<u>Argyranthemum haouarytheum</u> - New Crop Summary & Recommendations

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New Crops:
Argyranthemum haouarytheum

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As the market for new crops is pulled by the consumer, the floriculture industry has to find new and interesting crops to fulfill the demand. Recently there have been a number of new vegetatively propagated types of *Argyranthemum frutescens* cultivations like Angelic Pink, Angelic White, Bright Carmine, Butterfly, Comet Pink, Comet White, Snow Crystal, and Summer Melody Cobbitty Daisy. As evidence by some of their names the flowers have a range of colors which include: white, pink, yellow, and a pastel-like red. The merits of these daisy-like flowers are not limited to their flower color or their tremendous floral display. One of the main reasons for their cultivation seems to be a phenomenon across the genera of *Argyranthemum* spp. and that is drought tolerance. The native habitat of many of these species helps to explain the incredible durability of these plants. That is, for many of the twenty plus species of *Argyranthemum* nativity resides within the Canary Islands (desert-tropicals.com). The climate of these islands (in particular the large island of Tenerife) can be quite variable. Apparently within the approximately two square kilometer island the climate can be a balmy 22 °C in the middle of winter with snow falling in the hills and mountains only a few kilometers away (canaries-live.com). This environment leads to the great diversity of plant life on the islands. This diversity can make it difficult to determine, which treatments would be most advantageous to apply, particularly when working with a virtually un-described species.

Given the information provided it seemed that if the plant inhabited a terrain prone to erosion (i.e. the mountains) that the seed would be buried and therefore covering the seed would be worth trying. Because the islands are volcanic in origin, some sort of acid scarification could have been trialed. However, this was ruled out because of the limited number of replications that could be trialed. Furthermore, the seed coat appeared to be permeable to water upon preliminary investigation. Other variables that would have been worthy of trial would have included a cold stratification treatment as well as some sort of investigation into potential physiological dormancy requirements. This however, would be nullified by the findings of a post-experimental literature search that turned up effective use of a 15 °C stratification treatment in collusion with a gibberellic acid treatment (Francisco-Ortega et al., 1994).

For the growth and development of the plant once germinated it might be surmised, given the typically acidic nature of volcanic soils, that there would be few limitations on elements like iron and manganese. Therefore *A. haouarytheum* may optimally grow in a low pH media. That is most growers tend to find with vegetatively propagated *A. frutescens* the optimal pH range is around 5.6-5.9. Apparently some growers may fertilize as well, as needed, with additional iron. Coordinated with a soilless media and a dryer growing environment nutritional deficiencies can easily be avoided.
Pinching and plant growth regulators can be affective on *A. frutescens* and may be similar with A. *haouarytheum*, but a thorough investigation would be appropriate before a strategy is adopted. If necessary, the rates of different PGRs recommended for *A. frutescens* are given in table 1 (BallFloraPlant).

Table 1. PPM Rates and Timing of PGRs effective on *Argyranthemum frutescens**

	B-Nine	Cycocel	Sumagic	Bonzi
Rate	1,500-3,000	750-1,000	10-20	2-5
Timing	2 weeks post transplant	See Label	See Label	Once a saleable size is attained

* Note: Some late applications can delay flowering by 1-2 weeks. Avoid applications after floral bud initiation.

There seems to be a too much variation in the story regarding flowering in *A. frutescens* to adequately address any light related floral bud initiation and development treatments. Some varieties appear to be short day plants while others are advertised as having flowers throughout the growing season.

The trials that were conducted were limited in size based on the sheer availability of materials for trial. Two trials were conducted comparing covered seed to non-covered seed. Both treatments were unsuccessful. Follow-up tetrazolium chloride examinations did not illustrate the characteristic red coloration associated with the respiring tissue of a living organism. In fact, close inspection illustrated that the seeds were a brown to tan coloration, which leads one to believe the seedlings were dead. Therefore, there must have been some sort of problem that rendered the seeds in viable.

There are a couple of explanations that might be given for the poor viability of the seed. One of the first questions would revolve around the storage and shipping practices. If the seed was allowed to sit outside in an open-air environment the respiration rate may increase and lower the long-term storability of the seed. An alternative might be that the seed had just been stored too long. By an interesting stretch it might be nice to know something about the environment in which the mother plants were grown. According to the Francisco-Ortega J et. al. (2000) study many of the endemic species of the Canary Islands are out crossers. Therefore, if the diversity of plant life immediately surrounding the mother plants is low, chances are the incidence of self-pollination may offset the incidence of as much viable seed (with self-incompatibility plants).

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