Geophysical Research Abstracts,
Vol. 10, EGU2008-A-07267, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-07267
EGU General Assembly 2008

Use of green and mixed composts as peat alternative for philodendron pot growing: morphologic and phenological effects.

M. E. Giorgioni (1), C. Ciavatta (2)

(1) DCA- Department of Fruit Tree & Woody Plant Science, Alma Mater Studiorum University of Bologna,V.e G. Fanin, 46, 40127 Bologna, Italy.

E-mail: megiorg@agrsci.unibo.it

(2) Department of Agro-Environmental Science & Technology, Alma Mater Studiorum University of Bologna, V.le G. Fanin, 40, I-40127 Bologna, Italy.

E-mail: claudio.ciavatta@unibo.it

The use of a mixed sewage sludge compost (MC) and a green compost (GC) produced by park and garden waste, as binary component with sphagnum peat (P) or coconut fibre (CF) in growing media for *Philodendron* 'Imperial Red' was evaluated. Both composts were mixed at ratio of 0, 20, 40, 60 and 100% by volume and a commercial peaty substrate was used as control. Substrates were physically and chemically characterized before use and plant growth was tested after 6-month growing in greenhouse, by determination of canopy dimensions, shoot and root dry weight and leaf surface; leaf chlorophyll content was quantified by SPAD, too.

Both composts did not compromise plant life but GC resulted in higher agronomic value than MC, especially at low rate and in mixes with peat. 20% GC and 80% P had the same positive effect on plant growth as 100% peat and coconut fibre and proved to be the most suited compost-based mix for philodendron, increasing leaf area (+39.8% than control), leaf dry weight (+ 39.9; Leaf Dry Weight = $0{,}0004x^2$ - $0{,}0725x$ + $4{,}7891$; r^2 = 0,95 for peat; Leaf Dry Weight = $-1E\text{-}05x^3$ + $0{,}0022x^2$ - $0{,}1075x$ + $4{,}3581$; r^2 = 0,99 for coconut fibre), root dry weight (+ 262,1% than control) and

almost doubling the total plant dry weight (+ 94,0%). By contrast, even at 20%, MC reduced plant height (-35%), leaf area (-48.2%), canopy dry weight (-46.0%) and root dry weight (-66.2 and -72.4% than unmixed peat or coconut fibre). Poorest canopy growth was obtained in 40-60 and 100% MC, without differences between rates and peat or fibre (Leaf Area = $0{,}1318x^2$ - 21,90x + 930,77; r^2 = 0,97; Canopy Dry Weight = $0{,}001x^2$ - 0,154x + 6,003; r^2 = 0,99).

Therefore, low pH (4.5-5.5) and EC (0.1-0.3 dS/m) appeared more important than macro and micronutrients contents in media for philodendron, settled the nutrient supply all over the growing period, quantifiable in not less than 620 mg N, P_2O_5 and K_2O.

Research supported by The Italian Ministry of the University and Scientific Research, Project PRIN n. 2005078931.39.