

ACCOUNT of COMMERCIAL USE of timber treated with BORON (Totim-B) and Biotrans FIELD LINERS for use as POLES in an ORCHARD TRELLISING SYSTEM

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Background

I returned to the family fruit farm in the Ceres area of the Western Cape in 1990 after some 10 years in forestry management in the then Kangwane Homeland (an area surrounding Swaziland in the Lowveld as well as on the Highveld) where amongst other tasks we treated timber poles with Creosote in heated open tanks as well as CCA poles in a pressure vessel, mostly for fencing in the area. At that time the deciduous fruit industry was moving towards more densely planted orchards on trellising systems so that larger fruit trees could be planted and branches could be more easily manipulated to induce earlier bearing and hence improved profitability.

Commercial use

In preparing new orchards I needed to remove a stand of mature pine trees (*Pinus radiata* and *Pinus canariensis*) and I calculated that it would be cheaper to cut these trees into 100mm x 100mm square "poles" and treat them with Totim-B and shrink wrap the ends with a Field liner, than to purchase CCA or Creosote poles in order to trellis the new orchards.

The timber was duly cut and sawn into 100mm x 100mm beams and immersed in Totem-B achieving a BAE of 5,37 kg/m³. Heat shrink prototype Biotrans Field Liners (BOL-210-15-500) were applied and the poles were planted at a depth of 0,8m in the soil. Some 600 poles were treated. The field liners had a total length of 1,5m which meant that 0,7m of Field Liner was above ground. This was specifically done to protect the poles from irrigation water. The Western Cape has a Mediterranean climate with winter rainfall and summer drought necessitating irrigation in the summer. The orchards were equipped with a microjet (sprinkler) system with 1 emitter/tree providing about 5mm of irrigation per hour. At the height of the irrigation season the orchards received about 10 hours of irrigation broken up into 3 cycles per week. A total of 7000 to 8000m³ of irrigation water is applied per hectare per season. Annual rainfall averages about 750mm per annum.

The poles were planted in Orchards A6 and B1 in 1996 and 1997 respectively. These poles were carefully removed in 2003 and re-used in orchards B5 and C2 in the same year. A few poles with damaged sleeves were not re-used due to incipient decay at soil level. After 13/14 years in service the poles were removed from the latter two orchards in Nov/Dec 2010 and although numerous poles were still sound some more with damaged sleeves showed incipient decay.

Conclusion

The problem experienced with the square poles was that the Field Liners were heat shrink prototypes that failed on the edges after a few years because they were thinner there due to the heat shrinking over the sharp edges.

In my opinion this type of treatment without the heat shrinking application method on square poles could be a viable alternative to the use of creosote and CCA treated poles.