TITLE  On-Site Tree Storage Cover Trial

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SX 83106

On-Site Tree Storage Cover Trial

Final Report

Silviculture Branch
84-01-05
INTRODUCTION

Currently forest managers are showing considerable interest in the use of reflective space blankets for covering tree cartons when stored on-site. This interest has been prompted by manufacturers' and suppliers' claims that space blankets are far more effective at slowing the heating process than conventional covers. Note, these covers are intended for covering a planter's or small group of planters' supply of seedlings for the day on the planting site.

OBJECTIVE

The objective of this trial was to test the effectiveness of 3 different storage covers at reducing heat buildup within a carton of trees.

METHOD

The trial was conducted for 3 days during mid-summer of 1983. Five cartons of trees were removed from a cooler (20°C) at 0830 each morning. Each carton was then set out in the open subject to 1 of 5 different conditions; 1) with no cover, 2) placed in full shade, 3) covered by a brown canvas tarp, 4) covered by an orange polyethylene tarp and 5) covered with a reflective space blanket. Temperatures within the cartons were then monitored on an hourly basis.
METHOD cont'd...

Each of the 3 covers used were elevated above the box of trees to provide air circulation. On one day (July 29) the space blanket was not elevated, but was laid directly over the tree carton.
DISCUSSION

As expected full shade provided the greatest protection while the trees stored in the open with no cover suffered the greatest heat buildup.

The space blanket, when elevated above the tree carton, reduced heat buildup within the carton by $2-5^\circ C$ over the canvas and polyethylene covers during the course of the trial. (It has long been recognized that canvas and polyethylene covers must be elevated to prevent 'green-house' heating).

While the space blanket was effective at reducing heating from solar radiation it has no insulation value and thus has no advantage over conventional covers at reducing convective heat gain from the environment.

RECOMMENDATION

Based on the results of this trial the Branch is not prepared to recommend that space blankets become an operational requirement. Conventional covers, provided they are elevated, give sufficient protection to cartons of trees during short term on-site storage.