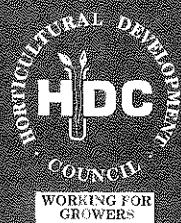


**Ornamental trees**

Project HNS 40

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# Pruning ornamental trees in the nursery

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The shape of ornamental trees is largely determined in the nursery. In particular, trees requiring heads to be developed above a height of about 1.8 m need their lower laterals removed during the maiden and second nursery year.

In this work, the timing and frequency of lateral removal were investigated in four contrasting species, in terms of the effect of pruning on tree height and stem taper.

## Subjects

- Prunus* 'Pink Perfection'
- Tilia x euchlora*
- Betula pendula* 'Dalecarlica'
- Robinia pseudoacacia* 'Frisia'

## Treatments

1. Laterals completely removed at regular 10 day intervals from mid-June in the maiden year (11 occasions), and in the second year (5 occasions), to a height of 1.8 m.
2. Laterals allowed to grow to 30 cm in length before removing regularly as in 1) above.
3. Laterals removed once, in mid-August (to simulate budwood collection).
4. Laterals retained during the growing season and removed the following winter.

## Conclusions

The 'conversion' of lateral growth to increased tree height by regularly removing laterals is very inefficient, especially for *Robinia* and *Betula*.

Conversion rates (lateral growth removed for height gained in the maiden year) were:-

*Robinia* 43:1, *Betula* 41:1; *Prunus* 26:1, *Tilia* 11:1

Regular lateral removal throughout the summer was of most benefit to relatively weak-growing species with few laterals (e.g. *Tilia x euchlora*). Retaining all laterals and then removing them in the following winter was best for vigorous trees with many laterals (e.g. *Betula pendula* 'Dalecarlica').

## Detailed results

- *Tilia x euchlora* (average of 9.8 laterals produced in the maiden year)

Regular lateral removal (treatment 1) increased maiden height considerably from 96 to 141 cm (47%),

and decreased stem taper by only 3%, compared to retaining all laterals (treatment 4).

By the end of the second season regular lateral removal gave the tallest trees with the thickest stems.

- *Prunus* 'Pink Perfection' (average of 8.2 laterals produced in the maiden year)  
Regular lateral removal increased maiden height modestly from 118 to 137 cm, but decreased taper by 35%. By the end of the second season regular lateral removal gave the tallest trees, but regularly removing laterals when approximately 30 cm long gave the thickest stems, so allowing short laterals to develop before removal would appear a suitable compromise.
- *Betula pendula* 'Dalecarlica' (average of 18.7 laterals produced in the maiden year)  
Regular lateral removal increased maiden height modestly from 209 to 240 cm (15%) but decreased taper significantly by 57%.  
By the end of the second season the largest trees with greatest taper were in the winter-pruned treatment.
- *Robinia pseudoacacia* 'Frisia' (average of 19.9 laterals produced in the maiden year)  
Regular lateral removal increased maiden height only modestly from 280 to 309 cm (10%), but decreased taper by 45%.

In this vigorous subject the crown formed in the maiden year, which further reduced stem taper by thickening the top of the stem below the head. A compromise is needed whereby laterals are retained for as long as possible without causing large pruning wounds, and the head is not allowed to develop too quickly, by thinning out branches above 1.8 m height.

Further information may be obtained from the HDC project report HNS 40 years 1, 2 and 3 titled: 'Pruning for quality with minimum reduction in size'.

The full report includes additional information on pruning shrubs in containers and the benefits of delaying removal of rootstock sucker shoots in spring of the maiden year.

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