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**Canna Lily Sales Face A Chaotic Future**

**By Pat Malcolm**

Many agricultural plants that are reproduced by vegetative division face a mysterious problem that results in a decline in the clone vigor, and most farmers and nurserymen claim that the plant crop has "run out." A number of factors adversely affect the plant clone to the point that it becomes unproductive and uneconomical to continue growing.

A technique has been discovered that has revitalized the agricultural crops such as strawberry, raspberry, blackberry, sweet potato, banana, and a newcomer: the canna lily. This flower bulb or rhizome is facing present and future disastrous consequences unless governmental regulatory steps are taken to correct the dilemma facing the canna lily industry. Since the 1940s, canna lily rhizomes have been continuously commercially grown from the original stock that could easily be harvested in the fall, packaged and resold by Dutch mailorder companies (few exist today, most went bankrupt) as named varieties. Commerce developed so extensively around the success of selling millions of these rhizomes that some farmers began to cultivate canna lilies in fields, planted in rows like corn, exclusively for the Dutch mailorder companies. For some canna growers in the states of Arkansas, Oklahoma, and Texas, the financial rewards were so excessive, that they began to plant hundreds of acres as an exclusive agricultural crop. Because of a shift in business retailers a decade ago, when the canna lily sales were shifted away from packaged rhizomes of mailorder companies to the potted, growing, blooming canna lilies for spring and summer sales by boxstores such as Walmart, Lowes, and Home Depot. The boxstores bought their potted products mainly from contracted nursery growers, purchased as dormant, canna lily rhizomes from the exclusive field grown canna farmers who originally supplied the mailorder companies just a decade ago. This dramatic change from selling dormant canna lily bulbs to trusting mailorder customers to the customers at box stores, who observed the plant flowers and leaves before purchasing, has made it necessary for box stores to reject many of the inferior potted canna lilies, that had over the years declined (run out) to a state of unpredictability. This rejection had not occurred to mailorder customers who were buying an unseen, untested rhizome with a "wish" that it grow into that beautifully-pictured dormant plant that was packaged for sale in the mailorder catalog.

Growing canna lilies for retail sale has now become a crisis much like the one that threatened the growers of strawberry plants, raspberry bushes, blackberry bushes, and banana trees years ago.

## Canna Lily Sales Face A Chaotic Future

The canna commercial growers proceeded each year to set aside part of the current canna rhizome crop to use as seed for renewal planting the following season. As growing continued each year, certain genetic defects and susceptibilities began to appear and accumulate and grow more seriously each year. The canna farms continued regrowing and selling more and more diseased and mutated canna rhizomes each year, until they can be viewed with horror in full bloom and the distorted flowers and ratty leaves by the contrast the buyers at the stores and the retail customers. Many of these canna varieties were originally grown and sold as true to name varieties. After many decades of vegetative reproduction, the canna crop has become a mixture of harmful and inferior mutations susceptible to many diseases, insects, nematodes, and flower abnormalities. Commercial growers of cannas practiced a technique that they called "roguing" that involved searching through rows of cannas in full bloom and discarding those that appeared to vary visually from the desired variety intended to be grown. This technique only worked partially, because many of the weaknesses and inferior qualities could not be visually determined, such as canna rhizomes that failed to bloom at the time the farmer

decided to "rogue" the canna fields. Additionally, the genetic factors that were mutated into the rhizomes that made the plant susceptible to diseases and other impediments would not be seen, since the commercial fields were normally sprayed effectively to remove pests; however, the normal home gardener does not expect to buy a plant that must be continuously sprayed with fungicides, nematode treatments, or for insects, and as soon as their potted plants are placed in the home garden, the leaves are exposed to the assaults of the leaf rollers, and the webworms, and the rhizomes become infested with the ravages of the nematodes. This disenchantment of retail buyers and admirers of cannas is expected to drastically curb the future purchases of canna lilies.

Plant decline in such agricultural products as strawberry plants, raspberry plants, blackberry plants, sweet potato vines, and banana trees has been approached and largely overcome by the process of tissue culture. Plant scientists have discovered that the rapidly growing tip of a plant called the "apical meristem," can be removed and placed into a tissue growing medium. The plants from which the apical meristems are removed are carefully selected to reproduce and must conform to the original desirable characteristics of the parent cultivar. The apical meristem grows so rapidly that by carefully selecting the few cells at the tip, virus and other mutation problems are left behind to result in a new plant that is vigorous, disease-free, and fast growing.

This group of cells grows into a complete plant with a shoot and root system intact, that are collectively called "nuclear stock mother plants." These "mother plants" are used to divide vegetatively from which commercial, private sector nurseries are permitted to sell certified plants to farmers that are free of virus, bacteria, and other diseases.

As of August 1, 2006, no suggestion has been made to restore the canna growing industry from its present chaotic disposition by the use of tissue culture technique. Tissue culture could restore the reputation of marketing and production of canna lily rhizomes to a satisfactory acceptance level of approval by both wholesale and retail customers.

Patrick A. Malcolm, owner of TyTy Nursery, has an M.S. degree in Biochemistry and has cultivated berry plants for over three decades.

<http://www.tytyga.com>

## **Web Review Of Victorian Canna Hybrids**

**By Pat Malcolm**

Great progress began in 1870 in the hybridizing of the canna lily by a combination of genetic materials from the wild canna species that had been collected from around the world, leading to the production of the 'Madame Crozy' cultivar. A great interest developed in canna lilies as a colorful garden plant that previously had been grown chiefly for the fast growing, tropical foliage, since the wild canna blooms were mostly small and uninteresting. The stockpile of collected, canna wild species were again used to back-cross and intermingle with the celebrated hybrid, Madame Crozy.

The bright bazaar colors and the tropical look was excitable and exotic for the gardeners of the Victorian Age. Several countries including Italy, Germany, France, and England became actively involved in canna hybridization. Great efforts were made to codify the canna lily as an inexpensive, brilliantly flowered plant with the tropical, fast growing, garden choice to plant everywhere, and as often happens, to the unstoppable point of being brashly overdone.

A few of the Victorian Era canna hybrids are still grown today, despite the general opinion of most canna lovers, that they should be buried with the past and forgotten except for the historical contribution that elevated the wild native hybridization canna combinations that created new directions for color and tropical leaf development to explore.

The naming of the Grand Opera Series of Canna lilies, was, a flower hybridizer's colorful idea of associating an Italian classical musical treasure— The Opera— with a group of hybrid flowers. These new canna hybrids, likewise, caused a sensation in the garden lovers world, and the possibility of the commercial production of canna rhizomes made it possible for gardening Italians to reasonably afford to plant the brightly colored tropical leaved plants in their yards. The brilliant idea of associating the beloved Operatic titles with colorful tropical leaves with stalks of glowing flowers worked well. These Italian canna introductions were planted and grown throughout much of the European continent. The Grand Opera Series of canna cultivars were tagged with names of the well known operatic performances of Aida, La Boheme, La Traviata, Madam Butterfly, Rigolletto and Der Rosenkavalier (German.)

The German Canna hybridizer, Wilhelm Pfitzer, had his own favorite canna names including, Stadt Fellbach. Most of Pfitzer named cannas were given vivid and specific color names such as: Crimson Beauty, Primrose Yellow, Salmon Pink, and Chinese Coral. In addition to adding clear colors of pastels, the Pfitzer canna grew into dwarf plants and rarely grew taller than 3ft. This dwarf feature was very attractive for small metropolitan gardens, where space was limited, and most of the Pfitzer canna cultivars readily produced seed that might grow into even better canna cultivars with that personal touch for the backyard gardener.

Italian interest in hybridizing canna lilies extended even into the Italian Monarchy reigns of King Emmanuel II and his son, King Humbert. The Yellow King Humbert canna is believed to have been

renamed by an English gardener as Richard Wallace.

The noted French Hybridizer in 1870, Luther Burbank, the famous American Botanist, noted in his book, *Flowers*, published in 1921 that the Madame Crozy canna introduction laid the foundation for a canna hybrid industry to rapidly evolve, since the flowers were colorful and large and all existing

flowers of known wild canna species had produced small insignificant flowers. All interest in growing canna as a garden subject had previously come from an eclectic interest in the exotic tropical leaves, not from the flowers.

Luther Burbank imported the Madame Crozy canna into California, where he back-crossed it with *Canna flaccida*, an American S.E. Wild native canna, that grew in the salt marshlands of Georgia. That improvement named the 'Tarrytown', that resulted as a back-cross of the *Canna flaccida* on the Madame Crozy cultivar won a prize at the Buffalo, NY Flower Award. That excellent canna cultivar dropped its older flowers as they matured, leaving the cluster of blooms looking fresh and vibrant. Luther Burbank went on to develop several white flowered canna hybrids and another bi-color named for himself, "Burbank." Burbank's prizewinner, Tarrytown was distributed through a mailorder seeds man, J.C. Vaughan from Chicago, Il. and renamed as, 'Florence Vaughan; the wife of J.C. Vaughan. The Florence Vaughan canna is an excellent cultivar, lemon yellow with creamy-orange splotches and dots, still sold by many mailorder catalogs today and can be found flourishing in moist ditches where it has become naturalized in many locations of the South.

Other Victorian type canna cultivars that still exist and are listed in mailorder catalogs are: Rosemund Cole, a bi-color, orange and yellow green -leaved canna; Black Knight also sold as Ambassador, a deep crimson flower, a sparse bloomer; City of Portland, small pink flowers atop 6ft ratty leaves of green; and firebird, as orange-red small flowered orphan that has been expelled from most home gardens.

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