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# Upscaling FRM production for future forests and FGR conservation: clonal propagation of selected *Taxus baccata* plus trees with high paclitaxel content

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## Introduction

• *Taxus baccata* (European yew) is native to Greece, which hosts the most south-eastern populations of the species. It is a medically interesting conifer due to its tetracyclic diterpenes, the anti-cancer agent paclitaxel (taxol), being the most well-known.

• Yew trees with high content of paclitaxel (taxol) have been identified in the natural population of Mt. Cholomon in Greece. The propagation of these plus-trees is of high importance both for the establishment of future plantations and for the *ex-situ* conservation of this valuable germplasm.

## Aim

- Cloning of high-yielding taxol individuals by vegetative propagation.
- *Ex situ* conservation of high-yielding taxol individuals.

## Materials and Methods

- A total of 600 cuttings from top and side shoots were taken from 10 highly producing paclitaxel trees and treated with a rooting solution containing the plant hormone K-IBA at concentrations of 6000 ppm and 12000 ppm.
- Cuttings were placed in a greenhouse for rooting using a perlite and peat 2:1 rooting medium, under constant temperature and humidity conditions.

## Results

- After 5 months the evaluation of rooting success varied between different genotypes (40%-100%), but was generally considerable (average success rate of 79.5%).
- The higher K-IBA concentration resulted in a better rooting success, only in 50% of the genotypes tested, however the use of the 12000 ppm concentration resulted in an average of 2.76 cm root length, compared to an average of 2.69 cm when the 6000 ppm concentration was used.
- Overall, high yielding paclitaxel trees were successfully clonally propagated; these results are important for both *ex-situ* conservation and plantation establishment.

## Acknowledgements

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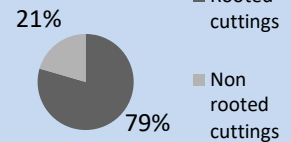
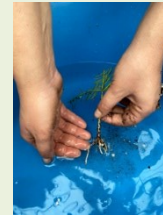


Fig 1: Rooting percentage

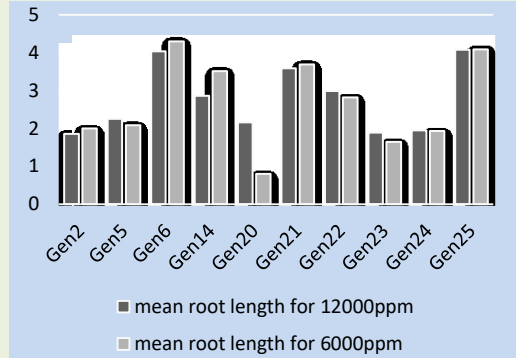


Fig 2: Mean root length for each genotype with hormone K-IBA at concentrations of 6000 ppm and 12000 ppm.

## Conclusions

- Our findings show that hormone K-IBA is suitable for vegetative propagation.
- In our experiment the rooting percentage varies among genotypes.
- Genotype of mother trees is essential of the success of rooting in *T. baccata* species.

## References

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