1993 TRIALS - SAANICH TEST NURSERY

SUBJECT: RESISTANCE DEVELOPMENT OF WESTERN RED CEDAR AGAINST KEITHIA BLIGHT USING INCREASED LEVELS OF COPPER, ZINC, MANGANESE AND SILICON

Background

Since Keithia blight on western red cedar will continue to be a problem in coastal nurseries, further nutritional trials need to be carried out to determine if certain nutritional regimes can assist in the control of the disease. Eric Van Steenis believes there is a basis for increasing levels of certain micronutrients as a possible control. Copper, zinc, and manganese will be applied at increased rates to test this theory.

Trial Work Required

The proposed treatments for this trial are:
1. Control - standard fertilization regime with Plant Prod fertilizer
2. Increased Cu, Zn, Mn levels - standard fertilizer with additional Plant Prod Cu, Zn, Mn combined chelate package.
3. Increased Cu level - standard fertilizer with additional Cu chelate.
4. Increased Zn level - standard fertilizer with additional Zn chelate.
5. Increased Mn level - standard fertilizer with additional Mn chelate.

Seedlot: Cwr 06754 A3\RVA\84% germ.830s/g

The trial will be sown as a 2-0 stock type in 415B's and grown at Saanich Test Nursery for two growing seasons. The levels of Cu, Zn and Mn will be adjusted throughout the first growing season in order to increase the levels of those elements found in the foliage to the maximum target levels, hopefully without causing any toxicity problems. Regular foliar analysis will be required every two weeks to check the tissue levels and make the necessary nutrient adjustments. Six replicate blocks will be sown instead of the standard five, to allow for the foliar samples. Assessments for Keithia blight will be made during the fall of 1993 and in the spring and summer of 1994. A random sample for morphological assessments will not need to be taken until September/October of 1994. If any differences in the development of Keithia are apparent at that time, then the trial could be outplanted in a nursery bed at Saanich Test Nursery.