Question and Answer Period: Saturday AM General Session I

Jim Kresler: Have you done any studies where gypsum has been added to the potting mix?

Jim Downer: No. Others have worked on that When coarse gypsum (crushed dry wall) was added to make up to 5% of the medium, the physical and chemical properties of the mix change One is that the porosity of the mix is altered. That immediately has an effect on reducing the water content of the medium which is critical for eliminating *Phytophthora* diseases The other effect seems to be a chemical/fungicidal, calcium ion-based effect directly on the fungus that reduces the size of the sporangia and the number of spores produced.

Rooting Media and Plant Acclimatization ex Vitro

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INTRODUCTION

The transfer of plants from a sterile environment to a greenhouse is known as acclimatization, which corresponds to the Stage IV in the process of micropropagation Due to its technical requirements this phase is considered one of the most expensive of the micropropagation process and, consequently, a possible limiting factor on a commercial scale (Lewandowski, 1991)

In vitro culture is done under artificial conditions like a constant long-day photoperiod (generally about 16 h day^{-1}) with a low luminance level (1000 to 2000 lux) and a narrowed light spectrum (fluorescent lamps without red and infrared waves). The usual temperature ranges from 20 to 25C Inside the flask the air humidity is very high and the CO_2 level is low. The culture medium fixes the plants in the right position and releases to them nutrients, vitamins, amino acids, and sugar. Under these conditions, the plant is considered heterotrophic (Fugiwara, Kozai, and Watanabe, 1988) or mixotrophic (Deng and Donnely, 1993) Leaf anatomy and morphology show typical culture-induced phenotype (CIP) reduced palisade tissue, no epicuticular waxes on the leaf surface, abnormal linkage between the conduction vessels from the root-shoot sequence, roots with less absorbent hairs and stomata with low photosynthetic efficiency (Waldenmaier, 1988, Preece and Sutter, 1991, Hartmann et al., 1997)

For the horticulturist, this stage of acclimatization involves transplanting, which needs special care to avoid plant stress and contamination from pathogens Preece and Sutter (1991) suggest the following parameters be considered for successful acclimatization: control of light and air humidity, use of antitranspirants, prevention of contaminants, reduction of fertilization, and selection of substrates Among these factors the selection of substrates is one of the least studied (Avanzato and Cherubini, 1993).