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176. © The suitability of coir peat as a substrate for bedding plant and perennial production. Sittig, H.-J. International Plant Propagators' Society, combined proceedings, 2009, 59:192-196. 2010.

The Suitability of Coir Peat as a Substrate for Bedding Plant and Perennial Production©

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PROBLEMS WITH COMPOSTED PINE BARK SUBSTRATE

The substrate we used, composted pine bark mixed with 10% vermiculite, gave inconsistent results. It was difficult to manage the pH and EC levels because:

- Quality of composted bark supplied was inconsistent.
- pH was very low, often below pH 5.5.
- Downward pH drift during cultivation.
- EC levels in packs and pots remained low, also after pre-enriching and adding fertilizer with each watering.
- Air-filled porosity varied a lot, often too many fines were resulting in poor oxygen availability in the root area.

In our efforts to find a solution to these problems we first reviewed the basics to ensure we understood what was happening. This knowledge also helped us to better evaluate other substrate possibilities. We decided to investigate the suitability of coir peat.

BASIC PLANT GROWTH REQUIREMENTS

The basic requirements needed to grow plants include: light, temperature, relative humidity, water, substrate, fertilizer, and genetics.

All these factors have an influence on plant quality. A grower has less control over the first three factors and more control over the last four. To minimise risk in production a grower should take control of water quality, the type of substrate, fertilisation, and the choice of genetics.

DEFINITIONS OF BASIC CONCEPTS RELATING TO WATER QUALITY, SUBSTRATES, AND FERTILIZATION

pH (Potential Hydrogen).

- It is the acid value or a measurement of the concentration of the hydrogen ions (H+).
- The higher the concentration of H+ the lower the pH value and the more acidic.
- The pH scale ranges from 0–14. A pH of 7 is neutral, below 7 is acidic and above 7 is alkaline or basic.
- pH is a negative logarithm, pH 5 is 100 times more acid than pH 7; pH 4 is a 1000 times more acid than pH 7.