

## Research and Development of Floriculture in Nepal

Dr. U. Pun<sup>1</sup>

### ABSTRACT

*This article highlights the current status of floriculture research in Nepal and the role different organization has played. It examines both research and development role of various organizations such as university, research organization and development agencies both from government and non-government sector. The current problems of the industry are mentioned, and a new approach has been proposed to make both research and development of floriculture more effective.*

### INTRODUCTION

Floriculture in Nepal had its beginning in the mid-forties of the last century. However, it took almost five decades for this sector to be organized to initiate the beginning of cut flowers production. Floriculture Association of Nepal (FAN) was established in 1992 and it conducted the first nationwide survey of the situation of floriculture in 1994. During the early period ornamental plants were mostly imported from India. Later, it was only in the late eighties that the first cut flower (Gladiolus) was commercially grown in Nepal. The first wholesale of cut flowers was established by FAN in 1998 and the rapid growth of floriculture began in Nepal.

The growing importance of floriculture resulted in the changes in the line ministry of the government of Nepal. In 2005, floriculture was incorporated into then Ministry of Agriculture and Cooperatives (it was under Ministry of Forestry and Soil Conservation prior to 2005) now Ministry of Agriculture Development. Nepal began exporting its cut flowers from 2008 onwards and the first major cut flower being Rose. Several other cut flowers and cut foliages are also exported from Nepal in a limited scale such as Cymbidium, Hydrangea, Gladiolus, Carnation, Ornamental Eucalyptus and Asparagus.

During this journey of floriculture development in Nepal the leadership in research and development has changed but the output is still insignificant. It is important for the research leaders to understand the strength of this sector and steer it in the right direction so that research and development partners supplement the effort of growers involved in floriculture.

The current status of floriculture research and development is briefly stated below with some mention of the early situation.

### RESEARCH

#### *Department of Plant Resources (DPR)*

The DPR under the Ministry of Forest and Soil Conservation was the first institution in Nepal that began research in floricultural crops. The beginning was with the micro propagation of many floricultural plants such as chrysanthemum, carnations, gerbera, gladiolus and several types of orchids such as Cymbidium, Dendrobium and Ceolygyne. DPR are also conducted multi-location trial for Tulip and initiated research on identification and domestication of native ornamentals. The research activity of DPR in

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<sup>1</sup> Himalayan Flora, Email: [umedpun@gmail.com](mailto:umedpun@gmail.com)

floriculture crops have significantly reduced after 2005, the year floriculture sector was put under Ministry of Agriculture and Cooperatives.

Department of Plant Resources was also the first institution to begin Chrysanthemum exhibition and Flower Show on an annual basis since 1990. This program was organized by Royal Botanical Garden, Godavari and was must visit flower exhibition for all the flower lovers. This activity of DPR was highly successful in generating awareness of flowers and ornamental plants in Nepal. Unfortunately, this was discontinued since mid 2005.

#### *Floriculture Association of Nepal*

This is another organization that has made huge contribution towards development of floriculture in Nepal. The first survey of floriculture in Nepal was conducted in 1993/1994 and was important to publish directory of floriculture in Nepal. This association later developed quarantine regulations of major flower importing countries. It also launched the first multi location cut flower production of Gladiolus in different locations such as Kathmandu valley, Dhading, Chitwan and Makwanpur. The result of this research is mainly responsible for round the year production of Gladiolus in Nepal. This was followed by another crop Chrysanthemum. FAN also conducted research on postharvest situation of cut flowers in Kathmandu valley and vase life of flowers when transported to different major cities of Nepal.

#### *Agro Enterprises Center (AEC of FNCCI / USAID)*

This is the organization that gets full credit for the formation of floriculture association in Nepal and the growth of floriculture in Nepal. AEC supported FAN financially for more than a decade and is still giving some logistic support. AEC commissioned some studies in commercial production of exotics such as Leather fern and Proteas. Proteas was in fact grown in Kathmandu in collaboration with members of floriculture association of Nepal. Unfortunately, Proteas failed to grow in Kathmandu climate and in retrospect we feel it would have done better if planted in the drier zone in the mid-west and far-west region of Nepal.

#### *Institute of Agriculture and Animal Science (IAAS), Tribhuvan University*

The department of horticulture is perhaps the most important center for floriculture research in Nepal. Floriculture research at IAAS began in 1993. It has done agronomic and postharvest research for several cut flowers such as Gladiolus, Rose, Gerbera and Carnations. It is also the center from where at least 1 master student in floriculture graduates on an annual basis.

#### *Central Department of Botany, Tribhuvan University*

This department is mainly involved in tissue culture of many native orchids such as Dendrobium, Pahius and Ceolygyne.

#### *School of Science and Technology, Kathmandu University*

The biotechnology department is involved in micro propagation of Orchids such as Dendrobium and Ceolygyne.

#### *Nepal Agriculture Research Council (NARC), Kathmandu*

The horticulture research division of NARC has been involved in floriculture research since 2000 but in a small way. Research is mainly concentrated on varietal trial of Gladiolus, use of corm sizes as planting materials and was done at Khumaltar and Pakhribas. Lately, at ARS Dailekh, Breeding of gladiolus has been initiated. In

Kathmandu, Lumle and Pokhara varietal trial of Carnation has been initiated and from this year agronomics of Cymbidium has been initiated as PPP model in Kathmandu. Plant pathology division was also involved in efficacy testing of several fungicides against Septoria leaf spot in marigold.

*Floriculture Development Center (FDC), Godavari*

In 2005, after floriculture was mandated to Ministry of Agriculture and Cooperatives, Department of Agriculture formed Floriculture Development Center at Godavari under Directorate of Fruits. The main objective of this center is to set up demonstration plots of various ornamentals. It is also currently imparting training programs in collaboration with FAN. The training is mainly in the area of propagation, nursery management and insect and disease management. In research, FDC collaborated with FAN/NARC for identification and domestication of native ornamentals and efficacy testing of several fungicides against Septoria leaf spot in marigold.

*Himalayan Flora Enterprises (P) Limited, Hattiban*

This company is involved in efficient agronomic practices of Cymbidium in collaboration with NARC under PPP model, post harvest handling of cut flowers and efficient propagation technique of several perennials.

**DEVELOPMENT:**

*INGOs*

Several INGOs were involved in incorporating floriculture as income generating projects in the community. The most successful is Educate the Children. This organization trained and supported poor farmers in Ichungunaryan of Kathmandu and many have become full time flower growers. Similarly, World Vision (Nawalparasi) and Save the Children (Kailali) were also involved in different parts of the country in imparting training in floriculture.

*OVOP (FNCCI/GoN)*

One Village One Product (OVOP) is a joint program of FNCCI (Federation of Nepalese Chambers of Commerce and Industry) and (GoN) Government of Nepal under

Public Private Partnership program (PPP). Under this scheme, Cymbidium cut flower has been selected for Lalitpur district and is launched in 2007. This program helps growers with subsidy in planting materials, green house construction, media, pots etc. This scheme has increased the growers to about 300% in three years and the production capacity has increased to about 200%.

*Floriculture Development Center (FDC)*

This center should impart training not only to the farmers but also to JTA/JT who are posted in important floriculture districts such as Kathmandu, Lalitpur, Chitwan, Makwanpur, Dhading and Kavre. The training should focus on crop production and plant protection.

*Floriculture Association of Nepal (FAN)*

Floriculture Association of Nepal is currently conducting various training to its members which is very effective. However, it may have to go beyond its members and reach to flower lovers and prospective flower consumers and make them aware of the best use of flowers.

*Department of Agriculture (DOA)*

The agri-business division of DOA, conducts Annual Chrysanthemum Show during autumn in collaboration with FAN. It also supports the annual Flower Exhibition and Show of FAN held in the spring each year.

**Current situation and new approach to make floriculture research effective***What are the major production problems in the industry?*

The major issues of floriculture industry are as under:

- Lack of appropriate production and postharvest technology
- Lack of availability of new varieties and planting materials
- Lack of effective plant protection measures
- Lack of desired in-puts and refrigerated facility for cut flowers
- Lack of training and certification system and
- Lack of effective plant quarantine system

*How is the current research approach?*

The current approach is not problem based and is rather researcher centered. There is no link between researcher and stakeholders and still is not in priority for government funding.

*Human resource status*

There may be around 20 people with at least master degree who are currently involved in floriculture related research, training and extension.

*Publication status*

The publication of floriculture related research article (in particular production or postharvest technology based) in referred journal is very low. Till 2012, there are less than 20 articles in different national journals.

*What should be the research approach?*

The research approach should be as follows:

- Problem to be identified by growers.
- Prioritize problem by FAN research sub-committee.
- Prioritized problem to be communicated to research organization.
- Research to be communicated and outcome disseminated.

*What is current development approach?*

- Not getting Subject matter Specialist in the important floriculture area.
- INGOs working in isolation.

*How should be the development approach?*

- Subject Matter Specialist in floriculture should be assigned in important floriculture area.
- JTA/JT assigned in important floriculture area should be given regular training in various aspects of floriculture.
- FAN should be more actively used by government and non government agencies.

## **CONCLUSION**

Research and development of floriculture in Nepal is still at a very preliminary stage despite the tremendous growth of this sector. However, it is now right time to harness the gift of nature (climatic diversity and plant diversity) by doing effective research.

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