
Standardization of dehydration techniques for preservation of selected ornamental foliage

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In the present era of eco-consciousness, use of natural products have become the premier choice for interior decoration. Dry foliage can be used as filler element and give bold effect in floral arrangements. Dehydration techniques are exploited for dehydrating promising color and shape of flowers and foliage for commercial utilization. However, dehydration techniques of foliage have not been fully exploited in Sri Lanka. Therefore, the present experiment was conducted with an objective of studying the efficacy of different dehydration techniques on preservation of selected ornamental foliage species viz. *Thuja standishi*, *Chlorophytum comosum*, *Asparagus setaceus*, *Araucaria luxurians*, *Nephrolepis exaltata*. As dehydration treatments; air drying, press drying, embedded in sand and silica at room temperature, hot air oven drying embedded with sand and silica, microwave oven drying embedded with sand and silica and freeze drying were studied. The experiment was arranged in two factorials completely randomized design with three replicates. Quantitative parameters such as moisture loss percentage, drying time, drying rate, reduced in diameter was analyzed were analyzed using Minitab 17 statistical software. Qualitative parameters including color, shape, brittleness, overall acceptability were measured visually. The results have indicated *T. standishi* and *A. luxurians* showed best results when dehydrated using freeze dryer for 48 hours with moisture loss of 60.1% and 65.3% respectively. *N. exaltata* reported the most promising results under hot air oven drying embedded in silica at 45°C for 24 hours with higher moisture loss percentage (92.8 %) as well as retention of better shape and preferable color. *A. setaceus* manifested notable brittleness under microwave oven drying, embedded in silica with higher drying rate (33.7 water/g/hours). *C. comosum* is not preferable for dehydration, since it lost its the color and shapes under all methods of dehydration. Among all the tested treatments, freeze drying gave best results with foliage shape, size, color, structure than other dehydration techniques. Therefore, the present study paved a way for finding the most suitable dehydration technique for selected ornamental foliage for their everlasting value.

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