Field Experimentation of Alternative Growing Substrates in the Ornamental potted plant industry

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The problem

The development of alternative growing substrates is an **important challenge in the ornamental potted plant industry**. Laboratory analyses of a substrate can provide essential information about a substrate, but these measurements alone **cannot fully connect substrate properties with actual plant responses**.

The solution

A **well-designed on field experiment** allows to understand how it behaves under realistic production conditions. The experimental layout should ensure **replication, randomisation and appropriate block arrangements** while mini-mise border effects. Environmental and cultivation conditions should be **monitored throughout the trial.**

Benefits

Integrated evaluation can determine: **how its physical and chemical properties evolve over time; how substrate changes affect plant growth and quality**; which irrigation and fertilisation strategies may be required; whether a substrate can provide a stable and manageable root environment.

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Practical Recommendations

- One possible approach for correcting excessive alkalinity is the incorporation of elemental sulphur (S^0) but it should not be applied according to a universal dosage.
- Instead, its application rate should be determined through preliminary laboratory or small-scale incubation trials, monitoring changes in pH and EC over time.
- Elevated EC can additionally be managed through controlled irrigation and leaching, particularly during the initial stages following potting, when soluble salts released from compost or other alternative materials may be highest.
- Nevertheless, irrigation should be considered a management tool rather than a permanent solution to an intrinsically unsuitable substrate.

About PEATLESS and this Practice Abstract

This practice abstract was elaborated in the framework of the PEATLESS project, based on the EIP AGRI practice abstract format. © 2023
Project dates: from May 2025 to April 2028.
Goal: To characterise sectorial needs at selected systems towards tailoring PEATLESS alternative substrate blends to overcome identified barriers for peat reduction in horticulture.

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