

THE EFFECT OF DIFFERENT SUBSTRATES ON MORPHOLOGICAL CHARACTERISTICS OF ACCLIMATIZED *BOWIEA VOLUBILIS*

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Bowiea volubilis is an endemic, drought tolerant medicinal plant with large, poisonous, round bulb, twisted, long green stems and inconspicuous flowers. The over-collecting of bulbs (which contains cardiac glycosides) drastically decreased wild populations. Because of the small seed production, low germination ratio and difficult division of succulent, fleshy bulbs (with slow regrowth), *in vitro* studies were carried out in order to multiply the plants effectively. Sterilised segments of bulbs or inflorescence stalks were placed onto Murashige and Skoog (1962) media with different hormones (2,4-D, BA, NAA) and during multiplication, rooting, acclimatization of shoots, hormone-free media, clean substrates (e.g. peat + sand) were resulted high volumes of plantlets. Before acclimatization, *in vitro* bulbs were cleaned (their roots, shoots removed), and classified into 4 sizes (6-8; 9-10; 11-12; 13-15 mm). We formed a total of 10 groups with 30-30 individuals, distributing the sizes evenly. Four types of substrate (peat, perlite, coconut fiber, sand) and their mixtures of 50-50% were used. Previously we examined three parameters: length, diameter and weight of the bulbs; later the weight of the successfully acclimatized plants, the number and length of roots and leaves were measured. The acclimatization was done in one of the greenhouses of the Buda Arboretum, where the plants were grown with veil foil covering, irrigated every three days, without nutrient replenishment and artificial lighting. Our results showed that plants developed effectively on perlite-peat, sand-perlite and sand-peat mixtures. In these cases, we achieved the largest increases in roots, green parts, bulbs and total weights.