

SOME ASPECTS OF FERTILIZATION USING CONTAINERIZED WHITE SPRUCE SEEDLINGS

A. Gonzalez'

The purpose of this experiment was to establish the nutrient content in the substrate and foliage associated with satisfactory development of containerized white spruce (*Picea glauca* [Moench] Voss) seedlings. Experimental details were: **Seedling quantity:** 924 (540 Quebec tube, 115 cm³; 384 Roottrainer Hillson, 183 cm³); **Environment:** plastic greenhouse; **Duration:** 24 wk (sown 12 Feb.; fertilization 17 March to 18 Aug.); **Irrigation/fertilization:** dilutor adapted to automatic boom system; **Fertilization regime:** 7 wk 20-20-20, 7 wk 15-30-15, leached 1 wk, 8 wk 0-10-25; **Growing medium:** sphagnum peat moss; **Measurements and analysis** (weekly: fertilizer:pH, conductivity and volume; seedling/growing medium:N, P, K; plant shoot and root lengths.)

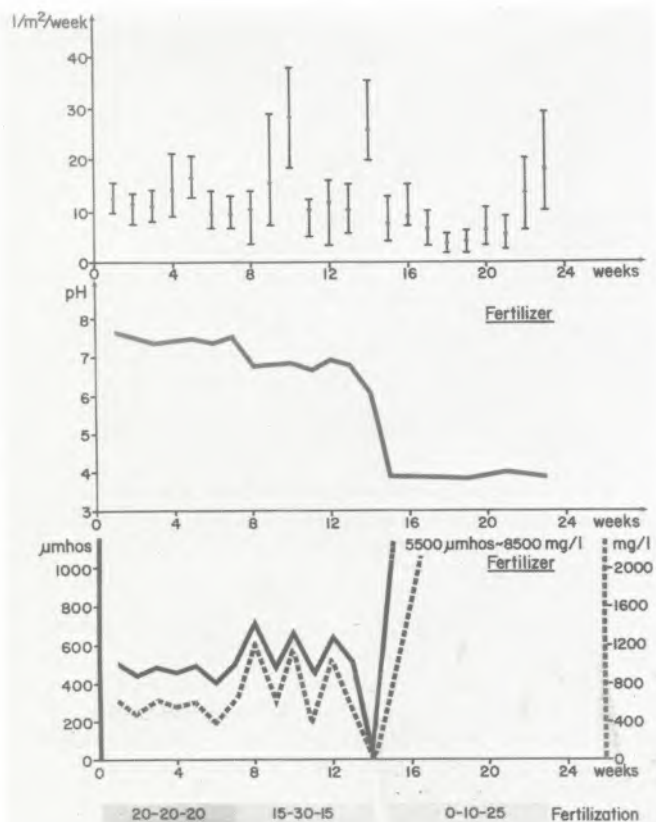


Figure 1. Some characteristics of the fertilization regime.

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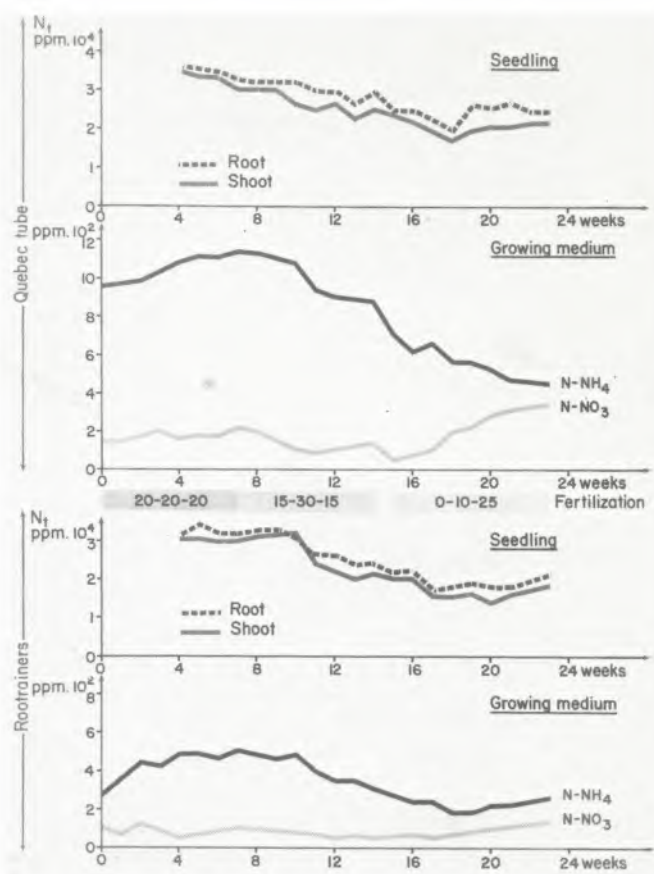


Figure 2. Nitrogen forms in seedlings and growing medium.

Despite fluctuations in fertilization (Fig. 1), which were more perceptible after analysis of the growing medium than of the foliage, the general appearance of the seedlings was very satisfactory. Growth was similar in both containers, although the root system appeared larger in the "Roottrainers". Nitrogen content decreased gradually in the foliage, showing a stabilization trend (2.10⁴ ppm) after 16 weeks. Ammonium and nitrate diminished with time in the growing medium (Fig. 2). A gradual accumulation of P (6-8.10² ppm) and K (2-3.10³ ppm) was observed in the peat medium. In view of the quality of seedlings produced it can be concluded that they can tolerate appreciable changes in the nutrient and water regime without normal development being affected.

This experiment was carried out within Dr. A. Corriveau's genetics project.