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Comparative Economics and Qualitative Studies among Different Dry Flower Products

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Abstract: ***Fresh flowers play an important role in our day to day life, but if flowers before fading, are subjected to proper drying techniques, may also provide extra source of income throughout the year. Dry flower products have good demand both in domestic and foreign markets. India, due to its diverse climate and vast range of vegetation may play a keen role in foreign exchange earnings. USA, Japan and Europe have huge demands for dry flower products which are prepared at low cost but are purchased at higher prices due to handicrafts and novel designs. The use of dry flowers in making of diverse products enhances the appearance and beauty of handicrafts [1, 10]. In this era of climate change, dry flower products can be prepared throughout the year and may be a source of extra income to the farmer family. Left over fresh flowers with the incorporation of house hold waste materials can be easily converted into diverse valuable products on drying [8, 9]. Presently consumers are more eco-conscious and prefers eco-friendly and biodegradable products, and dry flowers are a good alternative [4, 9]. A wide ranges of wild/ unutilized/ underutilized plant species can be dried through different drying methods and can commercially utilized for making various dry flower products [2,3]. Dehydration technology helps in maintaining original colour and shape of flowers for long term utilization with a little care. With the sustainable help of other family members or rural women or physically challenged people, farmers can easily generate 1.75 times to 6.23 times profit.***

Keywords: Dry flower products, dehydration, eco-friendly

1. Introduction

India stands first in dry flower export owing to the availability of variety of plants. Dry flower does not mean only flower parts, but also includes dried shoots, seeds, barks, weeds and grasses. Export of dried flowers and plants from India is more than Rs 100 Crore per year [6]. Drying flowers at home is an inexpensive and effective way to add a special touch to any decor. Dry flower products are cheaper to produce, expensive to sell and long lasting, if managed scientifically [7]. Dried flowers are widely used to make handmade paper, photo frames, boxes, books, lampshades, candle holders, jute bags, wall quilts, topiary, cards and several gifts [8]. The use of dry flowers in making of these products enhances the appearance and beauty of these products. Beside this, it also makes us to remember the anniversaries and other related occasions. There is a need for value addition in floricultural products through processing, packaging, and supply chain management so that farm incomes expand and employment is generated. So, a comparative economics and qualitative study among different dry flower products was conducted with the involvement of household waste material.

2. Materials and Methods

The present investigation was conducted at Dry flower Laboratory, Department of Horticulture (Vegetable and Floriculture), Bihar Agricultural University, Sabour during 2015-2018. Air drying, glycerin drying, hot air oven drying method, microwave drying, press drying, silica gel drying and water drying were applied in different flowers, leaves, grasses, weeds and other plant parts. From the best dried method, fifteen eco-friendly dry flower products like vases, decorative pieces, landscapes, figures and pictures, simple or laminated greeting cards, birthday caps, dry flower arrangements, pen stand, photo frames, book mark, wall quilt, paper weight, coaster set, table mat set and sceneries of different sizes were made and then on the basis dry flower market their benefit cost ratio were estimated (Plate 1).

3. Results and Discussion

The results depicted in Table 1 displayed the estimated benefit cost ratio of different value added dry flower products like vases, decorative pieces, landscapes, figures and pictures, simple or laminated greeting cards, birthday caps, dry flower arrangements, pen stand, photo frames, book mark, wall quilt, paper weight, coaster set, table mat set and sceneries of different sizes. The results depicted that minimum time of 10 minutes was spent in making one piece of book mark or birth day cap or vase, whereas maximum time of 180 minutes was taken to prepare 8” x 10”scenery with fine work of dry flower petals pasting. However in terms of raw material consumption the least cost of material consumption was observed in making a book mark and birthday cap (4 rupees), whereas maximum cost (300 rupees) was consumed in making 8” x 10”scenery with fine work. Depending on the national and international demand, the rate of different dry flower products varied from Rs. 20 to Rs.

2500 and similarly the B:C ratio varied from 1.75 to 6.23. B:C ratio for making paper weight was 1.75; for book mark, coaster set, birthday cap, table mat, wall quilt, pictures and greeting card B: C ratio was 2.0, for photo frames B: C ratio was 2.22, for vases B: C ratio was 2.50, for dry flower arrangements B: C ratio was 2.63, for landscapes or decorative piece B: C ratio was 2.70, for making simple designed scenery of 8x10'' size it was 3.64 and for making finely designed scenery of 8x10'' size was 6.23. The results corroborates with previous findings of [8] and [1]. This may be due to more utilization of house old waste as raw material of the product, thus lowering the input cost of the product. Moreover, the management factors may also be responsible for deciding the B:C ratio of the product.

The data displayed in Table 2, interpreted that minimum flower colour deterioration in terms of anthocyanin percentage was in larkspur flower (2.82%) followed by in Ixora flower (11.13%) and in bottle brush flowers (15.31%), whereas maximum anthocyanin was deteriorated in flowers of Sita ashoka tree (43.09%) followed by salvia flowers (34.45). Flowers of corn flower and dendrobium were found with medium anthocyanin deterioration (15.45 and 21.80, respectively). Similarly, in table 3, minimum flower colour deterioration in terms of total carotenoid percentage was in sunflower (1.34%) followed by in cassia flowers (8.30%), whereas maximum anthocyanin was deteriorated in flowers of Zinnia (44.81%). Other flowers showed medium total carotenoid deterioration values like annual chrysanthemum with 11.13% deterioration, marigold with 16.14% deterioration, calendula with 19.86% deterioration and yellow Gulmohar with 20.04% deterioration. Similar results were also found with [8]. This may be due to genetic reasons or the existing location of the pigment in cell.

4. Application of Research

With the findings of benefit cost ratio, a diverse range of ecofreindly products can be produced as per the market demand, profitabilty and availability of raw material which will ultimately absorb the financial crisis shock especially, during crop failures in open field conditions.

5. Conclusion

This business can efficiently rum with proper policy actions, enthusiastic ideas, efficient management and relevant market linkages. If passed through constraints, can change the pattern of livelihood of poor people.

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Plate 1: Diverse dry flower value added products made with house-hold waste material utilization

Sceneries with simple and fine designs (8 x 10 inch size) Paper weight


Book mark


Pen stand


Dining table mat


Coaster set for dining table


Birthday Cap


Greeting card


Dry flower arrangement


Wall quilt


Photo frame


Flower Vase


Decorative piece/ landscape


Pictures

Table 1: Estimated benefit cost ratio of different value added dry flower products

Dry Flower Products	Approximate Input Cost /Individual Product (Rs.)			Approximate Rate of dry flower product per piece basis in dry flower market (Rs.)	Estimated Benefit cost ratio
	Approx. Manpower cost as per time spent (Rs.)	Approx. Time Spent (minutes)	Approx. cost of raw material (Rs.)		
Sceneries with simple designs (8" x 10")	25	45	150	800	3.64
Sceneries with fine work (8" x 10")	101	180	300	2500	6.23
Paper Weight	17	30	40	150	1.75
Book Mark	06	10	04	20	2.00
Pen Stand	08	15	07	60	4.00
Table Mat (1 pc.)	17	30	13	60	2.00
Coaster Set (6 pcs.)	25	45	10	70	2.00
Birthday Cap	06	10	04	20	2.00
Greeting cards	17	30	13	60	2.00
Dry Flower Arrangement	08	15	30	150	2.63
Wall Quilt	25	45	10	70	2.00
Photo Frames	17	30	10	60	2.22
Vases	06	10	34	100	2.50
Decorative pieces/ landscape	17	30	20	100	2.70
Pictures	25	45	50	150	2.00

Table 2: Quality assessment dry flower products on anthocyanin deterioration basis

Flowers	Anthocyanin on fresh weight basis (mg/100g)	Anthocyanin on dry weight basis (mg/100g)	% Flower colour deterioration
Larkspur	8.87	8.62	2.82
Corn Flower	2.46	2.08	15.45
Salvia	4.79	3.14	34.45
Bottle Brush	7.51	6.36	15.31
Sita ashok	4.92	2.80	43.09
Ixora	5.30	4.71	11.13
Dendrobium	7.43	5.81	21.80
SEM	0.09	0.07	----
CD	0.28	0.20	-----
CV	2.68	2.40	------

Table 3: Quality assessment dry flower products on total carotenoid deterioration basis

Flowers	Total carotenoid on fresh weight basis (mg/100g)	Total carotenoid on dry weight basis (mg/100g)	% Flower colour deterioration
Amaltash	85.88	78.75	8.30
Yellow Gulmohar	82.88	66.27	20.04
Marigold	85.49	71.69	16.14
Sun flower	64.82	63.95	1.34
Annual Chrysanthemum	64.34	57.18	11.13
Callendula	60.73	48.67	19.86
Zinnia	42.60	23.51	44.81
SEM	1.19	0.85	---
CD	3.63	2.59	----
CV	2.96	2.42	----