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## Floriculture in Jammu and Kashmir: Performance, problems and prospects

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### Abstract

Floriculture has emerged as an economically viable diversification option in the Indian agribusiness and has captured the interests of many entrepreneurs into agriculture sector in recent times. The domestic industry is growing at an impressive annual rate of 7-10%. Apart from cut flowers and loose flowers, value added products like dry flowers and foliages, essential oils, nutraceuticals, natural colours, etc. are gaining an uptrend. It is estimated that 248.41 thousand ha area is under flower cultivation in 2014-15 and is concentrated mainly in Tamil Nadu, Andhra Pradesh, Maharashtra and West Bengal. The floriculture in J&K has increased tremendously, which is evident from the increase in area from 255 ha in 2015-16 against only 80 ha in 1996. The major problems faced by J&K growers in the production of flowers were non availability of hi tech production & propagation structures, Lack of knowledge of current advances of flower production, lack of knowledge about diseases, insect-pests and their control method, Lack of knowledge about floriculture schemes, lack of exporting agencies, middlemen/agent's huge share and high cost of inputs.

**Keywords:** Cut flower, loose flower, problems, prospects and Jammu region

### Introduction

Floriculture is an activity with immense potential for generating remunerative self-employment among small and marginal farmers and earning of foreign exchange. Floriculture is getting attention globally due to change in the lifestyle of people, concern for environment, conscious efforts towards greening and better purchasing capacity of people. The natural worth of rich biodiversity of ornamentals provides countless opportunities to harness their potential. A new generation of growers is coming forward to employ modern technology for maximizing production and offer quality produce for consumer acceptability, thus fetching a better price. It has emerged as a lucrative profession with the much higher potential for returns compared to other agri-horticultural crops. The aesthetic value of flowers and ornamental plants, their use in social events, overall satisfaction in working with them and high income generating power are attracting modern entrepreneurs to invest money in the floriculture industry. Due to urbanization and changes in the life style in the recent years floriculture has bloomed as a viable sector. The demand for Cut flowers and loose flowers has increased tremendously and the researches on floriculture shall focus on the changing and increasing demand and future requirements. Jammu and Kashmir (J&K) region offers suitable agro-climatic conditions, flower seed, dry flowers and bulb production for various flowers. Being the city of temples Jammu itself is a big consumer of flowers also. There is potential for this activity to be propagated on a commercial basis. J&k region of the state is going to play vital role in floriculture trade which may turn the economy of the state

**Indian Scenario:** India is bestowed with diverse agro-climatic and ecological conditions, which are favourable to grow all types of commercially important flowers generally found in different parts of the world. It also enjoys the best climate in selected pockets for floriculture during winter months. India is in an enviable position to become a leader in the world floricultural trade because of the prevailing congenial location, overall favourable climate of liberalization and globalization and also specific incentives by the government and floricultural development. A growing market as a result of improvement in the general well-being in the country and increased affluence, particularly among the middle class, has led to transformation of the activity of flower growing into a burgeoning industry. India is the second largest flower grower after China. Tamil Nadu is the leading producer of loose flower closely followed by Karnataka both in terms of area and production (Gowda, 2005) [2]. The horticultural sector contributed around 28 per cent of GDP annually from 13.08 per cent

of the area and 37 per cent of the total exports of agricultural commodities (2004-05). India's present contribution in the global floricultural export market is negligible (about 0.6%) as compared to other countries. At present, there are about 110 Export-Oriented Floricultural Units (EOUs) in operation, covering an area of 500 ha. These units are growing mostly roses, but can be diversified into orchids, anthurium, gladiolus and tuberose as the demand for tropical flowers is increasing worldwide (Sharma, 2010) [6]. The domestic industry is growing at an impressive annual rate of 7-10%. Apart from cut flowers and loose flowers, value added products like dry flowers and foliages, essential oils, nutraceuticals, natural colours, etc. are gaining an uptrend. It is estimated that 248.41 thousand ha area is under flower cultivation in 2014-15 and production of loose flowers was estimated to be 1.729 million metric tonnes (MT) and cut flowers 7673.18 million number. The country has exported 22,086.10 million MT of floriculture products having worth of Rs.548.74 million in 2016-17 (APEDA-DGCIS, 2017).

**International Scenario:** About 560,000 ha area was under flower production in different countries of the world, of which the total area in Europe was 52,000 ha, North America 18,500 ha, Asia and Pacific 360,000 ha, the Middle East and Africa 4,100 ha and central and South America 100,000 ha. Flowers grown under protected greenhouses in different countries around the world total 78,948 ha. Global production value is estimated to be worth more than 26,500 million Euro per annum. Globally more than 145 countries are involved in the cultivation of ornamental crops and the area under these crops is increasing steadily. The production of flower crops has increased significantly and there is a huge demand for floricultural products in the world, resulting in growing International Flower Trade. The world consumption of cut flowers and plants is increasing and there is a steady annual increase of 10 to 15 per cent in all importing countries. Due to globalization and its effect on income, there is growing per capita floriculture consumption in most of the countries. In case of developed countries, the consumption of flowers is closely linked with GNP per capita income and urban population. (International Statistics Flowers and Plants, 2011).

**Status of floriculture in Jammu and Kashmir:** The floriculture in J&K has increased tremendously, which is evident from the increase in area from 255 ha in 2015-16 against only 80 ha in 1996 (Sheikh *et al*, 2015) [8]. Jammu province of the state is going to play vital role in floriculture trade which may turn the economy of the state. Now every year 25-50 additional farmers take up cut flowers cultivation in Jammu region and their number still increasing. Productions of flowers are estimated to be approximately 1754 MT of loose flower and 542 million (numbers) of cut flowers in the year 2015-2016 (Sheikh *et al*, 2015) [8]. There is high competition as floricultural economy has shifted to consumer-driven enterprises, rather producer-driven economy. In this scenario of consumer-driven market, producer of all sizes have to focus on marketing with lookout for national brands to boost their sales. Growers have to look for niches and value-added products. There is a trend for direct marketing besides marketing, through super markets and wholesale markets. The J&K flower business comprises of open field and green house /poly house cultivation modern floriculture as well as traditional floriculture is simultaneously growing in our economy. But the open field floriculture is

more important as it is more predominant in the state in terms of area and production and also slowly moving towards greenhouse comprises of various modern techniques There is potential for this activity to be propagated on a commercial basis.

**Jammu and Kashmir Profile:** Jammu and Kashmir is the most colourful state of India having two provinces namely, Jammu and Kashmir and is located between 32<sup>o</sup>.17 and 37<sup>o</sup>.06 North Latitude and 73<sup>o</sup>.2 and 80<sup>o</sup>.36 East Longitude in the Himalayan region. The state is blessed with immense natural beauty. The state has 1069 mm average annual rainfall in sub-tropical Jammu provinces, 660 mm in temperate valley and 80-90 mm in arid Ladakh region respectively. The average temperatures of these three regions are 24.5, 13.3 and 5.3 centigrade respectively (Sheikh *et al*, 2015) [8]. The state is endowed with ample natural resources including soil, water, diversity in topography, climatic conditions, rich natural flora facilitating the cultivation of a wide range of flowers. Jammu province is endowed with diverse agro-climatic conditions i.e. subtropical, intermediate and temperate. Subtropical zone constituted of entire Jammu district, lower parts of Kathua, Udhampur and Rajouri district. The flower cultivation is promoted in specific pocket areas resulted an uneven performance within the state. These areas are suitable for the cultivation of marigold, gladiolus, tuberose in open and liliun and gerbera under shade net conditions. Intermediate zone encompasses major parts of the Kathua, Udhampur and Rajouri districts suited for off season production of flowers like marigold, gladiolus, liliun, rose, carnation and gerbera. The temperate zone essentially covers the hilly area of Kishtwar, Poonch, Doda and Kathua. In these areas off-season production of flowers like marigold, gladiolus, liliun, rose, carnation, tulip and gerbera can be obtained to fetch higher returns. High altitude pockets of sub-division like Kishtwar, adjoining to Zanskar region of Kargil district where gladiolus under protected condition, hollyhock, pansy etc. can be cultivated.

**Table 1:** District wise area under floriculture in Jammu and Kashmir

S.No	District	Area(ha)
1	Jammu	90.36
2	Kathua	65.28
3	Udhampur	23.31
4	Samba	30.43
5	Reasi	54.40
6	Rajouri	01.07
7	Poonch	00.27
8	Doda	82.21
9	Ramban	05.03
10	Kishtwar	01.04
11	Anantnag	07.37
12	Srinagar	46.04
13	Pulwama	2.25
14	Shopian	9.21
15	Budgam	41.43
16	Kulgam	02.21
17	Ganderbal	17.28
18	Bandipora	02.23
19	Baramulla	00.50
20	Kupwara	12.05

(Sheikh *et al*, 2015) [8].

Jammu province offers suitable agro-climatic conditions for various flowers. Being the city of temples Jammu itself is a big consumer of flowers also. According to National

Horticulture Board, only two crops namely marigold and gladiolus occupies an area of about 120 ha and 56 ha respectively (Anonymous, 2007) <sup>[1]</sup> accounting more than half the total area requiring attention to be given on the adoption of appropriate technologies in these crops. In recent years the area in Jammu region under marigold and gladiolus is fast increasing because of high profits. As far as the productivity is concerned there is a lot of scope for increasing the productivity and profit through adoption of the latest improved production and marketing technologies. There is a need to generate information regarding production and marketing aspects, the profile of loose and cut flower growers and the constraints in production and marketing of flowers cultivation. Therefore, the study was undertaken with following objectives, *viz.*

- To study the prospects, scope and area under floricultural crops in Jammu and Kashmir.
- To identify the problems faced by growers.

### Scope of the Study

The scope of floriculture in J&K has increased tremendously, which is evident from 255 ha in 2015-16 against only 80 ha in 1996 (ICAR-DFR, 2015). There is more than 100% increase in area and considerable increase in loose and cut flower production. There is high competition as floricultural economy has shifted to consumer-driven enterprises, rather producer-driven economy. In this scenario of consumer-driven market, producer of all sizes have to focus on marketing with lookout for national brands to boost their sales. Growers have to look for niches and value-added products. There is a trend for direct marketing besides marketing, through super markets and wholesale markets. The J&K flower business comprises of open field and green house/poly house cultivation. Modern floriculture as well as traditional floriculture is simultaneously growing in our economy. But the open field floriculture is more important as it is more predominant in the state in terms of area and production and also slowly moving towards green house comprises of various modern techniques. Hence, the present study has carried out primary investigation mainly focusing on the open cultivation flower-growing farmers with a view to analyzing their socio-economic conditions and income and employment generation of flowers. Flower (marigold and gladiolus) cultivation is highly profitable in India compared to other countries in the world and more so in Jammu region. There is bright prospect for the expansion of area under loose and cut flowers in the coming years

### Methodology

The study was purposively conducted in Jammu region of J&K state having more area under commercial flower cultivation. As such two major crops *viz.*; gladiolus and marigold growing areas and farmers were considered for study. From secondary sources it was found that the flower cultivation in three districts of Jammu region namely Jammu, Samba and Reasi was highly concentrated. Primary data were

gathered by field survey using a questionnaire. For the preparation of the questionnaire a pilot survey was conducted with 10 respondents which include flower farmers, local traders, wholesalers cum retailers and retailers. Attention was paid to incorporate any new information that had not been asked in the draft schedule. The draft questionnaire was then modified and improved. Based on the experience gathered from the pilot survey, respondents for the present study were selected through stratified random sampling. From each selected block four prominent flower growing villages were selected purposively and from each village ten farmers selected randomly making a total of 240 flower growing farmers. As such two community blocks from each district were purposively selected. Out of 240 farmers, 88 farmer which have grown both marigold and gladiolus flower crop. In the light of the study, a data from questionnaire was checked, coded and entered into data base system using Microsoft Excel software to analyze Mean, percentage, frequencies, "Z" score and ranking were used to study the problems faced by flower growers.

### Problems of flower growers

For a comprehensive view, the major problems were categorized into five broad categories *viz.*: input related problems, know-how related problems, infrastructure related problems, post harvesting related problems and other problems. The data has been presented accordingly.

### Input related problems

Perusal of Table 2, it is evident that among input related problems, non-availability of hi tech production & propagation structures was a very serious problems encountered by respondents. The other problems related to inputs like inadequate credit facilities for the purchase of inputs, irregular supply of electricity, non-availability of quality inputs in required, non-availability of inputs at village level, lack of irrigation facility, non-availability of FYM, and non availability of soil and seed testing lab locally were considered as serious problems Regarding very serious problems, farmers demanding propagation structures at cheaper rates for hi tech and sustainable production. Farmers need for purchase various inputs is always time bound and the market might not be able to respond equally resulting in shortage or non availability. Electricity though supplied for limited and specified hours in the rural area, several times farmers face unscheduled power cuts that hamper the works of farmer hence the problems was serious. The reasons for non-availability of quality seeds could be that all the farmers demanding a particular variety of certain seed agency leading to shortage or possible hoarding of seeds by seed sellers for selling at higher rates. Other reason may be that the seed producers and supplier may not be able to predict actual demand of quality seed. Gradual reduction in the livestock numbers kept by farm households could be the reason for non-availability of FYM.

**Table 2:** Input related problems (N = 240)

S. No.	Problems	Category/ score	Weighted frequency score	Z score	Seriousness of problems	Rank order
1	Inadequate credit facilities for the purchase of inputs	VS	312	0.175	S	II
		S	204			
		NSS	34			
2	Non availability of quality seed, fertilizer, herbicides and pesticides in required quantity	VS	312	-0.087	S	III
		S	192			
		NSS	40			
3	Non availability of soil testing lab locally	VS	270	-0.009	S	VI
		S	212			
		NSS	44			
4	Non availability of inputs at village level	VS	282	-0.175	S	IV
		S	226			
		NSS	33			
5	Lack of irrigation facility	VS	252	-0.526	S	V
		S	248			
		NSS	32			
6	Non availability of FYM	VS	228	-0.526	S	V
		S	280			
		NSS	24			
7	Irregular supply of electricity	VS	270	-0.087	S	III
		S	248			
		NSS	26			
8	Non availability of hi tech production & propagation structures	VS	399	2.456	VS	I
		S	214			
		NSS	-			

(VS-Very serious, S- Serious, NSS- Not so serious) Mean = 2.27, SD = .114

The attempt also made to critically analyze the input related problems which are also the important factors triggering the low yield of flowers throughout the year in the study area. It can be overcome by liberal opening of input centers, registered flower nurseries and agri-business centers etc. The finding related to this aspect got the support of studies of Roy and Bhagat (2009) [5] and Yadav and Sharma (2005) [9].

### Know-how related problems

Knowledge of technology is another important dimension in farming activities. It is more so in case of flower farming,

which are known as cash crops. From data in Table 4.5.2 reveals the views of farmers about extent of problems related to technical know-how of improved method of flower cultivation. Lack of knowledge about diseases, insect-pests and their control method, lack of knowledge of current advances of flower production and Lack of knowledge about floriculture schemes were perceived as very serious problem., Lack of demonstrations and trials of flower production, Lack of knowledge about seed treatment, Lack of knowledge about weed control and application of herbicides, and Lack of knowledge of flower varieties for commercial cultivation were considered as serious problems

**Table 3:** Know-how related problems (N = 240)

S. No.	Problems	Category	Weighted frequency score	Z score	Seriousness of problems	Rank order
1	Lack of knowledge of flower varieties for commercial cultivation	VS	207	-0.039	S	VII
		S	202			
		NSS	70			
2	Lack of knowledge about seed treatment	VS	276	0.513	S	V
		S	204			
		NSS	44			
3	Lack of knowledge of current advances of flower production	VS	375	1.699	VS	II
		S	208			
		NSS	11			
4	Lack of knowledge about diseases, insect-pests and their control method	VS	540	2.687	VS	I
		S	108			
		NSS	6			
5	Lack of knowledge about floriculture schemes	VS	366	1.581	VS	III
		S	206			
		NSS	15			
6	Lack of demonstrations and trials of flower production	VS	306	0.632	S	IV
		S	170			
		NSS	53			
7	Lack of knowledge about weed control and application of herbicides	VS	192	0.00	S	VI
		S	246			
		NSS	53			

(VS-Very serious, S- Serious, NSS- Not so serious) Mean = 2.04, SD = .253

In case of very serious problems, most of the farmers expressed their need for knowledge regarding identification of insects/diseases and control method in terms of training, field demonstrations, field days, and exposure visits etc. Most of the respondent expressed that they were lacking knowledge of floriculture schemes especially post harvesting related. The finding related to this aspect got the support of studies of Roy and Bhagat (2009) [5] and Modi *et. al.* (2009) which concluded that there was substantial amount of problem among the farmers about different practices in flower cultivation.

#### Infrastructure related problems

Proper and adequate infrastructure helps farmers and agri businessman to run their business successfully and helps to deliver the goods in the right time with right condition. Perusal of data from Table 4, it is evident that lack of exporting agencies, was perceived as very serious problem. Lack of knowledge about training, research and development

institutes, lack of technical staff/scientists, lack of cold storage facilities for planting materials and produce, complicated and long procedure to avail financial help were perceived it as serious problems. Lack of literature in simple language was perceived as not so serious problem.

The study brought to focus the problems experienced by the respondents in the exporting agencies and training aspects. Infrastructure like lack of modern communication sources may be the reason for knowledge about training institutes. The content of trainings and method of organization might not cover the content of interest to farmer and field functionaries. Adequate staff arrangement was essential for effective implementation and follow up programmes. Innovative approach like Public Private Partnership (PPP) could be initiated. Privatization of extension could be another alternative where we can have staff in the operational area on change basis. The finding related to this aspect got the support of studies of Sharma and Singh (2011) [7] and Narula (2011) [4].

**Table 4:** Infrastructure related problems (N = 240)

S. No.	Problems	Category/ score	Weighted frequency score	Z score	Seriousness of problems	Rank order
1	Lack of cold storage facilities for planting materials and produce	VS	447	-0.130	S	IV
		S	150			
		NSS	16			
2	Lack of literature in simple language	VS	333	-1.347	NSS	VII
		S	168			
		NSS	45			
3	Complexity of new practices/ technologies	VS	420	-0.173	S	V
		S	192			
		NSS	14			
4	Complicated and long procedure to avail financial help	VS	366	-0.695	S	VI
		S	160			
		NSS	55			
5	Lack of exporting agencies	VS	720	1.826	VS	I
		S	-			
		NSS	-			
6	Lack of knowledge about training, research and development institutes	VS	540	0.565	S	II
		S	102			
		NSS	9			
7	Lack of technical staff/scientists	VS	498	0.086	S	III
		S	100			
		NSS	24			

(VS-Very serious, S- Serious, NSS- Not so serious) Mean =2.58, SD =.23

No projected aids and reference material were provided during trainings programme. It can be concluded that latest method of training of farmers can be a critical input for the rapid transfer of agricultural (flower) technology. The present rate of agricultural (flower) production can be doubled if the available technology is brought to near with the production process and programmes focusing more and more on transferring the new technology from the confines of laboratories and research institutes to the farmers and make them more result and work oriented. In this context training plays an important role in boosting the flower production. The procedural complexities involved in getting loan discourage many farmers to avail loan. The finding related to this aspect got the support of studies of Modi *et. al.* (2009) and Sharma

and Singh (2011) [7].

#### Post –harvesting related problems

Post - harvest handling is as important as growing for delivering an attractive product to the consumer. Perusal of data from Table 5, it is evident that middlemen/agents huge share was perceived as very serious problem. Lack of regulated market in the area, transportation to the market, damage/spoilage of flowers due to lack of cold stores, no support price/ minimum price fixed by the government, wide fluctuation of market in the year and lack of adequate demand throughout the year were perceived as very serious problems. Non-availability of quality packing material was perceived as serious problems.

**Table 5:** Post –harvesting related problems (N = 240)

S. No.	Problems	Category/ score	Weighted frequency score	Z score	Seriousness of problems	Rank order
1	Problems of transportation to the market produce	VS	360	0.25	S	III
		S	212			
		NSS	14			
2	Lack of regulated market in the area	VS	354	0.30	S	II
		S	224			
		NSS	10			
3	Lack of adequate demand throughout the year	VS	288	-1.00	S	VIII
		S	188			
		NSS	50			
4	Non-availability of quality packing material	VS	285	-1.20	NSS	VII
		S	176			
		NSS	57			
5	Wide fluctuation of market in the year	VS	342	-0.20	S	VI
		S	192			
		NSS	30			
6	Damage/spoilage of flowers due to lack of cold stores	VS	345	0.05	S	IV
		S	215			
		NSS	17			
7	No support price fixed by the government.	VS	351	-0.10	S	V
		S	190			
		NSS	28			
8	Middlemen/agents huge share	VS	545	2.10	VS	I
		S	90			
		NSS	-			

(VS-Very serious, S- Serious, NSS- Not so serious) Mean =2.39, SD =.277

These problems slowed down the adoption of modern post-harvest technologies in the locale of study. The farmers were helpless and they had to pay more commission charges in order to market their produce at right time. Lack of the cold storage facility, regulated market and agent's huge share was the general problem of the study area. Majority of the respondents reported that they were not aware about storage of flowers but simply heard storing of onion and potato etc. This finding is in accordance of Sharma and Singh (2011) [2] and Halder and Pati (2011) [3]. Hence, government must take necessary steps to evolve alternative marketing practices just like Raitha Bazaars Apni Mandies where the growers can

get maximum benefit.

#### Other problems

From the Table 6, it is evident that high cost of inputs was perceived as very serious problem. The other problems like high wages of labourer, lack of marketing intelligence, untrained/unskilled labour, lack of subsidy for inputs, and failure of crop due to climatic and natural hazards were perceived as serious problems. Pain in fingers due to cutting/picking of flowers was perceived as not so serious problems.

**Table 6:** Other problems (N = 240)

S. No.	Problems	Category/ score	Weighted frequency score	Z score	Seriousness of problems	Rank order
1	High cost of inputs	VS	555	1.63	VS	I
		S	110			
		NSS	-			
2	High wages of labourer	VS	420	0.73	S	II
		S	164			
		NSS	18			
3	Lack of subsidy for inputs	VS	276	-0.46	S	V
		S	224			
		NSS	36			
4	Lack of marketing intelligence	VS	378	0.06	S	III
		S	196			
		NSS	16			
5	Pain in fingers due to cutting/picking of flowers	VS	234	-7.49	NSS	VII
		S	114			
		NSS	105			
6	Failure of crop due to climatic and natural hazards	VS	267	-	S	VI
		S	172			
		NSS	65			
7	Untrained/unskilled labour	VS	288	-0.36	S	IV
		S	182			
		NSS	53			

(VS-Very serious, S- Serious, NSS- Not so serious) Mean =2.28, SD =.300

More than two-third of the respondents reported the problem of high cost of inputs such as cost of seeds, fertilizers, insecticides and pesticides etc. The respondents also reported that cost of hybrid seeds and DAP fertilizers was not affordable by them. Migration of labourer to nearby industrial cities like Jammu and Samba and most of the young generation in non-agricultural operations might be the reason for non-availability of labour. High wages of labourer relates directly to the no availability of labour as the shortage of any goods escalates its cost. Majority of the respondents were lacking present and past market information which leads to under loss. The government is also lagging behind in providing right information regarding market conditions, where to sell, when to sell and under what price to sell. So, the market intermediaries are taking advantage of the situation. The flower growers were unable to take their produce to the distant markets where prices are high due to high cost of transportation. Similar results were reported by Modi *et al.* (2009) and Sharma and Singh (2011) <sup>[7]</sup> respectively.

The major problems faced by growers in the production of flowers were non availability of hi tech production & propagation structures, Lack of knowledge of current advances of flower production, lack of knowledge about diseases, insect-pests and their control method, Lack of knowledge about floriculture schemes, lack of exporting agencies, middlemen/agent's huge share and high cost of inputs. There is a need to provide modern infrastructure for sustainable production throughout the year and also knowledge of training institutes to flower growers regarding identification and control of pests and diseases. Support price for floriculture crop should be decided by the government. Efforts need to be made to strengthen the input supply system particularly the quality seeds/saplings and quality fertilizers to enable the farmers to get the quality inputs in time and at reasonable prices.

### Conclusion

The state of Jammu and Kashmir has a great potential for commercialization of floriculture. Emerging trends of increase in area under flower crops evident the better prospects for floriculture in Jammu and Kashmir. The geographic and climatic conditions further facilitate the development of the floriculture industry in the state. The business of flowers is still in its growth stage and it can be increased by the efforts made by government through various programmes, exhibitions, flower shows and seminars.

In general, to access the problems of flower growers current advances of flower production, market information, high cost of inputs, middlemen huge share and financial problem, specialized programs and need based training efforts are to be considered and executed for flower growers. They should be given technical training on seed production to save high investment on planting materials. They should also be linked to the market and given technical assistances as well.

### References

1. Anonymous. Annual Report, National Horticulture Board. Jammu and Kashmir, 2007.
2. Gowda BT. A study on cultivation and marketing pattern of selected in Belghum district. M.Sc. (Agri.). Thesis. University of Agricultural Sciences, Dharwad (Karnataka), 2005.
3. Halder P, Pati S. A Need For Paradigm Shift to Improve Supply Chain Management of Fruits & Vegetables in

India. Asian Journal of Agriculture and Rural Development. 2011; 1(1):1-20.

4. Narula SA. Reinventing cold chain industry in India: need of the hour. Interview with Mr Sanjay Aggarwal. Journal of Agribusiness in Developing and Emerging Economies. 2011; 1(2).
5. Roy S, Bhagat R. Extent of adoption of recommended tuberose production practices. Indian Journal of Extension Education. 2009; 45(1-2):55-58.
6. Sharma SC. Plethora of potential waiting to be trapped. The Hindu Survey of Indian Agriculture, 2010, 44-46.
7. Sharma G, Singh S. Economic Analysis of Post-harvest Losses in Marketing of Vegetables in Uttarakhand. Agricultural Economics Research Review. 2011; 24:309-315.
8. Sheikh MQ, Bhat ZA, Siddique MAA, Singh KP, Saha TN. Present status and prospects of floriculture in Jammu and Kashmir. Indian Council of Agricultural Research-Directorate of Floricultural Research, Pune. 2015; 13:1-38.
9. Yadav VPS, Sharma BK. Constraints in adoption of mushroom cultivation practices. Indian Research Journal of Extension. Education. 2005; 10(2, 3):50-53.
10. www.aiph.org/2011 (International Statistics Flowers and Plants/statistical-yearbook).
11. www.apeda.com
12. www.dgcis.com