

Abstract:

Chrysanthemums are commercially propagated through cuttings. Pre-rooting storage of cuttings in the dark is a common practice among growers and companies that work and trade with chrysanthemum cuttings. Therefore, the maximum storage period for cuttings and differences in tolerance among cultivars has been investigated. Adventitious roots of cuttings can originate in almost any tissue, including the epidermis, stem cortex and pericycle, ray parenchyma, immature xylem and phloem cells, and pith. The aims of this work were to determine the effect of time of cold storage of cuttings (0, 1, 2, 3, 4, 5 and 6 weeks) on the rooting of four cut chrysanthemum cultivars (Super White, Sheena, Dark Orange Reagan and Town Talk) for two seasons of the year (summer and winter), and also to determine the origin of root formation in chrysanthemum cuttings. The study was carried out as a randomized complete block design with 5 replications for each storage treatment. Each plot was comprised of three cuttings that were examined 14 days after the cutting procedure. During the winter, the roots were studied by scanning electron microscopy (SEM) at the Electron Microscope Laboratory. The following conclusions were made: in winter, cold storage affected the rooting of cuttings, mainly after two weeks of storage for all cultivars. The rooting percentage was lower in the winter and the cuttings could be preserved for a shorter period. The source and growth of roots in chrysanthemum cuttings was found to be endogenous. After three days, callus formed in the pericycle and the first emergence of adventitious roots occurred by the fourth day of rooting. During the summer, cold storage could be up to 4 weeks without any problems.