

ABSTRACT BOOK

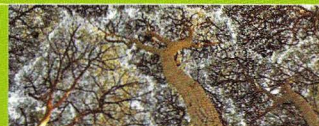
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P2-17 Prediction of annual tree growth and survival for thinned and unthinned even-aged maritime pine stands in Portugal from data with different time measurement intervals

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The Portuguese national forest strategy published in 2006 divided the Portuguese forest territory into three main functions: wood production, multifunctional systems and protected areas. Wood production is mostly related with pure even-aged stands of two species, the maritime pine (*Pinus pinaster* Ait.) and the blue gum (*Eucalyptus globulus* Labill.). Sustainable forest management of these productive areas requires adequate prediction of stocks and growth. To face the challenge of fast changing scenarios, growth models need to provide adequate predictions in a wide range of time intervals. Individual-tree growth and yield models are especially useful for management planning, because they are capable of simulating a wide variety of management activities, particularly thinning. They often describe annual changes in growth and survival of individual-tree providing detailed information about stand structure and composition. Available data sets for fitting individual-tree models frequently have measurement intervals greater than one year and many times these intervals are irregularly spaced. Also thinning can occur between measurements. This causes difficulty when modelling annual tree growth and survival. An annual individual-tree growth and survival model is developed for pure even-aged stands of maritime pine in Portugal, using data with irregularly spaced measurement time intervals and considering thinning effects. The central components of the model are the equation for diameter growth, the equation for height growth and a survival function. Variable growth and survival rates are assumed in the modelling approach. The model is distance-independent and will be useful for intensively managed areas of pure even-aged stands of maritime pine in Portugal.

Keywords: stand dynamics and forest management; maritime pine; growth; individual-tree modelling