SX 84208Q

SOURCES OF IRON FOR CONTAINER CROPS

Working Plan

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Ministry of Forests
Silviculture Branch
Subject: SX 84208 0 Sources of Iron for Container Crops

Introduction

Ferrous sulphate has been used extensively to improve color in crops and to prevent extreme chlorosis problems common in past years. It has been argued that it is the sulphur content and not the iron which has prevented chlorosis. Usual ferrous sulphate sources also contain high manganese levels and some copper. Previous fertilizer trials indicate that although color has been improved with ferrous sulphate, it has also stimulated height growth, often at the expense of root development. A trial is required to determine which element is stimulating height growth and if color can be improved in another way.

Experimental Design

Each treatment will consist of 3 PSB 313 Styroblocks. Treatments should be greenhouse started before being moved outside in early summer. All treatments will be based on standard 3 peat: 1 vermiculite growing medium containing 3 kg/m³ Green Valley 10 mesh and finer dolomite lime.

The seedlots to be used are:
Sw (SZ 3110) 93H/11/B1/4/177/814 89%
P1 (SZ 2030) 82/3/252/1/433 83%

All treatments should be double sown and thinned to one seedling per cavity. Fertilization will be as per standard practice; i.e.

Starter: 10-52-17 at 75 ppm N
Grower: 20-20-20 at 125 ppm N
Finisher: 10-52-17 at 75 ppm N
Treatment 1. Control. No additional applications.
2. Apply Fuji brand FeSO₄ at 150 g/1000 l every 2 weeks.
3. Apply feed grade FeSO₄ at 150 g/1000 l every 2 weeks.
4. Apply iron chelate EDTA at 30 ppm iron every 2 weeks.
5. Apply sulphuric acid at 17 ppm S every 2 weeks.
6. Apply Mg SO₄ at 17 ppm Mg every 2 weeks.
7. Apply Na₂SO₄ at 17 ppm Na every 2 weeks.
8. Apply (NH₄)₂SO₄ at 17 ppm N every 2 weeks.

Requirements

Spruce - 8 treatments x 3 blocks = 24 PSB 313's
= 4752 cavities x 2 seeds = 9504 seeds.

Pine - 8 treatments x 3 blocks = 24 PSB 211's
= 5760 cavities x 2 seeds = 11520 seeds.

Total = 24 PSB 313's - regular soil medium.
24 PSB 211's - regular soil medium.

Observations Required

At the end of the growing season, all treatments will be processed for comparative morphological description and tissue analysis. Observations should be made of growth and color differences among treatments.

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GM/lj