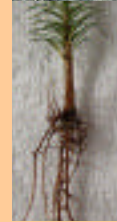


# Improving the Rooting Ability of Fraser Fir Cuttings

NC STATE UNIVERSITY

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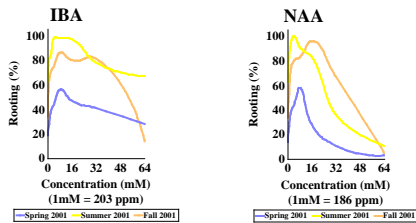
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**Goal:** To understand how various factors influence the rooting ability of Fraser fir cuttings in order to develop an economically feasible clonal propagation system.

## Season and Auxin Study

- ❖ What is the best season for collecting and rooting cuttings: Fall (August), Winter (February) or Summer (June)?
- ❖ What is the best auxin (rooting hormone) to treat cuttings with: IBA (indolebutyric acid) or NAA (naphthaleneacetic acid)?
- ❖ What is the best auxin concentration to treat cuttings with: 0, 1, 2, 4, 8, 16, 32 or 64 mM?



## Conclusions

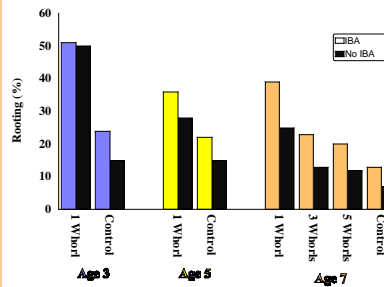
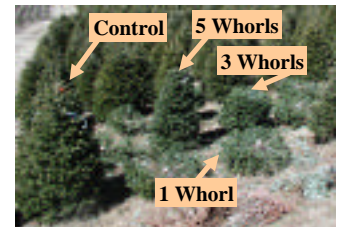
Fraser fir cuttings from 3-0 or 4-0 seedlings rooted best (90-100%) when:

- ❖ Collected in summer (June)
- ❖ Treated with either:
  - 4 – 16 mM (~800-3200 ppm) IBA or
  - 2 – 8 mM (~375-1500 ppm) NAA

## Age and Stumping Study

- ❖ What is the effect of age on rooting: 3, 5 or 7 years in the field?
- ❖ Do cuttings from stumped trees root better:
  - stumped to bottom whorl or control (Ages 3 and 5)
  - stumped to bottom 1, 3 or 5 whorls or control (Age 7)

### Stumping Treatments



## Conclusions

- Rooting ability in Fraser fir:
- ❖ Is higher for younger trees
  - ❖ Increases with the severity of stumping

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