Improving Soluble Fertilizer Schedule

Former trials have indicated 20 - 30% gains in top and root dry weights using Osmocote compared to soluble fertilizers. Soil salinity with soluble fertilizer ranges from 200-600 micromhos. With Osmocote the range may approach 2000 micromhos without apparent harm. In *The Greenhouse Environment* by J.W. Mastalerz, 2000 micromhos is judged safe for most crops, while sensitive crops should be kept below 1000. In the same text, recommended rates of soluble fertilizers are 4 to 5 times higher than currently used in container culture. This trial will evaluate the effect of increased fertilizer rates and monitor salinity levels.

Experimental Design

Arrangements will be made to carry out treatments on production western hemlock, either in a nursery or by transporting blocks to PFRC. Four blocks per treatment will allow sufficient stock to monitor salinity periodically.

Treatment 1: Control. Will receive standard soluble fertilizers according to production schedules.

Treatment 2: Will receive 10-52-17 and 20-20-20 when scheduled, but at 3 times the concentration on the production schedule.

Treatment 3: Will receive 10-52-17 and 20-20-20 when scheduled, but a 5 times the concentration on the production schedule.

Evaluation of Results

Salinity will be monitored throughout the growing season and stock will be observed for effects such as fertilizer burn. At the end of the growing season, samples will be assessed for height, root collar diameter, top and root dry weights.

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