

The Use of TerraCottem® in Reforestation

Consejería Medioambiente Parque de Los Alcornocales
(Park of the Cork Oaks)



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City of Los Barrios, Spain



Since its original development by the University of Ghent, Belgium for use in combating desertification in semi-arid regions of Western Africa, the TerraCottem® soil conditioner has gained credibility for its performance and cost-effectiveness in afforestation, reforestation and environmental restoration projects worldwide. By surrounding a plant's roots with water, nutrients and natural growth stimulating elements, TerraCottem® provides transplanted trees with a significantly higher chance to survive the critical period just following transplanting, and for many years after. This is yet another showcase that demonstrates the positive impact of TerraCottem® on the surviving changes of new planted trees in different growing conditions.

What is TerraCottem®?



- ... was developed at the University of Ghent
- ... is a physical soil conditioner
- ... stimulates biomass production and plant growth
- ... increases the capacity of the soil or substrate to retain water and nutrients
- ... is a blend of more than 20 substances, all assisting plant growth in a synergetic way

These substances can be divided in 6 groups:

- 1) Hydroabsorbent polymers
- 2) Soluble mineral fertilisers
- 3) Slow release mineral fertilisers
- 4) Synthetic organic fertilisers
- 5) Carrier material LAVA
- 6) Growth stimulators

- Improve plant and root growth
- Increase germination
- Reduce the volume and frequency of necessary irrigation
- Stimulate microbiological activity
- help plants to withstand periods of stress by drought or transplantation
- reduce maintenance costs
- ...

Parque de Los Alcornocales, Los Barrios, Spain

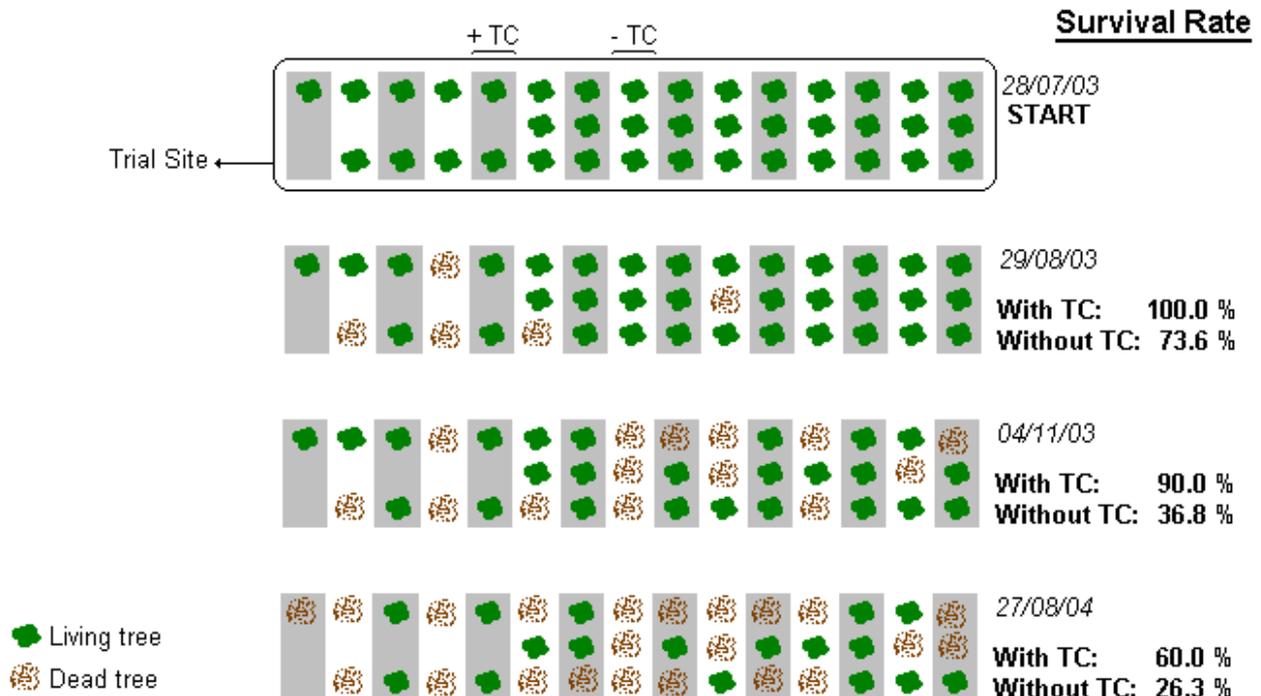
The “Parque Natural de los Alcornocales” (Park of the Cork Oaks) located in the South of Spain covers a total surface of 170,000 hectares. The park consists of both private and public estates. One of the tasks of the Consejería Medioambiente Parque Natural de los Alcornocales (= Environmental council of the Park of the Cork Oaks) together with the city of Los Barrios is the maintenance and replanting of the park's public parts. One hundred to three hundred thousand 1-year old saplings are planted on a yearly basis. The average mortality rate varies between 10 to 30% depending on the type of soil, rainfall, temperature, wind, etc...

This trial's aim is to evaluate whether the application of TerraCottem® will increase the survival rate of the cork oak. **All agreed that it was not the right time to plant trees. It was predicted that “the untreated ones would die within 3 days if no water was given”.**

1. Trial Set-Up

The test is done on cork oak or *Quercus suber* L. Two treatments are used: control (no TerraCottem®) and TerraCottem® (25 grams per plant hole). On July 28th 2003, all 9-month old saplings were planted at the same location, the TerraCottem® - treated trees next to control ones. The first sapling from the right is treated with TerraCottem®, then one without TerraCottem®, with TC, without TC etc. There are three rows of trees planted on a slope. The total number of trees is 39, 20 with TC and 19 without TC. The height of the trees at the start of the experiment was not measured but they were of similar size. All received the same irrigation (2 buckets of water within 24 hours of planting). Afterwards, no irrigation water was given. The growing conditions are severe: Unpredictable rainfall, sometimes strong winds and high summer temperatures (e.g. 40-45°C). Furthermore, the trees are planted on a slope what is unfavourable for water infiltration as it increases run-off of rainwater. At regular times, observations on survival rate are made.

2. Observations



3. Conclusions

On the 27th of August 2004, a total of 14 **control trees** died. Out of a total of 19 planted trees, this means a **survival rate of only 26.3%**.

The **TerraCottem – treated oaks** have a much higher survival rate. Only 8 out of 20 planted trees died. This is a **survival rate of 60.0%**.

The aim to increase the trees' survival rate has been reached

