ON-SITE TREE STORAGE
COVER TRIAL
FINAL REPORT

November 27, 1984
ON-SITE TREE STORAGE COVER TRIAL

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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 manufacturer's 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 4 different storage covers at reducing heat buildup within a carton of trees.

METHOD

The trial was conducted for 5 days during the spring and summer of 1984. Six cartons of trees were removed from a cooler (2°C) at 0830 each morning except for June 14. On that occasion the cartons were left unrefrigerated overnight. Each carton was then set out in the open subject to 1 of 6 different conditions; 1) in full sun, 2) placed in full shade, 3) covered by a brown canvas tarp, 4) covered by an orange polyethylene tarp, 5) covered with a reflective space blanket and 6) covered with a reflective silver foil. Temperatures within the cartons were then monitored on an hourly basis from 0900 to 1600.

The polyethylene and canvas covers were elevated above the box of trees to provide air circulation. The space blanket and silver foil were wrapped around the boxes of trees.
DISCUSSION

As expected, full shade provided the greatest protection from heat build-up.

Of the 4 covers used none emerged as providing consistently significantly greater protection from heat build-up.

RECOMMENDATIONS

Based on the results of the trial, the Branch is not prepared to recommend space blankets as an operational requirement. It could not be demonstrated that the space blanket, or any other cover, provided significant protection from heat build-up.

It is recommended that on-site storage be kept to a minimum and that tree cartons be stored in full shade wherever possible.
RESULTS - May 29, 1984

WEATHER:
A.M. - Warm, sunny periods, Winds 5-10 kmh.
P.M. - Mainly sunny, Winds 5-10 kmh.

AMBIENT TEMPERATURE: 21°C at 1400

- Full shade
- No cover
- White canvas
- Orange polyethylene
- Space blanket
- Silver foil

TEMPERATURE (°C)

900 1000 1100 1200 1300 1400 1500 1600

TIME
RESULTS – May 30, 1984

WEATHER:
A.M. – Sunny periods with cloud, Winds 15–25 kmh.
P.M. – Same as A.M.

AMBIENT TEMPERATURE: 15°C at 1400

Diagram:
- Full shade
- No cover
- White canvas
- Orange polyethylene
- Space blanket
- Silver foil

Graph:
- Temperature (°C) on the y-axis
- Time from 900 to 1600 on the x-axis
RESULTS - June 13, 1984

WEATHER: A.M. – Cloudy with sunny periods, Light winds.
P.M. – Warm and sunny, Winds 10–20 kmh.

AMBIENT TEMPERATURE: 22°C at 1400

- Full shade
- No cover
- White canvas
- Orange polyethylene
- Space blanket
- Silver foil

TEMPERATURE (°C)

TIME

900 1000 1100 1200 1300 1400 1500 1600
RESULTS - June 14, 1984

WEATHER:
A.M. - Sunny periods, No wind.
P.M. - Warm and sunny, Winds 15-30 kmh.

AMBIENT TEMPERATURE: 21°C at 1400

- Full shade
- No cover
- White canvas
- Orange polyethylene
- Space blanket
- Silver foil
RESULTS - July 11, 1984

WEATHER: A.M. - Warm and sunny, Winds 5-10 kmh.  
P.M. - Warm and sunny, Winds 15-20 kmh.  

AMBIENT TEMPERATURE: 20°C at 1400

- Full shade  
- No cover  
- White canvas  
- Orange polyethylene  
- Space blanket  
- Silver foil

Temperature (°C) vs Time

0 5 10 15 20 25
900 1000 1100 1200 1300 1400 1500 1600

Time