

Specific silvicultural itineraries to optimize the production of quality timber and economic yield of *Pinus pinaster*

Introduction

Four silvicultural scenarios have been developed that take into account timber quality. The silvicultural scenarios are:

Standard silvicultural scenario (M2): In the M2 silvicultural scenario there will be timber harvesting in 3 thinnings and in the final felling.

Short shift silvicultural scenario with subsidies (M4): In the silvicultural scenario M4 we will have timber harvesting in 1 thinning and in the final cut.

No management silvicultural scenario (M8): The no management silvicultural scenario from the initial planting, with a density of 1250 trees/ha, must assume that there is natural mortality, at least in the poorer seasonal qualities. This effect can be of the order of 10-20 % in number of trees of about 5-10 % in volume at the end of the shift. In this analysis we have assumed it to be 10 % in volume, although this may be lower than values that may occur in reality. We also assume it to be uniform across all grades, although it may be more logical to assume a higher incidence in smaller individuals. In the silvicultural scenario M8 we will only have timber harvesting in the final cut.

Multi-product silvicultural scenario (MG2): For the MG2 silvicultural scenario, two possible alternatives will be considered, with plantation and with natural regeneration, which means two totally different economic scenarios.

MG2 with plantation: In the silvicultural scenario MG2 we will have timber harvesting in 2 thinnings and in the final cut.

MG2 with natural regeneration followed by thinning after 5 years: In the MG2 silvicultural scenario with natural regeneration we will have timber harvesting in 2 thinnings and in the final felling.

Lessons learned

Four silvicultural models have been developed taking into account timber quality. The main conclusion we can draw from this economic analysis is that the minimum site quality that ensures economic profit is in medium sites (dominant height from 16 m to 20 years) for any silvicultural scenario of prices and interest on money. In lower quality sites it is only possible to obtain profitability if good natural regeneration is possible and with the help of subsidies for non-self-financing treatments. The next conclusion is that the silvicultural scenario MG2 is the best in all qualities and scenarios, except for quality 7 m with an interest rate of 2 %. With this silvicultural regime a higher profitability is achieved than in the M2 scenario, the second best in all cases, but with the advantage of needing 5 years less to achieve it and it is also achieved with one less silvicultural action. If we compare the MG2 scenarios with and without planting, it shows that natural regeneration is more profitable, mainly because of the savings from not having to plant, which is more expensive than the thinning that has to be done with natural regeneration.

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

<https://www.sigcamaderadecalidad.info/>

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