

POLYMERIC SUPERABSORBENT CAN BE USED IN AIR LAYERING OF ROSES WITHOUT BEING DEGRADED

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The most reliable means of propagating rose variety Chrysler Imperial (double red) in Ghana is by air layering. The medium used at the Department of Horticulture of the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana, is the UST air-layering mix. This is bulky and not readily available. In a previous paper (Dartey et al 2002), use of the synthetic polymeric superabsorbent Broadleaf P4 gave similar rooting results as UST air layering mix. A significant observation however was the degradation of the polymer into slurry after only four days of air layering. Such rapid polymer degradation potentially limits its use as a rooting medium under high evaporative conditions, or in varieties that take longer to root.

To determine the cause for polymer degradation, transparent polythene sheets were compared with opaque polythene sheets on stems that were girdled or left intact (not girdled).

Degradation occurs when transparent polythene (that permits the transmission of light) is used to hold polymer on girdled or non-girdled stems, but not when opaque polythene is used. In the

Plate 1

Roots of air layered Chrysler imperial (a) growing through hydrated polymer granule (b).



latter case, polymer granules remain discrete and water is lost only through evaporation until rooting occurs. Subsequently, roots rapidly take up polymer-stored water, necessitating prompt removal of 'rooted' cuttings from the mother plant to prevent the roots from drying out. Use of a higher quantity of polymer will prevent rapid

drying out of formed roots. This will not be disadvantageous since granules through which roots have not grown can be recycled. Roots that have grown through hydrated granules may be expected to establish faster due to the availability of water from the attached granules.

The era of moisture availability in the girdled region limiting the success of air layering appears to be over, but the fact that exposure of hydrated polymer granules to ambient light results in rapid breakdown has serious agronomic

implications with regards to depth of placement and opaqueness of the soil medium.

REERENCE

Dartey, P.K.A., Adzraku, H., Atuah, L., Boateng, P.Y. and Awotwe, J. (2002). Use of a polymeric superabsorbent in air layering of roses (*Rosa hybrida*). Journal of the University of Science and Technology, Kumasi, Vol. 22 Nos. 1,2&3.