina rock
 - * reacted with phosphoric acid
- RATES
 - * Control, 25 kg P/ha, 50, 75
- ACIDULATION
 - * 0% (NC rock), 20%, 25%, 30%, 100% (Triple super)
- NITROGEN
 - * annual additions as urea

Effect of rate of P applied on foliar P concentrations 1988-1993



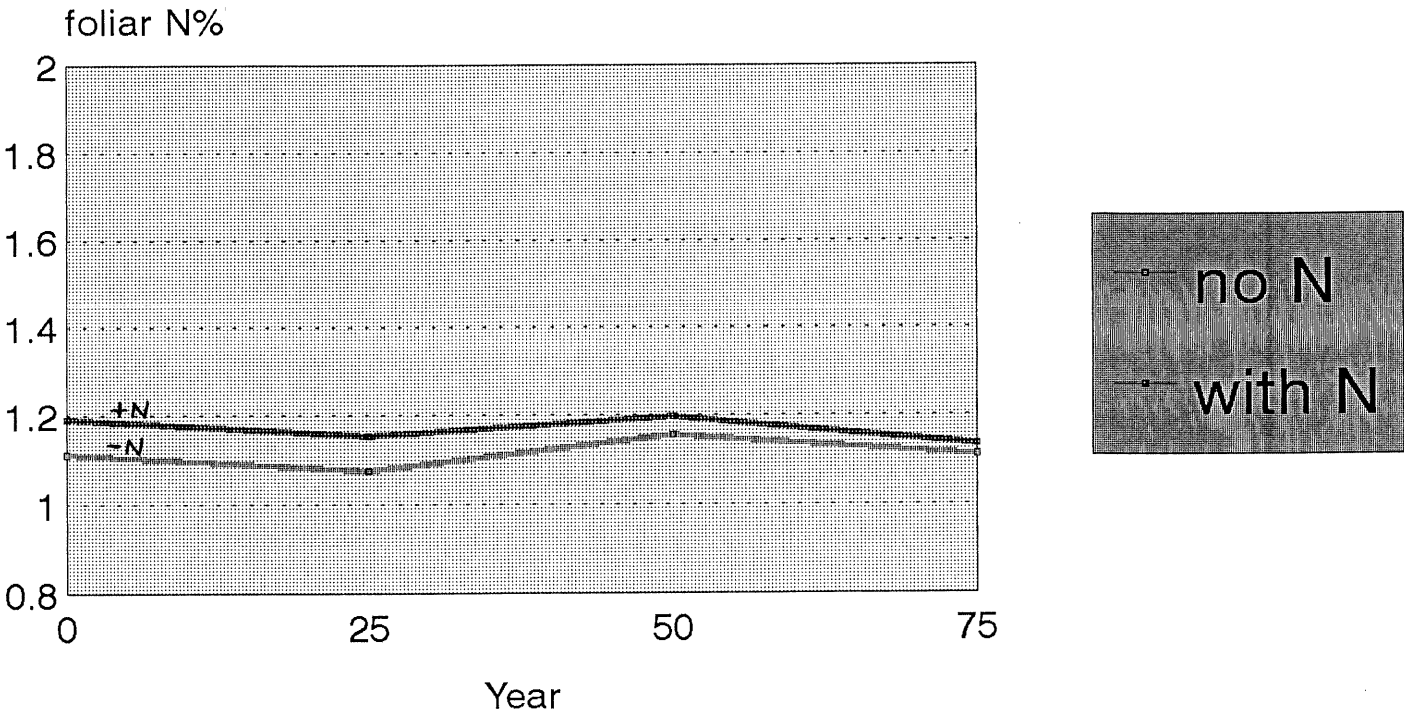
AK1055

Effect of acidulation rate on foliar P concentrations 1988-1993

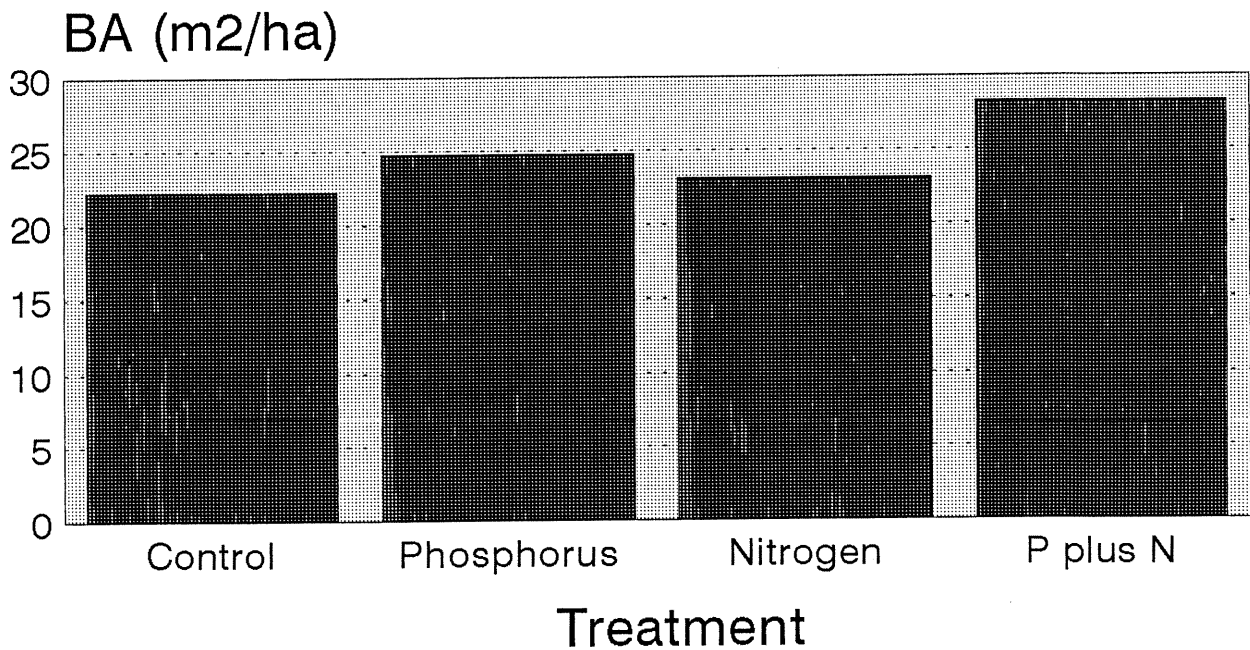


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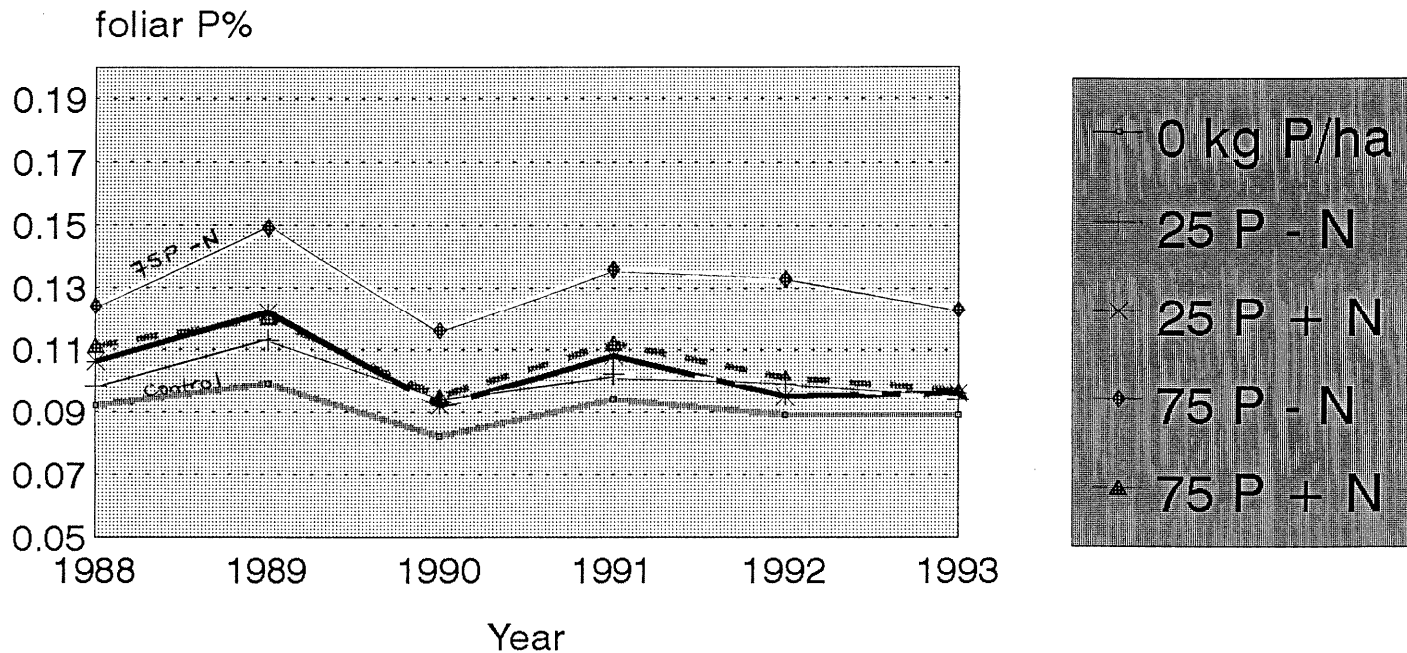
Effect of P rate and Nitrogen on foliar concentrations 1988-1993



The effect of N and P on the Basal Areas by 1992



Effect of P rate and Nitrogen on foliar concentrations 1988-1993



AK1055

PARR (partially acidulated reactive rock) trial at Riverhead Forest. CHH Forests Ltd. AK1055

- Critical level for P fertilising
- Rates on 2nd rotation sites
- The issue of "types" of P
 - * soils of low/high P retention
 - * soils of intermediate P retention

MAMAKU MULTINUTRIENT/WEED CONTROL TRIAL

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Multinutrient/weed control trial (FR90) Mamaku Plateau/Tasman Forestry Ltd

- BACKGROUND: late 70's and early 80's site preparation by burning and scalping
- SITUATION: radiata pine at age 7 obviously deficient in P
- OBJECTIVE: to determine response to P, and at what rate P should be applied

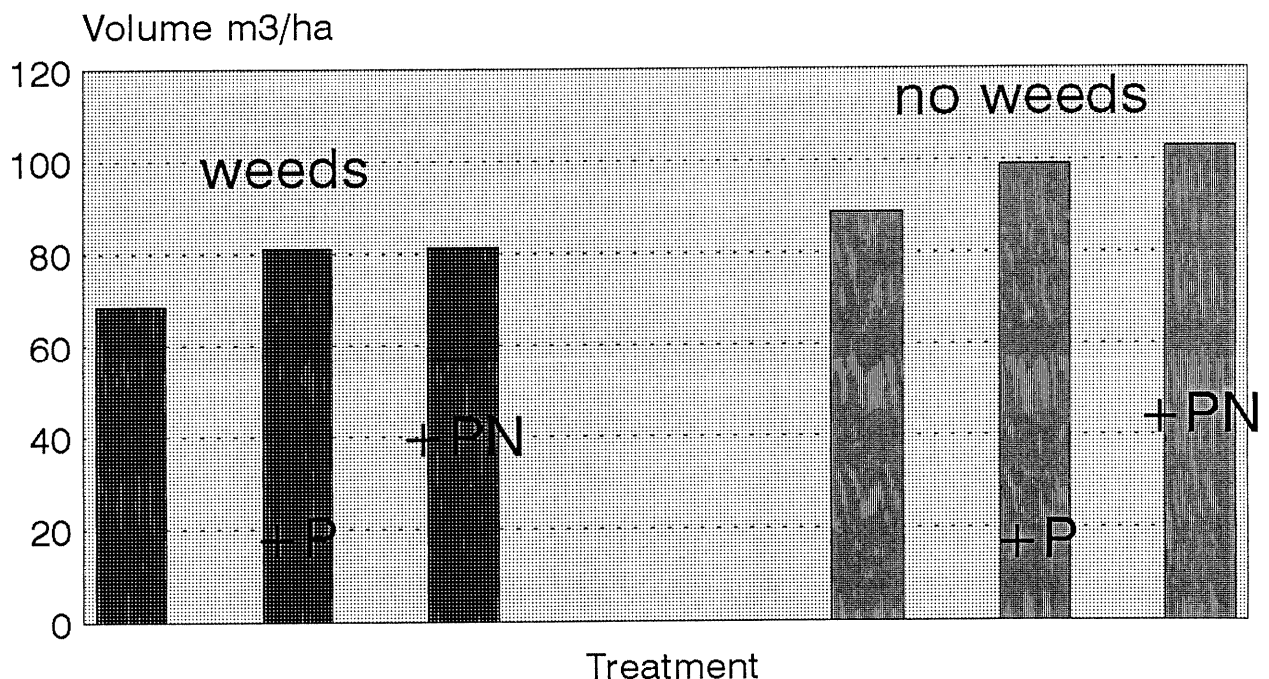
Multinutrient/weed control trial (FR90) Mamaku Plateau/Tasman Forestry Ltd

- Site characteristics
 - * Mangowera sand
 - 0.007% P 0-8 cm
 - 0.003% P 9-11 cm
 - * ex Podocarp forest
 - * rainfall @ 2300mm/yr
- Nutrition of existing pine plantation
 - * N 1.3%
 - * P 0.09%
 - * K 0.73%
 - * Ca 0.13%
 - * Mg 0.09%
 - * B @ 9 ppm

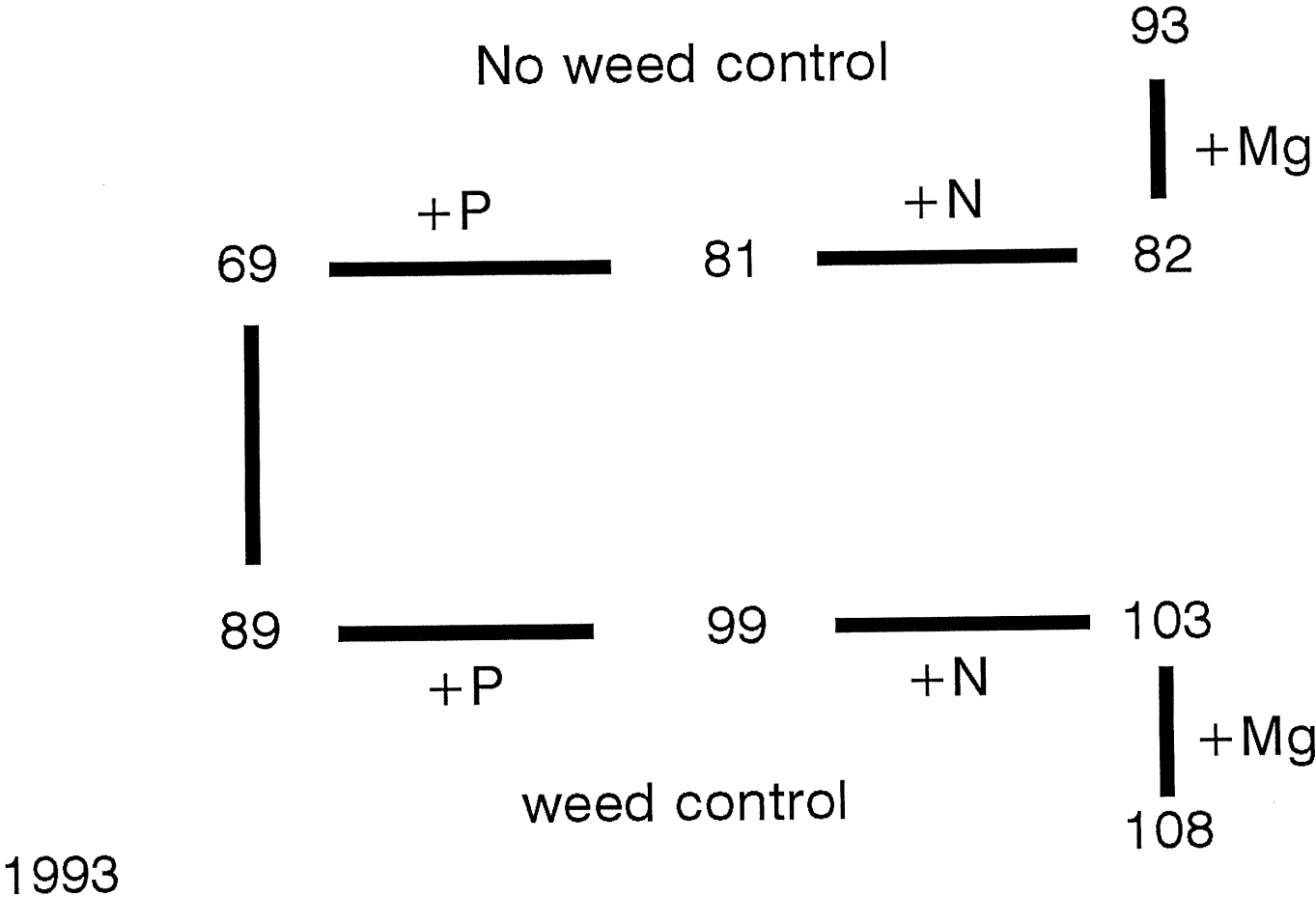
Multinutrient/weed control trial (FR90) Mamaku Plateau/Tasman Forestry Ltd

- EXPERIMENTAL DESIGN
 - * since P was deficient,
 - * N and B marginal, and
 - * Mg just adequate,
 - the following design was adopted
- a FACTORIAL experiment
 - * N (0 & 200 kg N/ha)
 - * P (0 & 100 kg P/ha)
 - * B (0 & 8 kg B/ha)
 - * Weed control (yes & no)
- WITH
 - * "step-outs" for
 - Mg at 100 kg Mg/ha
 - P at 50 kg/ha

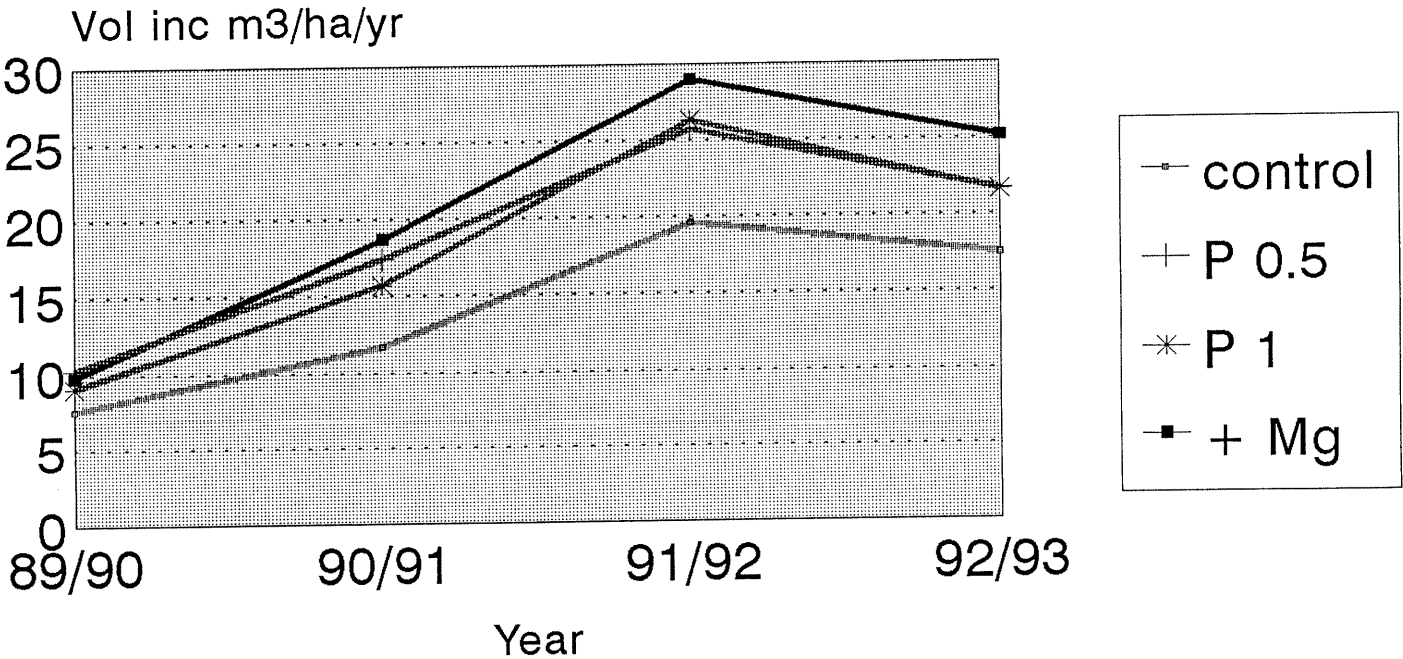
Multinutrient trial (FR90) TFL Treatment effects on Vol after 4 yr



Effects of trt on vol after 4 years

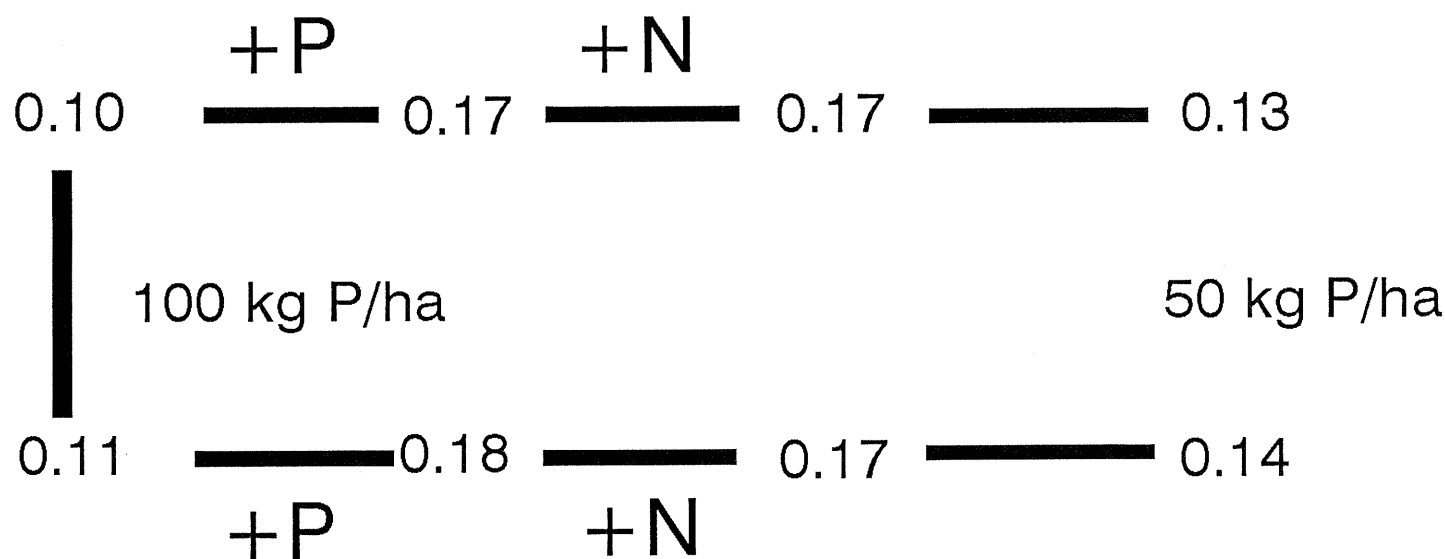


Mamaku multinutrient Trial Volume increments 1989-93



Effect of trt on foliar P%

No weed control

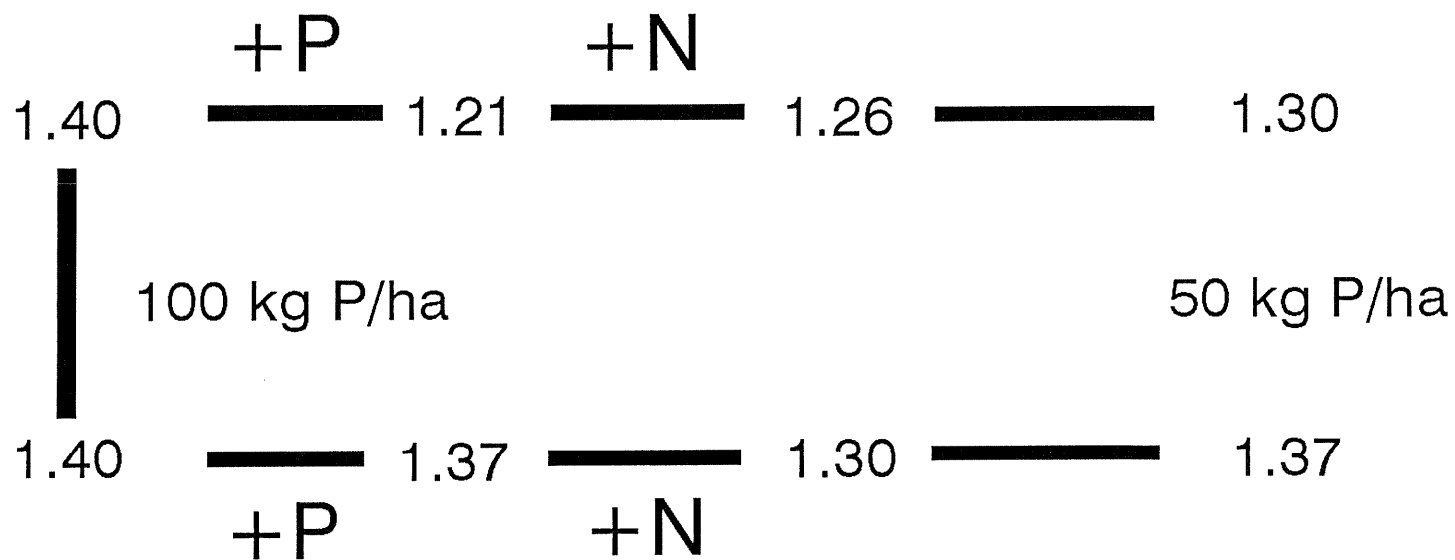


Weed control

1993

Effect of trt on foliar N%

No weed control



Weed control

1993