Effect of 6-Benzylaminopurine on the In Vitro Growth of *Alstroemeria* 'Freedom', 'Liberty', and 'Sweet Laura' During the Stage of Multiplication

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Rhizomes of *Alstroemeria* hybrids can be efficiently multiplied under in vitro conditions using liquid media. The use of 6-benzylaminopurine (BAP) has demonstrated to increase the growth and the rate of multiplication of rhizomes on several hybrid cultivars of this species. In addition, there is an increasing interest in developing automated in vitro systems for ornamental plants, such as *Alstroemeria* and other herbaceous perennials. The primary objective of this work was to verify the BAP effect on in vitro growth of *Alstroemeria* cultivars of frequent use in gardens in Chile, as a preliminary step for its culture under bioreactor conditions using a temporary immersion system. The explants used were rhizomes initiated previously under in vitro conditions from cultivars 'Freedom', 'Liberty', and 'Sweet Laura'. The rhizomes were cultivated on liquid MS media (Murashige and Skoog, 1962) supplemented with three different rates of BAP (0, 3, and 6 $mg \cdot L^{-1}$). Dry weight and length of rhizomes were collected and analyzed using statistical procedures. After 8 weeks of culture the cultures with 3 $mg \cdot L^{-1}$ BAP produced the greatest increase of dry weight of rhizomes, being significant only for 'Freedom' and 'Sweet Laura' explants. However, it is interesting the positive response that displayed for this parameter the rhizomes from 'Freedom' and 'Liberty' cultivated on medium supplemented with 6 $mg \cdot L^{-1}$ BAP, which indicates the different response between genotypes and the necessity to test greater rates on these cultivars. The rates of 3 and 6 $mg \cdot L^{-1}$ BAP produced the greatest values of length of rhizomes, but only being significant on 'Sweet Laura' explants. These results reveal that there are different responses to BAP on different Alstroemeria cultivars during the multiplication stage, and that is critical to continue the investigations to make more efficient the in vitro culture procedures of this species.

LITERATURE CITED

Murashige, T., and **F. Skoog.** 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. Physiologia Plantarum 15:473–497.