Title Leaf quality management of *Aechmea* cultivars throughout the supply chain

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Abstract

The ornamental value of Bromeliaceae not only depends on the inflorescence but more and more on the quality of the leafy part of these ornamental potted plants. In this respect breeding was focused on the creation of new shapes and colors for the inflorescence but less attention was paid to the leaves. However these days bromeliad cultivars with nice decorative leaves are produced and demanded by the markets. The plants of interest in this paper are from the genus *Aechmea*. These CAM (Crassulacean Acid Metabolism) plants do show a strong growth and contain plants with nice inflorescences. *Aechmea faciata* without spines is a novelty that has been introduced over the last decade. Crosses between different *Aechmea* species resulted in new hybrids very much wanted by growers and consumers. At a given point it became clear in the late 70's that some of these *Aechmea* hybrids suffer from leaf damage problems. This damage could not been explained by classical causes like sunburn, Ca deficiencies or temperature shocks. It became clear that not only mature plants were suffering from this problem but also young plant material. Leaf damage was not only induced during the greenhouse period but also during and after transport of young or mature plants. Some hybrids were very sensitive, others were rather insensitive. It became clear that more research was needed to clear up the minds of breeders, growers, traders and consumers and to find the real cause of the problem. We will present results starting from breeding throughout production of young plants up to flowering plants indicating the cause of the leaf damage. The basic cause of the leaf damage is cell burst at the level of the chlorenchyma cells. By studying CAM, the water relations, the cell wall strength and composition we actually can give a reasonable explanation for the leaf damage observed. The importance of these findings will be projected into the scope of the supply chain of *Aechmea* plants.