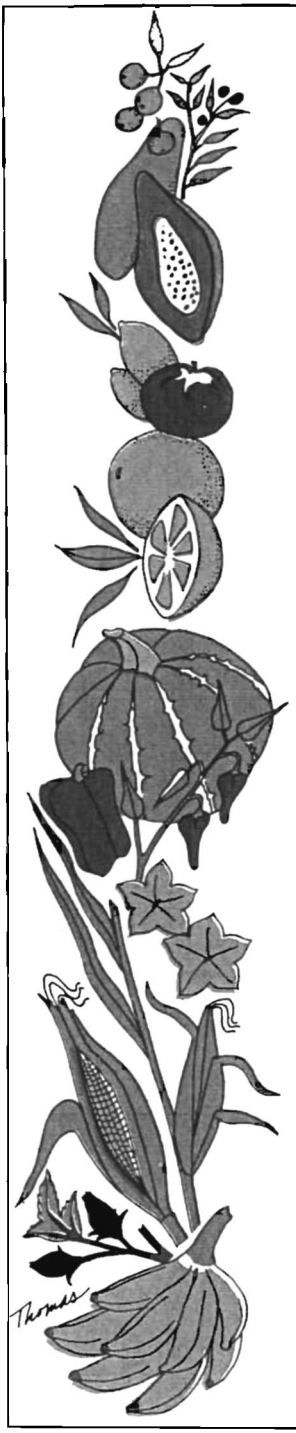

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CARIBBEAN EXPORT INDUSTRY FOR *HELICONIAS* - PROBLEMS AND PROSPECTS

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ABSTRACT

An assessment of the heliconia industry in the Caribbean was obtained through a survey of the major growers in Barbados, Guyana, Jamaica and Trinidad and Tobago using a pre-tested questionnaire. The objective of the survey was to establish the status of the industry and to identify technological approaches used in production and postharvest management. Approximately 90% of the growers surveyed cultivated less than one acre, the remaining 10% cultivated from 5 to 30 acres. The low levels of fertilizers and pesticides used by the smaller growers were associated with lower yields and lower quality blooms which were sold mainly on the local market. Larger growers used a higher level of technological inputs and were involved in the export trade mainly to Canada, USA and Europe. Among the major problems which limit the marketability of this species are short shelf life of some varieties and generally low tolerance of blooms to cold temperatures during transport from grower to market. The problems and prospects for the export industry for heliconias in the Caribbean are examined.

INTRODUCTION

The export of cut flowers has been recognized as one of the most promising potential growth areas for horticultural exports from the CARICOM region. One of the main reasons is that there are many exotic and attractive species which exist naturally in most Caribbean islands. Additionally, climatic conditions allow year round production and enable Caribbean countries to produce tropical plants for export. The proximity to markets and the existence of well developed air links between North America, and Europe and most of the islands are other definite advantages in the floriculture export trade. It is perhaps the recognition of these advantages that has led many CARICOM countries to include floriculture in their diversification programs. The major countries at present involved in floriculture exports are Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago. Despite this interest, the floriculture sector in the English speaking Caribbean is still underdeveloped and forms a small percentage of the total horticultural export from CARICOM.

CARICOM CONTRIBUTION TO WORLD TRADE IN CUT FLOWERS

The world trade in cut flowers has shown an increasing trend from 1984 to 1988 (Table 1). During the period 1984 to 1988 the value of cut flower trade had increased almost 100 %. The contribution of the area which included the Caribbean (other DGCS) had a small but steady increase.

Table 1. World trade in cut flowers (US$M).

YEAR	1984	1985	1986	1987	1988
VALUE	1253	1258	1682	2164	2455
ALL DGCS*	280	283	326	380	477
OTHER DGCS**	234	231	260	295	360

* DGCS Developing countries/areas
**Other DGCS includes the Caribbean
Source: Dynamics of exports from developing countries (1984-1988). International Trade Centre (1990).

According to a floriculture study done by Comite de Liason Europe - Afrique - Caraibes - Pacifique pour la Promotion des Fruits Tropicaux, Legumes de contre-saison, Fleurs, Plantes ornamentales et Epices (COLEACP), in 1991, floricultural exports from Central America and the Caribbean region (including Florida) amounted to US$346 million and showed an increasing trend. The value of the exports from African, Caribbean and Pacific countries amounted to only US $7.9 million, the majority of which worth US$ 5.4 million went to the USA and US $2.2 million to the European Union. The study indicated that the ACP countries could improve their share of the market particularly to the European Union. This region is particularly attractive because of its large population, approximately 353 million people.

CUT FLOWER IMPORTS INTO THE UNITED STATES

The estimated imports of tropical cut flowers into the United States from 1986 to 1989 also showed an increasing trend (Table 2). In 1986, there was no recorded import of heliconias into the United States of America. However, by 1987, heliconia imports were valued at US $ 0.1 million and continued increasing so that by 1989 the value of imports stood at US$ 0.5 $ million. In contrast, in 1989, *Dendrobium* orchids constituted more than 50% of the total import value of tropical cut flowers followed by gingers with approximately 24%.

Table 2. Estimated imports into the United States of tropical cut flowers (US$M).

PRODUCT	1986	1987	1988	1989
Anthurium	0.0	0.2	0.3	1.2
Ginger	0.1	0.2	2.0	3.0
Heliconia	0.0	0.1	0.2	0.5
Dendrobium Orchid	3.3	4.2	6.1	7.0
Protea	0.3	0.5	0.5	0.5
Bird of Paradise	0.1	0.2	0.4	0.6
TOTAL	3.8	5.4	9.5	12.8

This paper looks at the problems of the heliconia industry in the English speaking Caribbean with respect to production, marketing and postharvest management, and examines the prospects. A survey was conducted in Barbados, Guyana, Jamaica, Trinidad and Tobago. The major growers and exporters were interviewed using a pre-tested questionnaire. The results of this survey would be looked at in the process of examining the problems and prospects of the industry.

THE HELICONIA INDUSTRY IN THE CARIBBEAN

Commercial potential

The genus Heliconia belongs to the Heliconiaceae family and is closely related to bananas. The blooms are erect or pendulous terminal inflorescences composed of two or more bracts. The origin of this plant species has been traced to the tropical and sub-tropical rain forests of South America. It should be noted that the Caribbean region is within the area of origin.

It is believed that in the jungles of South and Central America there are probably more than 400 heliconia varieties (Berry, 1991). Of this number, only a few are grown commercially and the more important of these are shown in Table 3. Several criteria can be used to establish commercial potential. These include:

(i) Appearance - size and intensity of color

(ii) Rate of production of blooms

(iii) Year round production

(iv) Post harvest life - longevity

(v) Ability to withstand handling and shipping

For these reasons many varieties do not meet commercial criteria and therefore remain collectors items. Slightly different criteria may be used by some growers to determine a commercial bloom.

The post harvest retention of color and shape of the showy and attractive inflorescences of the heliconia contributes to its growing potential as a commercial cut flower.

Table 3. Important commercial heliconia varieties.

Heliconia sp	Common Names
H. psittacorum	Golden Torch Sassy Kaleidoscope St. Vincent Lady Di Nicoriensis
H. chartacea	Sexy Pink
H. chartacea purpurea	Sexy red
H. bihai	
H. caribaea	
H. jacquinii	
H. rostrata	
H. stricta	
H. wagneriana	
H. latispatha	

CURRENT STATUS OF THE HELICONIA INDUSTRY IN THE CARIBBEAN

In the survey conducted from March to August 1993, twenty-seven (27) heliconia producers in Barbados, Guyana, Jamaica and Trinidad and Tobago were interviewed. Table 4 shows the number of respondents in each island and the estimated acreage cultivated by each grower. This is by no means an exhaustive list but these growers were identified as the major producers and exporters. In Trinidad and Tobago these growers were obtained from the local Flower Exporters Association (FLEX) and the Extension Division of the Ministry of Agriculture Land and Marine Resources. The Guyana Marketing Corporation and the Ministry of Agriculture identified the Guyanese farmers

while Caribbean Agricultural and Research Institute (CARDI) Barbados did the same for Barbados. In Jamaica, Jamaica Promotions (JAMPRO) was responsible for providing the names of the growers and exporters there.

The survey was aimed at establishing the status of the heliconia industry in the English speaking Caribbean and identifying technological approaches used in production and postharvest management of the crop. Information was collected on various aspects including:

-size and source of planting material
-varieties grown
-pest and disease incidence
-fertilizer application
-harvesting techniques
-marketing
-export
-storage and postharvest treatment
-problems during production, postharvest and marketing

Despite the clear potential shown, there was a paucity of documented information on levels of trade. This was particularly so in the case of Jamaica where the different microclimates facilitate the production of several tropical and sub- tropical blooms which compete successfully with heliconia. Due to the small quantities exported relative to that of other blooms, heliconia was considered a minor export bloom and data on export and production were recorded together with other minor blooms . However, its growing importance has since been clearly recognized and both Jamaica and Trinidad and Tobago have decided to record heliconia export data separately from 1993 and 1992 respectively.

Production

Commercial heliconia production in the countries surveyed was found to be a viable activity. Similar varieties were produced in all 4 countries although the common names were different for some varieties. Export trade in all areas consisted of both small and large varieties. Blooms were sold not only locally, mainly to flower shops, but also to extra regional markets.

Table 4. Major heliconia growers surveyed and acreages cultivated.

Country	No of major growers surveyed	Total estimated acreage under cultivation
Barbados	4 L 1 S 3	26
Guyana	2 L 1	611/2
Jamaica	4 L 2 S 2	50
Trinidad & Tobago		
Trinidad	13 L 1 S 12	32
Tobago	3 L 0 S 3	1

L (large) >5 acres
S (small) <5 acres

Exports

Despite the general increases reported in the cut flower trade previously observed in both the World Trade (Table 1) and the imports into the USA(Table 2), available data from Trinidad, Barbados and Guyana indicate that their share in the market place is either decreasing or stagnant. The main export markets in order of importance were Europe, England, Canada and the USA.

Trinidad

Although the data from the Trinidad Export Development Corporation indicated that there were new markets for blooms from Trinidad in 1993, (Antigua, Montserrat, Switzerland and West Germany), the total quantity exported in 1993 decreased by approximately 22% from the 1992 figure (Table 5). Major exporters surveyed identified several production problems which contributed to the decline. Major ones are as follows:

(i) Increased incidence of moko disease which severely affected the cv Iris.

(ii) Low water availability during the dry season which restricted year round production. Increased production in the rainy season coincided with the summer months in which there is a low demand for blooms.

(iii) General low demand for psittacorums of which there is the perception of low shelf life. Nevertheless, the largest producer maintained a successful trade in psittacorums with long lasting varieties.

Table 5. Export of heliconias (kg) from Trinidad & Tobago 1992 and 1993.

COUNTRY	1992	1993
Canada	1054	345
USA	153	60
Montserrat	0	3
Antigua	0	26
Switzerland	0	1
W. Germany	0	1
TOTAL	1207	436

Barbados

Similarly, Barbados experienced a significant decrease in exports of heliconias between 1990 and 1993. There was an increase from 1991 to 1992 but a significant decrease from 1992 to 1993. The data reveals a fall in the export of psittacorums (Table 6) and "heliconias," which are large varieties as indicated by the Trinidad exporters.

Table 6. Export of heliconias (number of blooms) from Barbados 1990 - 1993.

	1990	1991	1992	1993
Heliconia	7,081	10,378	14,810	5,697
H.Rostrata	720	0	0	12
Psittacorums	4,572	1,955	2,642	1,970
Heliconia leaves	189	0	0	0
H.Wagneriana	0	0	110	92
Golden Torch	0	0	0	10
TOTAL	12,562	12,333	17,562	7,781

It should be noted that Barbados also found new markets for its cut flowers, mainly in Europe, Norway and Sweden (Table 7). From 1990 to 1992 the total value of cut flower exports from Barbados increased.

Table 7. Export of cut flowers and foliage from Barbados 1990-1992 (Bds $).

Country	1990	1991	1992
Canada	111,016	98,213	73,446
Finland	47,033	53,985	95,922
Germany	3,568	0	0
Norway	0	946	0
USA	198	0	0
Sweden	0	22,209	18,085
TOTAL	161,815	175,353	187,473

Guyana

The figures for Guyana (Table 8) indicate total cut flower exports. However, the survey revealed that there was only one major cut flower exporter from Guyana approximately 80% of whose exports consisted of heliconias. There was a significant increase from 1989 to 1990. There were no recorded exports for 1991 but the amount exported in 1992 did not decrease from the 1990 figure.

Table 8. Export of cut flowers from Guyana 1989-1992.

YEAR	KG
1989	381.82
1990	1745.45
1991	0.00
1992	1745.45

PROBLEMS

After discussions with the heliconia growers, several problems were identified as important to the industry . The most significant among them were:

(i) Bloom quality
(ii) Distribution costs
(iii) Marketing
(iv) Shelf life
(v) Nomenclature

Bloom Quality

A good quality bloom is one that has no blemish, is well formed and is uniform in color. It was pointed out at the COLEACP seminar held in Trinidad in May 1994, that the quality of a large percentage of the flowers produced in this region is below the required standard for the export market. Unsuitable production practices, for example inadequate or no fertilizer application and pest control, could be major contributors to this unacceptable quality.

Of the heliconia growers interviewed, 61.5% of them have never had a soil analysis done and 81.5% applied some degree of fertilizer. Applications range from a handful at planting to five bags (approximately 500 lbs) spread over 5 times per year.

The larger growers are the ones who export and the survey showed that they paid more attention to pest, disease control and plant nutrition. Pests and diseases e.g. borer, bacterial wilt, moko and fungus, were more a problem for the small grower than the larger ones. While 82% of the smaller growers indicated that they had pest and disease problems only 20% of the larger ones did. Pests and diseases could also reduce the quality of the blooms by discoloration or distortion. The large growers were also more likely to irrigate during the dry season to maintain production . The smaller growers mainly targeted the local markets and quality did not seem a high priority.

Distribution costs

One major problem highlighted by 95% of the exporters surveyed was the problem of the high cost of distribution. Information from the Market Study For Tropical Flowers in the United States done in November 1991 by the International Trade Center, indicated that the freight costs by road is generally less than 1/3 of bulk air freight costs. Approximately 70-75% of cut flower imports is routed through Miami, which is recognized as the center for the United States distribution. Flowers are then trucked to their final destination.

The study further pointed out that trucking companies in Miami generally operate with custom-designed temperature-controlled refrigerated trucks from modern and fully temperature controlled distribution centres. However, the majority of the floricultural imports consists of temperate flowers such as carnations, roses, and chrysanthemums. The quality of these flowers is maintained at 1 C - 2 C. All tropicals will incur damage at these low temperatures. The temperatures are generally set to accommodate temperate blooms and tropicals are given a low priority.

All heliconia exporters indicated that they ship their heliconias in corrugated cardboard boxes. Even with additional insulation, heliconias suffer cold temperature injury. The recommended storage temperature for heliconias is 15-20 C. Exporters therefore ship by the costly air route directly to the importer. The high cost of distribution significantly

increases the price of flowers to the retailer and ultimately the consumer.

Marketing of heliconia blooms

The survey data indicated marketing of blooms as a major problem, especially for the smaller growers. While these smaller growers were more or less confined to the domestic market, the larger producers had well established niche markets in foreign countries.

Burch (1992) reported that market opportunities for heliconias are limited to those existing highly specialist and professional producers who are able to provide a continuity of supply of high quality flowers.

A market study done in 1991 of the United States markets by the International Trade Commission indicated an over-production of most species of heliconias. The report indicated that given the high cost of distribution by air, and the major postharvest handling problems, extremely limited opportunities exist for any new entrant into the marketplace.

Shelf Life of heliconia varieties

There has been some concern expressed over the keeping quality of a number of heliconia varieties. The literature and the survey have shown that the natural shelf life of some varieties can be as little as three days e.g. *H.rostrata, H. stricta*, while others can last up to three weeks e.g. *H. wagneriana, H.chartecea*. The shelf life of these varieties can be shortened by unfavorable conditions during production and poor shipping and storage conditions.

Nomenclature

The survey revealed that the same variety may be called by different names in each island, as pointed out earlier. In the interest of the survival and expansion of the industry, it is desirable that the nomenclature be standardized. Growers now mostly use the nomenclature as set out by Berry (1991).

PROSPECTS

Markets

Solving the problems associated with marketing would lead to improved prospects for the heliconia industry. Heliconia growers should embark on sales promotion within the importing countries. It was the view of the COLEACP consultant that developing countries could substantially increase their market share by improving production and marketing techniques, sourcing better information on markets and contacts with importing countries.

Market strategies to be considered when attempting to increase heliconia sales include:

(i) bouquets
(ii) new varieties
(iii) collective marketing

Bouquets

Selling heliconias in bouquets with other tropical blooms has been recommended by some cut flower importers. Buyers from France and Germany at the COLEACP seminar at the Trinidad Hilton in May 1994, indicated that they would be more inclined to buy if foliages were sold along with the heliconia blooms. A range of products are apparently more attractive to the buyer.

New varieties

The possibility also exists of breaking into the market place with new varieties. It is anticipated that smaller volumes of a wide range of varieties will improve the marketability of heliconias. The varieties now exported have been in the market place for a long time and new exotic varieties would increase the appeal of the species.

Collective marketing

The Caribbean Development Bank in their study on the regional horticulture sector in Caricom States in 1987 recommended that both national and regional Flower Producers Associations be formed. These associations would be charged with establishing uniform quality standards for export and maintenance of members' accounts and records that reflect the quantities of flowers/plants received for export.

The growers themselves apparently recognized the importance of a unified regional approach to dealing with their problems. The Caribbean Floriculture Exporters Association was formed at the International Horticulture Trade Show, PLANTEC in Frankfurt Germany in 1993. The exporters realized that they had common problems in selling their blooms and that they needed to adopt a regional approach to these problems in marketing, production and promotion. The stated objective of the association was to enhance export marketing of regional cut flowers.

Since that inaugural meeting, the group has never met. The principal parties involved explained that it was too expensive to meet in the Caribbean since they each came from a different island. It is important that Caribbean growers cooperate so that they can attempt to solve some of their problems.

Research Needs

A method has to be found to protect tropical flowers from cold injury associated with the refrigerated road transport system upon which the USA temperate cut flower industry is based. Better packaging methods would be one of the areas to be examined. This would serve to reduce retail prices and possibly improve sales of heliconias. In Germany the trend is now to transport blooms in trucks with twin cabs each with a different temperature. Both temperate and tropical blooms can then be transported in the same truck.

As the survey showed, heliconia growers have no documented guidelines to follow for the production of the crop. It is clearly seen that fertilizer application and pest and disease control measures are done on an ad hoc basis. Research is therefore needed to establish the agronomic practices and produce technological packages for the efficient production of heliconias.

Continuous research should also be done to identify blooms with good lasting quality . Short shelf life has been listed as one of the limiting factors to the expansion of the industry. It is therefore important to develop blooms with an acceptable lasting quality. The criteria used by Costas Flores are probably quite adequate for commercial bloom selection.

CONCLUSION

The overall picture for the Caribbean heliconia industry could be greatly improved if Caribbean growers enhance their marketing techniques, obtain better information about markets and embark on promoting heliconias within importing countries. Research would lead to the selection of suitable cut flower types for export and the production of data on the cultural requirements of the crop.

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