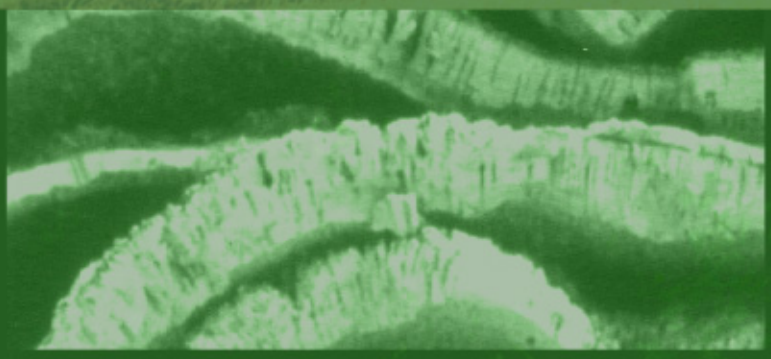
Congresso Mundial do Sobreiro e da Cortiça



CONGRESSO MUNDIAL DO SOBREIRO E DA CORTIÇA

Lisboa 19-21 Julio 2000

CORK-OAK REFORESTATION - EFFECTS OF PREPLANTING ROOT TREATMENTS AND TREESHELTERS ON SURVIVAL AND GROWTH SEVEN YEARS AFTER PLANTATION.

Alexandra S. Dias*, J. Tomé , L.S. Dias* e J. S. Pereira****

Dep Biologia /CEA, Universidade de Évora

Dep Engenharia Florestal, Instituto Superior de Agronomia

SUMMARY

Four-month old containerized cork-oak seedlings grown in nursery with different root conditioning were planted in a fenced area near Évora, southern Portugal. The effects of six precondioning root treatments and two different treeshelters on the survival and growth were evaluated seven years after plantation. Pre-planting root treatments, consisting in the combination of three different containers and two different substrates did not clearly affect survival but plants grown with a mixture of ground pine bark and vermiculite grew better than plants which received a superfosphate enriched mixture of soil and peat. Different shelters affect differently both survival and growth of the plants. The 1.20 m high, translucent light brown corrugated polypropylene shelter (Sheltatree) did not significantly affect survival, increased growth in height but trunk growth in diameter was delayed in comparison with non sheltered plants. The 0.75 cm high transparent PVC shelter (Gro-Cone) had no effects on height and significantly reduced trunk radial growth as well as plant survival but only when compared with the other shelter. The use of treeshelters appears as a promising technique which, depending on the local conditions, may conciliate the multiple use of the montado with cork-oak regeneration. The use of a seedling growth substrate like ground pine bark revealed high potential for plant growth in the usually nutrient scarce soils of cork-oak stands.

INTRODUCTION

Cork oak (Quercus suber L.) occurs mainly in montados, agro-pasture-forestry systems where cork-oak natural regeneration is usually endangered by the other components of the system like agricultural management, presence of cattle or other herbivorous species.

The use of individual treeshelters may be particularly useful in cork-oak reforestation because, at least in some conditions, it may conciliate the multiple use of the montados with cork-oak natural regeneration or artificial reforestation without a long-term reserve of great areas for that purpose.

When this study started, the successful use of treeshelters in oak regeneration had been reported in different climatic conditions (Tuley, 1983, 1985; Evans and Potter, 1985, Rendle, 1985; Potter, 1987, 1988) but no studies were known in cork-oak or involving the use of shelters under mediterranean conditions.

Therefore, a study was conducted to evaluate the effects of two treeshelters on survival and growth of young cork-oaks in the mediterranean climate of southern Portugal. As is also known the pre-planting root conditioning may be important to the subsequent survival and growth of oaks (Johnson et al., 1984; Ponder, 1997) and so the effects of six preconditioning root treatments were also investigated.

MATERIALS AND METHODS

Plants were grown from acorns of the November/December production collected and selected from

Pedidos de cópia desta publicação para Alexandra Soveral Dias, Departamento de Biologia, Universidade de Évora, Ap. 94, 7002-554 Évora, Portugal ou, de preferência, para alxandra@uevora.pt.

Reprint requests to Alexandra Soveral Dias, Departamento de Biologia, Universidade de Évora, Ap. 94, 7002-554 Évora, Portugal or preferably to alxandra@uevora.pt.