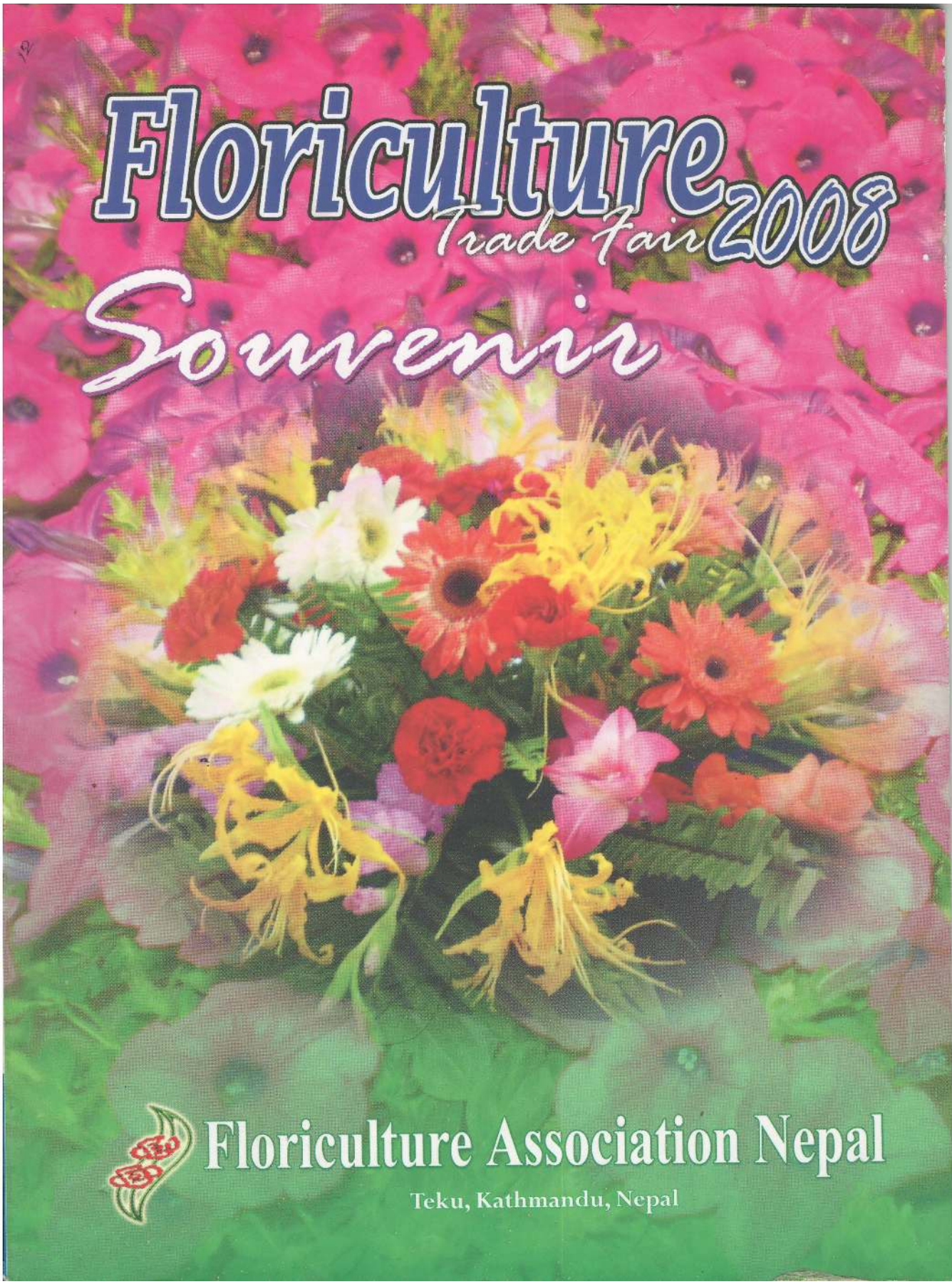
Floriculture Trade Fair 2008

Souvenir



Floriculture Association Nepal

Teku, Kathmandu, Nepal

Floriculture Trade Fair 2008

Souvenir

Editorial Committee:

Dr. Umed Pun

Lok Nath Gaire

Arun Chhetri

Janga Bdr. Tamang

Floriculture Association Nepal (FAN)

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Tel: 2011767, 4267005
Fax: 977-1-4261671
E-mail: fan_nepal@yahoo.com
fann@wlink.com.np
www.fanepal.org.np

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मा. छविलाल विश्वकर्मा

कृषि तथा सहकारी मन्त्री

निवास : ४७२०१९४
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निजी सचिवालय
सिंहदरबार, काठमाडौं
नेपाल ।

फ्लोरिकल्चर एशोसियसन नेपालले विगतका वर्षहरुमा जस्तै यस वर्ष पनि राष्ट्रिय स्तरको पूष्प व्यापार मेलाको आयोजना गर्न लागेको थाहा पाउंदा मलाई अत्यन्त खुशी लागेको छ । पूष्प मेलाको आयोजनासंगै पूष्प खेती सम्वन्धी उपयोगी सामाग्री सहितको विविध लेख रचनाहरुको सँगालोको रुपमा **पूष्प विशेषाङ्क (Floriculture Souvenir 2008)** प्रकाशित हुनु अर्को प्रशंसनीय कार्य हो ।

हाम्रो देशको जलवायु र भौगोलिक विविधता पूष्प खेतीको हिसावले निकै नै उपयुक्त पाईएको छ । हालैका वर्षहरुमा यस खेती तर्फ कृषकहरुको अभिरुची वढ्दै गएको र फूलको आन्तरिक वजार समेत आशालाग्दो हिसावले विस्तार भएको छ । तर, यस क्षेत्रको सम्भाव्यता अनुरुप पूष्प खेतीलाई व्यवसायीकरण गरी थप गुणस्तरीय, प्रतिस्पर्धी र दिगो वनाउनुका साथै निर्यात प्रवर्द्धन गर्ने दिशामा अझ थप क्रियाशील हुनु पर्ने देखिन्छ ।

एशोसियनद्वारा आयोजित राष्ट्रिय स्तरको यो मेलामा पूष्प विज्ञ, उपभोक्ता एवं उत्पादकहरु एउटै थलोमा भेटघाट हुने अवसर मिलेको छ । यसवाट पूष्प व्यवसायमा संलग्न उद्यमीहरुलाई थप हौसला प्राप्त हुनेछ र व्यवसायको आधुनिकीकरणमा समेत ठोस योगदान पुग्न सक्छ भन्ने मैले विश्वास लिएको छु ।

अन्त्यमा, राष्ट्रिय पूष्प मेलाका साथै यस अवसरमा प्रकाशन गर्न लागिएको **पूष्प विशेषाङ्क-२०६४** को पूर्ण सफलताकालागि हार्दिक शुभकामना व्यक्त गर्दछु ।

छविलाल विश्वकर्मा
मन्त्री

नेपाल उद्योग वाणिज्य महासंघ
Federation of Nepalese Chambers of Commerce & Industry
FNCCI

P.O. Box : 269
Sahid Sukra
FNCCI Milan Marg, Pachali
Teku, Kathmandu, Nepal
Tel. : 4262061, 4262218, 4266889
Fax : 977-1-4261022, 4262007
E-mail : fncci@mos.com.np
http://www.fncci.org

शुभ-कामना

नेपालमा विगत केही वर्ष अधिसम्म घरेलु उत्पादन र विशेषगरी धार्मिक प्रयोजनका लागि मात्र उपयोग हुने गरेको फूलको उपयोगिता आज हर कार्यमा बढ्दै गएको छ। यसैले यसको व्यवसायिक उत्पादन तथा बिक्री वितरण हुँदै जांदा पुष्प व्यवसायले आज उद्योगको रुप लिई सकेको छ। नेपालमा मात्र नभई यसको माग र चाहना विश्व बजारमै व्यापक रुपमा विस्तार हुँदै गएको छ। यस अवस्थामा नेपाली पुष्प व्यवसायलाई व्यापकता दिई आन्तरिक मागको पूर्ति गर्नुका साथै अन्तर्राष्ट्रिय बजारको माग र चाहना अनुरुपका फूलहरु उत्पादन गरी यसको निर्यात बढाउँदै जान सके यस क्षेत्रबाट पनि नेपाललाई ठूलो आर्थिक लाभ हुन सक्ने स्पष्ट छ।

यति मात्र नभई पुष्प व्यवसायको विकास र विस्तारबाट रोजगारी प्रबर्द्धन तथा जनताको आय आर्जनमा समेत ठुलै योगदान पुग्ने देखिन्छ। यस क्रममा नेपाल उद्योग वाणिज्य महासंघको सक्रिय सदस्य फ्लोरिकल्चर एशोसिएशन नेपाल (Floriculture Association Nepal) ले देशमा पुष्प खेती र सोको बजार प्रबर्द्धनमा खेल्दै आएको भूमिका अत्यन्त सराहनीय छ।

सोही क्रममा एशोसिएशनले नेपालको पुष्प व्यवसाय र यससंग सम्बन्धित उद्योग व्यवसायको विकासका लागि पुष्प व्यवसायीहरुको सहभागितामा वर्षेनि पुष्प व्यापार मेला आयोजना गर्दै आएको तथा यस वर्ष पनि सो मेलालाई निरन्तरता दिएकोमा महासंघ लगायत मलाई व्यक्तिगत रुपमा समेत अत्यन्त खुशी लागेको छ। पुष्प व्यवसायको विकास तथा यस व्यवसायमा लाग्न उत्सुक व्यक्तिहरुका लागि यस्ता मेला तथा प्रदर्शनी प्रेरणाको श्रोत एवं मार्ग दर्शन हुने र नेपाली पुष्प व्यवसायलाई प्रतिस्पर्धी तथा गुणस्तरीय बनाउन समेत मद्दत पुग्दछ। यसैले यस्ता मेला, महोत्सव तथा प्रदर्शनीलाई महासंघले निरन्तर रुपमा प्रोत्साहित गर्दै आएको छ। साथै नेपाल सरकारले पनि फूलको उत्पादन, प्रदर्शन तथा बजार व्यवस्थापनका लागि समेत नीतिगत एवं प्रक्रियागत रुपले प्रोत्साहित गर्नुका साथै पुष्प व्यवसाय सम्बन्धी छुट्टै नीति तर्जुमा गर्नु समेत आवश्यक भई सकेको छ।

अन्तमा, सो मेलाका अवसरमा पुष्प व्यवसाय सम्बन्धी विभिन्न उपयोगी सामग्रीहरु सहित प्रकाशित गर्न लागेको पुष्प विशेषांक (Floriculture Souvenir) पुष्प व्यवसायीका साथै यस सम्बन्धी नीति निर्माता, अनुसन्धानकर्ता तथा यस क्षेत्रमा रुची राख्नेहरुका लागि अत्यन्त उपयोगी हुने विश्वास सहित यस प्रकाशन तथा पुष्प व्यापार मेलाको पूर्ण सफलता र एशोसिएशन एवं एशोसिएशनका पदाधिकारी एवं सदस्यहरु लगायतका सम्पूर्ण पुष्प व्यवसायीहरुको उत्तरोत्तर प्रगतिका लागि हार्दिक शुभ-कामना व्यक्त गर्दछु।

(चण्डिराज ढकाल)
अध्यक्ष

२४ फागुन, २०६४।

Agro Enterprise Centre

Federation of Nepalese Chambers of Commerce and Industry

कृषि उद्यम केन्द्र

नेपाल उद्योग वाणिज्य महासंघ

शुभकामना

नेपाल उद्योग वाणिज्य महासंघको सकृय सदस्य फ्लोरीकल्चर एशोसिएसन नेपालले यसको स्थापना कालदेखि नै पुष्प व्यवसायको संस्थागत विकास एवं प्रबर्द्धन लागि निरन्तर कार्य गर्दै आइरहेको छ । नेपालको पुष्प व्यवसाय र यस संग सम्बन्धीत अन्य उद्योगको विकासका लागि सदा झैं यस बर्ष पनि पुष्प व्यवसायीहरुको सकृय सहभागीतामा "पुष्प व्यापार मेला **(Floriculture Trade Fair)"** आयोजना गर्न लागेको पावन अवसरमा नेपाल उद्योग वाणिज्य महासंघको कृषि उद्यम केन्द्रको तर्फबाट बधाई ज्ञापन गर्न चाहान्छु ।

पुष्प जन्य बस्तुहरुको विकास तथा व्यापार प्रबर्द्धन गर्ने दृष्टिकोणले सहकारी, निजी, साझेदारी अवधारण अनुरुपको संचालित "एक गाँउ एक उत्पादन" कार्यक्रम अन्तर्गत यस बर्ष देखि ललितपुर जिल्लामा स्थानिय विशिष्टता साथ सिमबीडियम अर्कीड खेती र बजार विस्तारको कार्यक्रम शुरु गरिएको छ र यस पुष्प व्यापार मेलामा सो सम्बन्धी जानकारी पनि समावेश गरिएको छ । हाल लागेको व्यक्ति/संस्था र यस व्यवसायमा उत्सुक नयाँ आउने व्यक्तिहरुलाई यो मेला प्रेरणा एवं सूचनाको श्रोत बन्न सक्ने मैले विश्वास लिएको छु ।

धन्यवाद ।

डा. देब भक्त शाक्य
कार्यकारी निर्देशक

चैत्र २०६४

G.P.O. Box 7651, FNCCI Building, Sahid Sukra Milan Marga, Teku, Kathmandu, Nepal. Tel: 4262245, 4262260, 4267005
Fax: +977-1-4261671, e-mail: aec-fncci@mos.com.np
www.agripricenepal.com, www.b2b.com.np, www.aec-fncci.org

Floriculture Association Nepal (FAN)

P.O.Box No. 7651, FNCCI Building, Teku, Kathmandu, Phone No.: 4267005, 4262245, Fax: 977-1-4261671

Ref.

सन्देश

नेपालको भौगोलिक एवं जलवायु पुष्प व्यवसायका लागि निकै उपयुक्त मानिएको तथा यसले एक उद्योगको रुप लिईसकेको आजको अवस्थामा आन्तरिक बजार माग अनुसारको उत्पादन गरी आपुर्ति गर्न साथै अन्तराष्ट्रिय बजारको माग र चाहना अनुसारको फूल उत्पादन गर्ने तर्फ समेत हाम्रा व्यवसायीहरु अग्रसर हुदै आएकोमा मलाई खुसी लागेको छ । कृषि व्यबसायको एक नगदे बालीको रुपमा समेत स्थापित भैसकेको पुष्प व्यवसायले बढि रोजगारी तथा प्रतिफल दिन सकेकोले दिनानु दिन यस व्यवसाय आकर्षणको केन्द्र बिन्दु बन्दै गैरहेको छ । यस व्यवसायलाई आजको स्थितीसम्म ल्याई पुऱ्याउनमा हाम्रा अग्रज ँब्ल का पूर्व पदाधिकारीज्यूहरु, व्यवसायी साथीहरु, बिभिन्न संघ संस्थाको सहयोग तथा बर्तमान कार्यकारिणी साथीहरुको सहयोग र ँब्ल को पन्ध्रौ बर्षदेखिको निरन्तर प्रयासबाट संम्भव भएको छ । पुष्प व्यवसायको बिकास बिस्तार तथा प्रबर्द्धन कार्यमा सघाउ पुऱ्याउने सबै धन्यबादका पात्र हुनुहुन्छ ।

पुष्प व्यवसायको निरन्तर बिकास बिस्तार तथा पबर्द्धनका साथै यस व्यवसायमा आउन चाहने नयाँ व्यक्तिहरुको लागि पुष्प उत्पादन प्रबिधीको जानकारी एवं बजार सुचनाहरुको आदान प्रदान, उपभोक्ताको रुचि अनुसारका फूल बिरुवाहरु खरिदका लागि एकै स्थानमा सहजै प्राप्त गर्ने अवसर प्रदान गर्नु आदि जस्ता व्यापार मेला एवं प्रदर्शनीको माध्यमबाट संभव हुने भएको हुदा पुष्प व्यापार मेला ँब्ल को एक नियमित रणनितिक कार्यक्रमका साथै पुष्प व्यवसायीहरुका लागि एक पर्बकै रुपमा बिकसित भैसकेको छ । बिगत बर्षमा झै यस बर्ष पनि फ्लोरिकल्चर एशोसिएसन नेपालले बिभिन्न पुष्प तथा पुष्पजन्य बस्तुहरुको खरिद तथा बिक्री बितरण, नयाँ नयाँ प्रबिधीको जानकारी, बजार सुचनाका साथै पुष्प व्यवसायको बिकास, बिस्तार तथा प्रबर्द्धन गर्ने उद्देश्यले यहि २०६४ चैत्र २० गते देखि २४ गतेसम्म पुष्प व्यापार मेलाको आयोजना गर्न लागेको छ। यस मेलाले कृषक, उद्यमी र व्यवसायीहरुलाई हौसला प्रदान गर्न, प्रतिस्पर्धी र दिगो पुष्प व्यवसायको बिकास गर्नका लागि सरकारी गैरसरकारी र नीजि क्षेत्रको भुमिका स्पष्ट पार्न, आय तथा रोजगारीको बिकाश गर्न, गुणस्तरयुक्त बस्तु उत्पादनमा जोड दिई पुष्प आयात प्रतिस्थापन एवं निर्यात प्रबर्द्धन गर्ने कार्यमा महत्वपूर्ण सघाउ पुऱ्याउने छ भन्ने अपेक्षा लिएको छु ।

मेला आयोजनासगै पुष्प सम्बन्धि बिभिन्न पुष्प बिशेषज्ञहरुद्वारा लिखित उपयोगी सामग्रीहरु सहित प्रकाशित हुन लागेको पुष्प बिशेषाङ्कले समस्त पुष्प व्यवसायी, अनुसन्धानकर्ता, नीति निर्माता, सम्बन्धित संघ संस्था एवं पुष्प पारखीहरुलाई महत्वपुर्ण जानकारी तथा सुचना उपलब्ध हुनेछ भन्ने बिश्वास लिदै पुष्प सम्बन्धि लेख रचना उपलब्ध गराउने बिशेषज्ञहरु तथा प्रकाशनमा प्रत्यक्ष सहयोग पुऱ्याउनु हुने सम्पुर्ण साथीहरुलाई हार्दिक धन्यबाद् दिन चाहन्छु ।

श्रीधर कार्की
अध्यक्ष
फ्लोरिकल्चर एशोसिएसन नेपाल

Editorial

We take the pride and pleasure in bringing out the 12th edition of the Souvenir Magazine on the auspicious occasion of Trade Fair- 2008 organized by FAN.

Floriculture business, in context of Nepal, is relatively new one which has shown its remarkable development in the last one and a half decade of organized efforts. The increasing trend of consumerism in the major urban areas and gradual development of flower use has been favoring the growth of this sector. At this juncture, our products are approaching the international market, however, the competitiveness and success in export market can be achieved only if the efforts of private sector are backed by the government facilities and policies.

The needs of the hour are perhaps friendly policy package, quality inputs, institutional credits, effective extension services, infrastructure development etc.

In this edition, we have come up with some research findings, FAN activities, summary of government policy, key findings of floriculture issues etc.

It is envisaged that these articles may be useful and informative to not only people involved in flower industry and those who are likely to venture into this industry, but also to the general public who are interested in flowers and in beautiful environment.

We are greatly indebted to all the contributors of the articles, advertisers and the organizations for their support in bringing this issue of the magazine. We are continuously working on improving all aspects of the magazine and so we welcome comments and suggestions for incorporation into future editions.

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Review on factors affecting the postharvest life of carnation cut flowers

A.B. Pun [1], A. Shrestha[2], S. M. Shakya[3] and U. K. Pun[4]

1 INTRODUCTION

Carnation (*Dianthus caryophyllus* L.) is an excellent and one of the most important commercial cut flower. In Nepal, it ranks the third most important cut flower (Pun, 2004). Cultivation of this cut flower is at its beginning, however, the scale of production and area under it has been increasing very rapidly in Nepal. Further, it has been accepted as an important competitive product for export in the international market (AEC/FNCCI, 2007). Its popularity and domestic demand has been increasing rapidly. Eventually, number of growers for this flower is being increased. Nepal can achieve competitiveness if proper agronomic and postharvest technologies for this cut flower are adopted. Climate of Nepal gives relative advantage over India to produce carnation of international quality especially during summer season (Yanai, 2007). Owing to comparative advantage, it could be expected to export carnation cut flower in the future (Shrestha, 2003; Tamang, 2006).

Postharvest life of carnation is an important aspect. A high quality product along with adequate postharvest life is the significant pre-requisite for economic success of this cut flower business (Rogers, 1962; Staby et al., 1976). The major requirement to transport cut flower to the distant markets is greater shelf life longevity. Therefore, proper postharvest management is a significant issue to maintain flower freshness and longevity (Pun, 2003; Nijasure et al., 2004). Beneficial effect of numerous chemicals adjuvant to holding solutions has been reported to extend flower longevity (Rogers, 1973). These have been accounted for the adjustment of respiration, inhibition of ethylene synthesis, sugar management, water relation, fungal and bacterial growth control in order to improve postharvest life of carnation cut flower.

But, all the stakeholders are confronted with the limited knowledge related to postharvest technologies (Pun, 2003) in Nepal. Still domestic consumers hardly get a minimum quality of carnation cut flowers on one hand, while on the other hand a considerable volume of postharvest losses (25 %) (PHMD, 2005/2006) has distressed growers and other stakeholders. Thus, if we have to compete with International market, development of appropriate postharvest technology is must to ensure adequate vase life and quality of this flower.

2 MATERIALS AND METHOD

This paper was prepared based on the review of several research and technical publications. The information regarding the postharvest of carnation cut flowers was compiled.

3 RESULTS AND DISCUSSION

One of the important characters for carnation evaluation could be done based on the keeping quality of the flowers (Gelder, 1987). Knowledge and technology of proper postharvest handling and treatment of cut flowers is of paramount importance. Further, this flower is most sensitive to ethylene-induced flower senescence (Wodtering and Van Doorn 1988). Thus, for the promotion of this cut flower as an export product, research and study must be directed towards the development of appropriate postharvest technology.

[1] Regional Agriculture Station, Lumle, [2] and [3] IAAS, Rampur, [4] Himalayan Flora Enterprises, Lalitpur

3.1 Flower Senescence

Flower senescence in the carnation can be categorized under two types: climacteric and non-climacteric flower senescence based on presence or absence of an increased rate of ethylene production. Flower senescence in this flower is generally determined by the time of petal senescence (Van Doorn, 2001) that is regulated by increased rate of ethylene production accompanied by an increase in respiratory activity (Halevy, 1986b).

Usually the life span of the petals determines the effective life of the carnation flower. Petal senescence is regulated on the ordered breakdown and remobilization of cellular constituents to other floral organs and other parts of the flower (Borochov and Woodson, 1989; Rubinstein, 2000). Breakdown of cellular components, especially membranes (Adam et al., 1983), macromolecules such as starch, protein and nucleic acid occurs during flower senescence (Borochov and Faragher, 1983).

Postharvest longevity is associated with the rate of metabolic processes (particularly carbon catabolism and loss of water). Flower senescence is particularly related to the practical aspects of postharvest handling of cut flowers. For enhancing the postharvest flower longevity, objectives should be oriented to create situation that inhibits ethylene production and retards metabolic processes (Halevy and Mayak, 1981).

3.2 Preharvest factors affecting postharvest life of carnation cut flowers

Postharvest life of cut flower is heavily affected by preharvest environmental conditions (Halevy and Mayak, 1979, 1981; Borochov and Woodson, 1987) and agro-husbandry practices (Celikel and Karacaly, 1995). Flower growth and development determines postproduction life as flower senescence depends primarily on inherent carbohydrate level and biophysical condition of the plant (Roger, 1962). Preharvest factors affecting postharvest life of cut flowers comprises both the inherent genetic make of the species and environmental factors.

A wide variation in the postharvest life has been reported on carnation cut flower due to genetic and varietal factors (Bhattacharjee and Saxena, 1998). These variations have been attributed to variation on cell wall thickening and secondary thickening in the flower peduncle, levels of peroxidase and lignification, production of Aminocyclopropane carboxylic acid (ACC) and ethylene forming enzymes (EFE) as well as the genetic makeup of the cultivars (Gelder, 1998).

Primarily the environmental factors such as temperature (Halevy and Mayak, 1979; Nowak and Rudnicki, 1990), light intensity (Nowak and Rudnicki, 1990) and relative humidity (Mortensen and Gislerod, 1999) have been found to influence postharvest life of flowers. It has been claimed that about 30-70 % of the potential postharvest life of many flowers is determined at harvest (Staby et al., 1976.). Carnation flower grown at higher temperature has been found to have longer vase life than those grown at lower temperature (Moe, 1975). Effect of growing temperature on cut flower longevity is mainly related to carbohydrate synthesis and metabolism, water relations, cell membrane properties, and ethylene production and sensitivity (Halevy and Mayak, 1979).

As temperature and light intensity directly influence the photosynthate level in flower tissues, sugar level has been known to be closely correlated with postharvest life of cut flowers (Mastar lerz, 1955). The lower carbohydrate content in petals due to the low temperature and light intensity will result in shorter vase life (Halevy and Mayak, 1979). But, high growing temperature (>25°C) in summer has been reported to have adverse effect on the carnation vase life and low preharvest temperature (23°C) in the summer has found a longer vase life. Increasing the light period is found to reduce the vase life of

the cut flower (Slootweg and Van Meeteren, 1991) that is attributed to slower rate of stomatal diffusive resistance and higher transpiration. Preharvest higher light levels is attributed to lower ethylene production rate than those of low light intensity since conversion of ACC to ethylene is affected by light intensity (Salisbury and Ross, 1985). A high level of relative humidity (>80 % to 90 %) reduces postharvest life of cut flowers (Mortensen and Fjeld, 1995) as the level of calcium content is adversely affected in such condition. Calcium content in the tissue is attributed to influence the structure and function of cell wall and membrane (Ferguson, 1984; Konno et al., 1984). High level of humidity and temperature decrease CO_2 concentration in greenhouse that adversely influences the flower growth and development. Humid air during growth period resulted in uncontrolled water loss during postharvest period (Torre et al., 2003).

An appropriate soil nutrient level is known to improve the plant growth and development and as a consequence; the longevity of cut flower is affected. Toxicity and deficiency of soil nutrient adversely affect chlorophyll content that in turn reduces photosynthesis process of the plant. A greater longevity of cut flower has been reported at low level of nitrogen that is associated with abscissic acid synthesis of petal (Menard et al., 1996). High phosphorus and potassium fertilizer has been reported better for the flower longevity. High salinity of soil markedly reduces longevity of flowers.

Low irrigation regime is reported better than wet and normal irrigation in terms of flower vase life. Frequent irrigation regimes have been found to increase the sensitivity to ethylene and resulted in a shorter flower life (Mayak and Kofranek, 1976).

Stage of maturity has been known to influence flower postharvest longevity as harvesting at paintbrush stage of flowers has been found to be associated with longer vase life. A decreasing trend of total and reducing sugar is observed in leaves, whereas increasing trend in the total and reducing sugar of corolla from harvest towards senescence (Bhattacharjee and Rajan, 1998). Pollinated carnation flower is known to reduce longevity of flowers because of the increased ethylene production (Nichols, 1979).

3.3 Postharvest factors affecting postharvest life of carnation cut flowers

The metabolic process that continues after flower harvest is heavily affected by environmental factors. These include temperature, relative humidity and light intensity. Besides, postharvest life of cut flowers is mostly correlated and affected by water relation, carbohydrate metabolites, ethylene sensitivity, micro-organisms as well as the physical and mechanical exertion during postharvest period.

High temperature reduces postharvest life of most cut flowers. It is closely related to water balance and metabolic process of cut flowers, and thereby adversely affect the longevity of flowers. The most important metabolic process is respiration that increases with increase in temperature (Pun, 2000). Similarly, water loss via transpiration and surface evaporation is proportionately related with temperature as increased temperature causes increased water loss, and resulted in shorter vase life of the cut flowers.

High relative humidity and little or no air movement in the holding atmosphere are beneficial for prolonging the vase life of cut flower during postharvest (Doi et al., 2000). The effect of relative humidity has been closely related with the water content of cut flower. Transpiration is proportional to the difference between vapor pressure in the air and that in the surface of leaves and petals of the flowers (Salisbury and Ross, 1992).

Light intensity during flower storage has been found to have very little effect on the vase life of flowers (Nowak and Rudnicki, 1990).

However, flowers in low light intensity in the storage without sugar treatment have been shown to have reduced sucrose, glucose and fructose content of rose petal cells (Van Doorn et al., 1991a).

3.4 Ethylene and respiration

Flower senescence of carnation cut flower is mainly associated with the effect of ethylene (Mayal and Kofraneck, 1976). Peak in ethylene production followed by an increase in respiration has been reported in climacteric flower senescence (Nichols, 1966). Ethylene is produced as a result of ACC synthesis activity, where conversion of S-adenosylmethionine (SAM) to ACC and oxidation of ACC to ethylene takes place (Park et al., 1992). Ethylene production increases over 1000-folds during flower senescence. The level of response to ethylene or ethylene synthesis varies upon genetic make up of species and/or cultivars (Serrano et al., 1991).

Ethylene sensitivity is an important determinant of flower longevity in carnation and is affected by several factors among which the two main factors are physiological age and temperature. Pollination accelerates senescence as it leads to a rapid increase in ethylene production resembling the climacteric response (Bradt, 1987; Hakevy et al., 1984; Neill, 1993). The cultural practices and postharvest handlings also affect the longevity and sensitivity to ethylene. High temperature stress and water stress have been known to predispose of plant to ethylene action (Hsiao, 1979). Sensitivity factor of flower senescence is a function of growth regulators; a short chain fatty acid in pollinated carnations.

3.5 Water relation

Water relation in cut flowers is one of the main factors affecting vase life (Halevy and Mayak, 1981). The rate of water loss is higher at higher temperature and water uptake is higher at the latter condition (Shvarts et al., 1997). Transpiration rate and the capacity of the flower tissue to retain water, as well as the water uptake rate and transport, determine the water balance in cut flower (Halevy and Mayak, 1981; Van Doorn, 1997). Water relation has been known to be influenced by high vapor pressure deficit (VPD) by hastening the transpiration rate, and subsequently by high temperature raising the osmotic potential, which is partly caused by the consumption of respiratory substrate (Doi et al., 2000).

Plugging of xylem vessel elements of cut flower is reported by the cause of metabolism occlusion, microbial origin (Burdett, 1970; Parups and Molnar, 1972), microbial contamination (Zagory and Reid, 1986) and the presence of air emboli in the vascular system (Van Doorn, 1997). Air entering into xylem vessels of cut stem end at the time of harvest and transport strongly inhibits water uptake (van Meeteren and van Gelder, 1999). The water balance of the cut flowers is the relation between the capacity of the flower for water uptake, water transport, and water loss (Aarts, 1957). The range of water uptake is the maximum for the first 12 to 48 h after harvest, followed by a declining rate to senescence (Carpenter and Rasmussen, 1973). The influence of water uptake may not be pronounced to flower life until exceeded by water transpired from the flower.

Tap water in vase solution is resulted in shorter vase life and influences efficacy of chemicals used in the solution (Rogers, 1973; Halevy and Mayak, 1981). On the contrary, use of distilled water as the vase solution is a common practice in postharvest studies of cut flowers (Reid and Kofranek, 1980).

3.6 Postharvest treatments with chemical preservatives in vase solutions

The use of preservative solution to promote the quality and prolong the vase life of cut flowers has been well known (Halevy and Mayak, 1981). In general, flower preservatives are composed of sugar, ethylene inhibitors and germicides.

Sugars applied to vase solution; as substrate for respiration and cell wall as well as osmolytes; is effective in extending the vase life of carnation cut flowers (Ichimura, 1998; Paulin and Jamain, 1982; Koyana and Uda, 1994). Increase in beta–galactosidase activity and reduction of cell wall galactose content are closely associated with senescence of flower petal in carnation (de Vetten and Huber, 1990). Effect of sugar on the extension of carnation flower vase life is known to be associated with improved water balance and inhibition of ethylene production (Dilley and Carpenter, 1975). Besides, expression of flower color has known to be associated with sucrose-induced anthocyanin biosynthesis gene expression (Kenis et al., 198; Koyana and Uda, 1994).

Low level of carbohydrates induces endogenous ethylene production and increases flower senescence (Fjeld, 1991). Addition of sugar in vase solution increases the flower longevity due to its action of carbohydrate support and acts of osmotically active molecule and subsequent water relations (Kuiper et al., 1995). Increase in beta–galactosidase activity and reduction of cell wall galactose content is closely associated with senescence and flower petal in carnation (De Vetten and Huber, 1990).

Silver nitrate has long been suggested as an additive to vase solutions for extending vase life of ethylene sensitive flowers (Beyer, 1976), and is attributed to inhibiting the action of ethylene. However, movement of silver ions has been reported to be very slow in the stems of cut carnations (Kofranek and Paul, 1976). But, if the silver is present as the silver thiosulfate complex (STS) ($AgNO_3$ and $Na_2S_2O_35H_2O$); movement is improved and is effective against the action of ethylene (Veen and Geijn, 1978).

STS is well known as an effective pulse treatment for extending the vase life of carnation cut flower, that is attributed to inhibiting action of ethylene biosynthesis and action of delaying the increase in membrane permeability (Faragher and Mayak, 1984; Sylvestre and Paulin, 1987) and inhibiting the decrease in membrane fluidity (Faragher et al., 1987). The effect of STS for the inhibition of autocatalytic ethylene action is known to be through preventing ethylene from binding to the receptor site (Veen, 1979; 1983). STS has been reported to prolong the vase life by 15-18 days as compared to 6-8 days in control. The effect of STS on the vase life has been found to be varied among the growers and cultivars from 115-148 % and 115-128 % respectively. The effectiveness of STS increased with ageing of plant from 115 to 147 %. Recently, the effectiveness of ethylene inhibitor; 1-MCP has been known in extending the vase life of carnation flowers (Serek et al., 1994, 1995).

The use of mineral ions acts as germicides, the most common and active of which is silver ion (Ag^{++}). Among various germicides, 8-Hydroxyquinoline (HQ), mainly hydroxyquinoline sulfate (HQS) and hydroxyquinoline citrate (HQC) @ 200 to 600 ppm are the most commonly used germicides (Ringe, 1972; Marousky, 1972, 1973). As a broad spectrum bactericide and fungicide, HQC has been found to reduce physiological stem blockage, which is attributed to chelating properties of the quinoline ester (Marousky, 1972). Although HQS and HQC have little effect on the flower longevity, they have beneficial effect on water balance of flowers, that is attributed to its effect on stomatal closure (Stoddard and Miller, 1962) and suppressing microbial growth. To some extent, HQS delays ethylene emanation in carnation flowers (Wilkins and Swanson, 1975).

4 CONCLUSION

Several factors have been known to influence the postharvest life of carnation cut flowers. These must be taken into consideration for the adequate postharvest life and quality of the cut flower. The practice regarding the postharvest management of carnation cut flower is very poorly adopted in Nepal.

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Arthropod and insect pests of cultivated Roses in Kathmandu

Vinod K. Thapa and Prem B. Budha

ABSTRACT

Four sites, two under controlled cultivation in poly-house and two openly cultivated were selected from Kathmandu district to find arthropod pests from January to December 2005. The main pests in the studied nurseries were mites, aphids, beetles, and lepidopteran larvae. The major pest in controlled nurseries was Red spider mite *Tetranychus* sp. The arthropod pests in openly cultivated fields included Rose colored aphid *Macrosiphum rosae*, beetles *Diamorpha dejani*, *Hespera* sp. and *Popilia magnicolis*. Likewise, larvae of family Lymantridae were also found damaging foliage of the rose plants in both types of nurseries.

Key words: Nurseries, Rose, arthropods, pests, mites, aphids, Kathmandu.

INTRODUCTION

Floriculture in Nepal is newly established business, which has shown remarkable development in last twelve years. Consumption of floricultural product is symbolized as civilization. The increasing number of consumers and use of varieties of flowers in urban areas has favored the growth of this sector. Rose is one of the most demanded flowers in Kathmandu having hundreds of varieties. The vast majority of rose species are deciduous but some are evergreen which have been grown throughout the year in different agro- climatic condition ranging from tropical to temperate regions of Nepal. Commercialization of roses in Kathmandu attracts farmers to import varieties of roses from other countries. With the increasing number of imported rose varieties, farmers have faced difficulties to maintain rose health for the high value price in the market. The major concerned diseases of roses are downy mildew, powdery mildew besides attack by borers, nematodes and leaf miners. Arthropods and insect pests are one of the major problems in floriculture business, which is still ignored field of investigation.

Arthropods and insect pests are major concern to human being due to their impact upon directly related human economic activities. Many commercial crops, vegetables, and economic plants in agricultural fields and nurseries do not give expected yield due to damages done by a number of pest species. Rose plants have been also attacked by a number of pests. Mites, aphids, thrips, scale insects and lepidopteran larvae are some important rose pests. But the species level damage pattern by these pests is not yet studied in Nepal. Red spider mite *Tetranychus urticae* was reported as the main pest of roses (Hole and Salunkhe, 2005). Mites are known to migrate from various alternate hosts like weeds to the main crops (Banerjee, 1971).

Aphids damage their host plants directly through sucking their saps and also indirectly acting as a vector for plant viruses (Chakrabarti, 2006). Discolouration of leaves, stunted growth and gall formation are some symptoms of aphid infestation. However, there are more than 177 species of aphids under 77 genera have been described from Nepal so far (Thapa, 2000) but these specific impacts on rose plants have underestimated in floriculture business. The Himalayan region as a whole is very high in endemic aphid fauna. Almost 238 species of aphid are endemic to the Himalaya (Chakrabarti, 2006). All these species have been reported either from agricultural crops or from herbaceous plants. Species of rose aphids including other pests

The Central Department of Zoology, Tribhuvan University, Kirtipur, Nepal.
vinodthapa@hotmail.com& prembudha@yahoo.com

and their damage pattern have been exclusively understudied in Nepal. Farmers of rose gardens and nurseries have been worried about damage done by these pests and apply acaricides and insecticides to control mites and aphids respectively. This paper aims to provide information which arthropod and insect species attack rose plants in commercial cultivation. It will help concerned authorities, business personnel, farmers and other interested people in developing future strategies in the floriculture business.

MATERIALS AND METHODS

Study Sites

The study was carried out from January to December 2005 in four selected rose cultivation sites in Kathmandu district. Rose plants cultivated in four nurseries: two protected poly-house nurseries and two open gardens were selected. Amar Nursery and Dr. Zakir Husain Rose Garden are openly cultivated rose fields located in Naikaap and Kirtipur respectively. Protected nurseries were The Standard Nursery (TSN), Bansbari, and Fresh Flower Nursery (FFN), Chalnakhel.

Methods

Arthropods and insect pests were collected from both protected and open fields by hand picking the large specimens, brushing the affected plant parts in Petri dish and by using insect sweeping net. The pests large enough to be seen by naked eyes were collected by handpicking method with the help of forceps. Specimen like aphids and mites, which occurs in clusters, was collected by using soft brush and also by knockdown process. Sweep net was used for collecting flying insects. All the collected specimens were preserved in 70% alcohol with few drops of glycerin added in it to avoid evaporation of preservatives and counted either with naked eye or under stereo binocular microscope in lab. All sorted specimens were numbered and kept in well-labeled separate vials. Adult insect was then killed by putting them in the killing jar containing cotton soaked in carbon tetrachloride. They were stretched by putting them in the setting board. Collected specimens were identified up to species level at National Agricultural Research Council (NARC), Khumaltar, Natural History Museum, Swoyambhu, Kathmandu and the Central Department of Zoology, Tribhuvan University (CDZ/TU), Kirtipur consulting experts and using literature (Borror and Delong, 1971; Gupta, 1985; Sharma, 2000).

The caterpillars found as pests were reared in the lab feeding them regularly with fresh rose leaves till they reached pupation in the rearing cage. Pupal stages were kept in the lab till the adult insect emerged out and identified.

The microscopic species were photographed by a digital camera NIKON D50 fitted with a stereo binocular microscope supplied with light at the Center for Biological Conservation Nepal, Kirtipur.

RESULTS AND DISCUSSION

Altogether 15 species of arthropods and insects were reported during the study that included 2 species of aphids, 8 species of beetles, 3 species of moths, 1 species of red spider mite and one nymphal stage of Ixodid tick (Table 1). The highest diversity of pests was reported from DZHRG, Kirtipur but the least reported from FFN, Chalnakhel. The major rose pests were Rosy aphid *Macrosiphum rosae* and Red spider mite *Tetranychus* sp. They were reported in both open gardens as well as in the polyhouse nurseries. *Tetranychus* sp. and *M. rosae* were previously identified as the pest in rose plants (Gupta, 2003; Sharma, 2000). There were high number of beetle pests found in openly cultivated rose garden in addition of the aphids, thrips and mites. Evans (2001) reported aphids, thrips, scales in open cultivation of rose plants in Kathmandu and their cultural and chemical methods for controlling diseases and insect pests particularly aphids, thrips and scales.

Table 1. Pests of rose plants at selected gardens and nurseries in Kathmandu

Name	Common name	1	2	3	4	Feeding site
Homoptera: Aphididae						
1. *Macrosiphum rosae*	Rosy aphid	+	+	+	+	L
2. *Rhodobium porosum?*	Green aphid	+	+			L, S, B
Coleoptera: Chrysomelidae						
3. *Hespera* sp.	Flea beetle		+	+		L,B
4. *Popilia magnicolis*	Shining leaf Chafer		+	+		L,B
5. *Diapromorpha dejani*	Click beetle		+	+		L, B
6. *Cryptocephalus* sp.	leaf beetle		+			L
7. *Aulacophora* sp.	leaf beetle		+			L
8. *Dercetis flavocicta*	leaf beetle		+	+		L
Coleoptera: Cruculionidae						
9. Weevil sp. A			+			L,B
10. Weevil sp. B			+			L,B
Lepidoptera: Lymantaridae						
11. *Malachitis* sp.	Caterpillar	+	+	+		L, B
12. *Euproctis* sp.	Caterpillar	+	+			L, B
Lepidotera: Noctuidae						
13. Noctuid	Caterpillar		+	+		L, B
Acarina: Tetranychidae						
14. *Tetranychus* sp.	Red Spider mite	+	+	+	+	L
Acarina: Ixodidae						
15. Ixodid Tick nymph			+			L

Note: *1, 2, 3 and 4 represents TSN, DZHRG, AN and FFN respectively. B- buds, L- leaves, S-stem*

Beetle pests *Diamorpha dejani, Popilia magnicolis, Hespera* sp. and two species of unidentified weevils were found to feed upon both foliage and rose bud. *P. magnicolis* and weevil caused holes in the petals of flower thus discolouring and distorting the shape of flower. Other beetle species *Cryptocephalus* sp., *Aulacophora* sp., and *Dercetis flavocicta* were found to feed on young leaves. None of the beetles were found in the poly-house nurseries. All lepidopteran larvae also found to be the major causes of damage in rose both buds and leaves.

The diversity of rose pest is comparatively higher in open fields than controlled environment (Figure 1). Ticks and beetles were found only in the open rose cultivation; however the pest status of ticks is doubtful. It may be due to regular gazing by cattle around the rose garden. No beetle pest was reported from the poly-house nurseries in Kathmandu. The mites and aphids populations were observed in both open gardens and poly-house nurseries and their population recorded at peak in autumn and lowest in the winter season. Sharma and

Pandey (1981) observed the highest population of mite *Tetranychus cinnabarinus* in May and very low in winter (Dec- Jan).

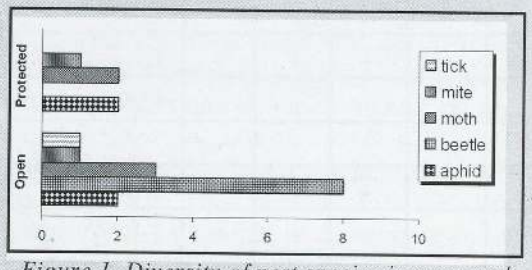
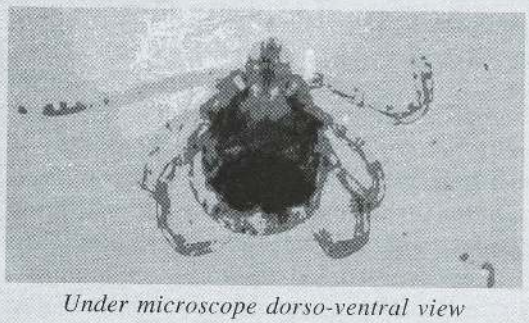


Figure 1. Diversity of pest species in open and controlled rose cultivation

Knowledge about the arthropod and insect pests found to be poor to gardeners and farmers. The cultivation of resistant varieties and application of cultural, mechanical, biological control and need based application of acaricides are practical solution to the problem encountered in management of mites (Evans 1992). However, some of the farmers were found to apply pesticides to control mites and insecticides. Mite population can be effectively controlled if the acaricide is applied, during March-April at initial stage of infestation. But chemical control of rose pests was not applied in all study sites.

In colony

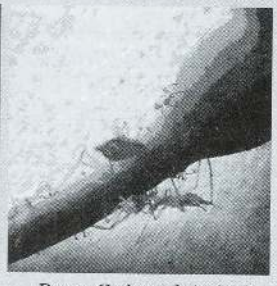
Close view



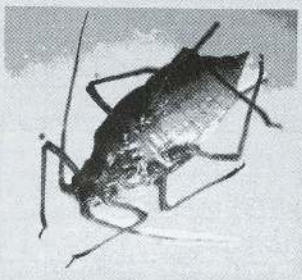
Under microscope dorso-ventral view

2a. Red Spider Mite *Tetranychus* sp.

Green Aphid (Rhodobium porosum?)



Rose Colored Aphid Macrosiphum rosae *in colony*



Macrosiphum rosae (Ventral view)

2b. Aphids *Macrosiphum rosae* and *Rhodobium porosum?*

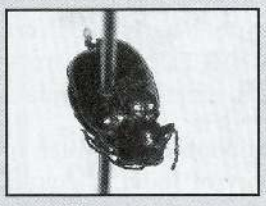
Plate 2. Mites and Aphids Reported from Rose Nurseries in Kathmandu

Cryptocephalus sp.

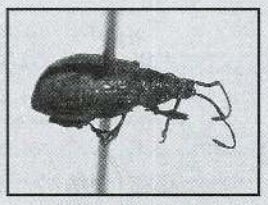
Diapromorpha sp.

Aulacophora sp.

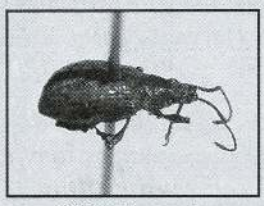
Decertis flavocicta



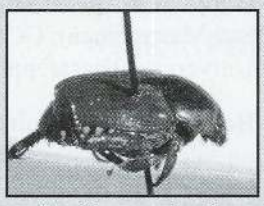
Hespera sp.



Weevil sp. A



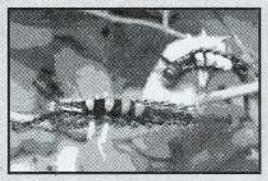
Weevil sp. B



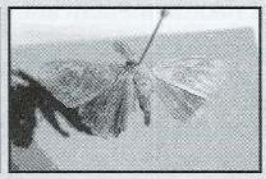
Popilia magnicolis

Plate 3. Beetle Pests of Cultivated Roses in Kathmandu

The leaves by producing silk threads.

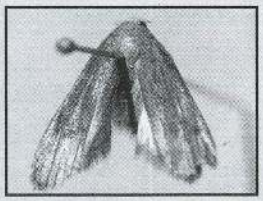


Caterpillar of Malachitis sp.



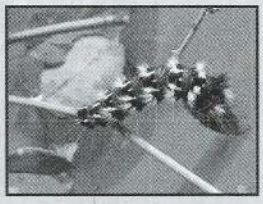
Caterpillar feeding leaves

Malachitissp.



Noctuidae Moth

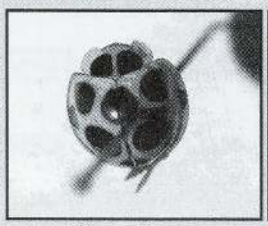
Euproctis sp.



Reared caterpillar B

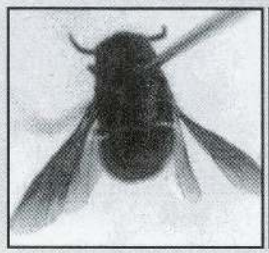
Plate 4. Lepidopteran Pests of Roses in Kathmandu

Note: 1, 2, 3 and 4 represents TSN, DZHRG, AN and FFN respectively.



Oenopia sp.

Coccinella septumpunctata



Cuckoo wasp (Chrysiidae fly)

Adalia twelvepunctata

Spider

Plate 5. Predators of Rose Plant Pests in Kathmandu

Conclusion

Aphids, mites, beetles and caterpillars are some rose damaging pests reported. The major rose pests were Rosy aphid *Macrosiphum rosae* and Red spider mite *Tetranychus* sp. They were reported in both open as well as in the poly-house cultivation. Application of control measures against arthropod and insect pests was not considered seriously by gardeners due to lack of proper knowledge of pest biology and recommended pesticide and acaricide against them.

Acknowledgements

We would like to express our heartfelt gratitude to Dr. Umed Pun, Mr. Sanjaya Bista, Mr. Anand Sthapit, Mr. Bhaiya Khanal and Mrs. P.K. Shrestha for identifying mites and insect pests of roses.

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Sharma and Pandey, Y.D. 1981. Seasonal incidence of *Tetranychus* spp. on four improved varieties of brinjal. *Contribution of Acarology in India*. pp. 46.

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■

An overview of Key Findings & Recommendations of Floriculture studies in Nepal

Lok Nath Gaire [1] and Janga Bdr. Tamang [2]

BACKGROUND

In Nepalese floriculture sector, few studies have been completed since 2001 to recently on policy level. These studies have highlighted important issues in this sector and have been accordingly recommended to various bodies as well as entrepreneurs. These issues and recommendations have been summarized as follows and may be useful to many of the researcher, advisor, policy makers, entrepreneurs and others.

A) **A Report of Symposium on Prospective of Floriculture Industry in Nepal,** 2001 (Organized & publish by FAN)

FINDINGS

1) There are commercial nurseries in 18 districts out of 75 districts in Nepal. Most of them are producing roses, carnation, gerbera, cymbidium, lilium, tube rose, African violet, Anthurium, gladiolus, etc.
2) Domestic market turnover is increasing as demand for cut flowers, orchids as well as ornamental plants is growing.
3) Constraints:
   - Yet to see this sector organized
   - Lack of expertise for extension and R&D
   - No fiscal or market promotion support
   - Poor quality output
   - Poor post-harvest handling infrastructure
   - No solid marketing partnership
   - No auction centre/wholesale centre
   - Lack of cooling space in the airport and long transit time
   - Limited availability of air cargo space
4) Systematic production of cut-flowers has gradually reduced imports
5) Some of the entrepreneurs are looking towards the prospects of exporting to India, Bangladesh and even to Gulf markets.
6) Suitable projects for foreign joint ventures are: rose, carnation, orchids, chrysanthemum, ornamental plants, seeds, etc.
7) Agro-climatic condition is suitable, it has got national priority industry status, more enterprises are coming up, international market demand exists and is growing,

RECOMMENDATIONS

1) Form a joint committee of government and FAN to initiate efforts for production development of floriculture products for exports.
2) Market promotion missions to the major potential markets after identifying interested parties.
3) Seek domestic and international commercial expertise on production methods and techniques. And carry out commercial trial production with proper market linkage.
4) Government lobby to bring foreign investors and provide adequate facilities.
5) Government commitments on building necessary infrastructures and favorable policy environment.

B) **A Study on Floriculture Development in Nepal, 2002** (Centre for policy research and analysis (CPRA) Katmandu.)

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[1] *Vice President of FAN* [2] *Program Coordinator of FAN*

FINDINGS

1) Nepal has good potential domestic demand and current production, and domestic consumption is growing at a healthy rate.
2) Western markets for "traditional" cut flowers are huge, sophisticated and fully matured. India, Bangladesh, and Pakistan could also be potential export markets in future.
3) Nepal is not ready, in terms of scale and infrastructure base, for flowers export to a meaningful level and may not be able to penetrate overseas markets on its own. Foreign collaborations with established players in the importing countries are essential to achieve success.
4) Many small entrepreneurs engaged in the nursery business are finding difficulties to adapt and develop export-oriented production in the absence of support from stakeholder institutions and government.
5) Production is concentrated in Kathmandu Valley. Limited production takes place in the Tarai and other hill districts, mostly for supply to Kathmandu market.
6) Infrastructure support is virtually nonexistent. Lack of diagnostic and research support is costing the development of this industry.
7) FAN with the assistance of AEC has been undertaking pioneering activities including surveys and micro studies to support the business.
8) The industry is entirely private sector-led, and the government agencies have virtually played no role thus far in the development of this industry.

RECOMMENDATIONS

1) FAN should take lead in the growth of the floriculture industry. It should undertake policy advocacy, information and intelligence services and Networking.
2) Build a permanent wholesale market complex that is complete with an auction floor, refrigerated system, grading and packaging facilities, good water supply, electricity services, information exchange counter, etc.
3) NARC's research should be market driven. Formal linkages should be stablished with the private sector for communication and research. NAST and Do PR should begin concretizing and directing their efforts to the research program on promising endemic or exotic plants.
4) Horticulture Directorate should create a small Floriculture Unit to be the focal point of floriculture activities at the government level and should launch Farmer-focused extension and training programmers.
5) Complete construction and operation of cold-storage or cooling facilities at International Airport that has been languished for long despite fund availability.
6) Provide over the counter green-channel facility at the Airport for export clearance.
7) In general current regulations permit export on advance payment and L/C basis only. It is also very necessary to permit receipt of export payments on consignment basis and provide incentives and policy support to export to India and the SAARC region.
8) Small and medium growers should form commodity groups (e.g. rose group) and develop cooperative relations to be able to export off-season flowers to India. This is essential to withstand the onslaught of larger players in the market.
9) Institute of Agriculture and Animal Sciences (IAAS) should be encouraged to produce horticulture with floriculture minor graduates with more business orientation.

C) **Flower Marketing in Kathmandu Valley, 2002** (District Agriculture Development Office, Kathmandu)

FINDINGS

1) Floriculture has become one of the income generating lucrative businesses in Nepal as was identified by the Agricultural Perspective Plan (APP)
2) For sometime increase in area as well as production have not resulted into improvement in the living standard of those involved in this business due to the several problems.
3) Apart from Kathmandu valley other ideal production districts are Chitwan, Makwanpur, Nawalparasi, Rupandehi, Bara, Parsa, Sarlahi, and Dhading. Kathmandu as well as some of the Indian markets is quite proximate to these districts also.

RECOMMENDATIONS

1) Import and export regulations of floriculture products should be reviewed and revised in order to make it business friendly.
2) SPS systems should be practiced to ensure market requirements in Nepal as well as in India. Research and development programmers should be based on the needs of Nepalese growers.
3) Irrigation and market infrastructure facilities should be extended to the growers. Emphasis should be given to the post harvesting practices such as cleaning, grading, packaging, storing, etc. and market information services to the growers.

D) **An Insight into Floriculture Scenario of Nepal 2003** (FAN)

FINDINGS

1) There are three broad sub-sectors in the floriculture business in Nepal: nurseries, cut flower growers and retailers and tissue culture industry.
2) Domestic market for floriculture products is flourishing at healthy rates.
3) Major problem areas are: government policy and flower export friendly environment, infrastructure, technical manpower, and R&D support.
4) A wide range of ornamental and exotic plants and flowers are available in the Country. Commercialization of such plant species and export to overseas market should be considered.

RECOMMENDATIONS

1) There should be coordination between the private sector, donor agencies and the government for the R&D activities.
2) The role of different stakeholders should be clearly defined.
3) The government should refer to the plan and policies of the neighboring countries before any domestic policies and plan are formulated to create a favorable policy.
4) All entrepreneurs should come under the one umbrella of FAN. FAN should also work to bring all stakeholders, growers, traders, and exporters together.
5) A package of incentives including duty free facilities for imported inputs and equipment, subsidized electricity and water, subsidized airfreight, subsidized loans, etc. should be introduced
6) Facilities should be extended to build cold rooms and land should be made available to the growers of floriculture products on a long-term lease basis.
7) Suitable market promotion techniques should be considered by the government for the introduction of Nepal as a floricultural products exporter.
8) Entrepreneurs should work as one unit by organizing themselves for the overall development of floriculture in Nepal.

9) Entrepreneurs should specialize in this business and work for the development of their expertise as well.

E) **Identification Mission Report: Flower, Dairy, and Seed Development in the Kingdom of Nepal, 2005** (Government of Israel, Ministry of Foreign Affairs and Ministry of Agriculture and Rural Development)

FINDINGS

1) The floriculture sector is relatively young and has developed in the light of growing demand in the local market.
2) The climate of the Kathmandu valley gives a relative advantage over India in the summer, and allows production of high quality flowers in a wide range of crops: Gladiolus, Carnations, Roses, Gerbera, Tuberoses and Marigold.
3) Some of the nurseries have the capacity to produce more than a million seedlings from tissue culture for export to Netherlands and Norway. Items include 10 species of aquarium plants, banana, orchid and Chrysanthemum. Attempts to export to Japan failed due to competition form Chinese cheap seedlings.
4) Attempts to export carnations to Japan resulted in a high return per flower, but were not economic due to the high airfreight. Attempts are being made to export to India in summer months (June-Sept), when prices are high.
5) In January carnation quality was high, while the quality of rose and gerbera was rather poor. There is severe damage by low night temperatures. Gladiolus is not grown during this season as the crop is very sensitive to frost.
6) Main constraints:
   - Lack of know-how, irrigation, green houses, packing houses, cooling facilities, etc.
   - Lack of electricity infrastructure
   - Lack of access roads
   - Lack of cooling facilities at marketing centre and the airport
   - Limitations in the field of post-harvest technologies
   - Deficient R & D and Agricultural extension system

RECOMMENDATIONS

1) Perform a market survey in the target countries: India, Bangladesh and the Gulf States
2) Decide which crops to focus on for export, based on the results for example export of carnations to India in summer should be explored
3) Efforts to acquire technical know-how, development in propagation materials, planting, growing, irrigation and fertilization.
4) Improve access roads to the farms and develop electricity sources and establish packing houses, cooling facilities etc. in farms as well as in the marketing centers.
5) Improve access roads to the farms and develop electricity sources and establish packing houses, cooling facilities etc. in farms as well as in the marketing centers.
6) Organize refrigerated transport facilities and cooling houses at the airport.
7) Identify funding for the establishment of infrastructure and training of farmers in order to achieve high quality floriculture products delivery and to provide suitable conditions for market competitiveness.

F) **Baseline study on The Status of Nursery Business in Kathmandu Valley**, 2006 (FAN)

FINDINGS

1 Production Related Problems

- Disease and Pest infestation mainly in seasonal flowers

- Poor Quality Seed in seasonal flowers
- Expensive Seed in seasonal flowers
- Land Unavailability

2 Technology Related Problems

- Lack of Knowledge on Plant Propagation
- Lack of Knowledge on Plant Care and Management
- Lack of Knowledge on Nursery Management

3 Marketing Related Problems

- Lack of Proper Price Fixation Mechanism
- Lack of Marketing Knowledge and Information Flow

4 Policy Related Problems

- Lack of Clear Government Policy on Flower Nursery
- Lack of Coordination and partnership among public and private sector
- Lack of Effective Rules and Regulations

5 Financial Related Problems

- Lack of Sufficient Fund
- Difficulty in Getting Loan from ADB in low interest rate

RECOMMENDATIONS

1 **Hybrid Flower Seed Production** (government and private sector should cooperate and coordinate to initiate the hybrid seed production in the country).

2. **Quality Control of the Imported Nursery Inputs** by governmental agencies (DADO, Seed Quality Control Centre,) FAN should coordinate with these agencies for the monitoring of the flower seed in the market. Similarly, quarantine laws should be strictly employed during the import of planting material from India and other countries.

3. **Coordination between Government and Nursery Business should be** timely and adequate communication and coordination

4. **Proper Research on Disease and Pests** have been identified as the major limiting factors in nursery business. Therefore, immediate action for research in these aspects. Problem based research should be initiated to develop the prevention and control mechanism and demonstration of the research output should be done for the up scaling of the findings.

5. **Market Promotion and Regulation** should be some mechanism for the market promotion. The marketing channel should be established and a wholesale market should be established for the seasonal flowers. There should be strong regulation, quarantine and quality control mechanisms for the import of perennial plants.

6. **Replacement of the Import of** tropical and subtropical perennial plants is possible in Terai region of the country such as, Rupandehi, Chitwan, Bara, Parsa, Morang, etc districts. Similarly, temperate plants can be produced in the Kathmandu valley and adjoining hilly districts. Therefore, decentralization of nursery business is necessary to develop this sector as the prosperous industry. The FAN should take initiative to establish wholesale nurseries in the country with the coordination of the government and the private sector.

7. **Quality Control of Nursery Products** should be improved for the prosperity of the business. Minimum standards for the products and services should be fixed by the FAN and other concerned agencies for quality assurance.

8. **R and D** should take in specific issues of Nursery entrepreneur. It should take initiatives to develop the private-public partnership for long term and short term R and D in nursery sector. The research priorities could be disease and pest,

marketing analysis and pricing mechanism, propagation and plant care and management, etc. For the development initiatives, the possible area could be hybrid seed production, tissue culture and market promotion, etc.

G) Trade Competitiveness of the Floricultural Sub-sector in Nepal, 2007 (FAN)

FINDINGS

1) Altogether 550 small flowers and plants growers employing 2500 persons
2) (60%women) in 34 districts of Nepal have invested about NRs.375 million in 80 ha of land (32 ha covered) and had turnover of NRs. 230 million in 2006. The study has identified 14 districts with 7 million population having prospects for floriculture production in Nepal. Land under cultivation can be increased to 1000 ha within 5 years if some of the development constraints are addressed properly. This sub-sector is thriving without well-defined and clear government policies, strategies and incentives.
3) A cost-benefit analysis of selected cash crops in Chit wan district show that the farmers make highest return from flower cultivation - 3 times and 13 times as against the returns from radish and beans respectively. A comparative yield analysis shows that in Chit wan district bulb output was 3.5 times more than that of the Hills of Kalingpong (India).
4) In five years time export of floricultural products grew by 7 times to Rs. 32.6 Million15 in 2005/06 as against Rs. 4.0 million in 2001/0216. The Netherlands, the USA, Italy, Denmark, Japan and India are the major markets for Nepalese floricultural products. Items being exported from Nepal include tissue-cultured plants, tree cuttings, cut flowers, bulbs, tubers, rhizomes, foliage, dry flowers and ornamental plants.
5) Major constraints are related to absence of government policies and strategies, lack of information on technology and technical experts, inadequate export management system, lack of adequate finance, inadequate infrastructures, high airfreight charges, etc.

RECOMMENDATIONS

1) **The government should** launch a clear policy and action programs with a tailored package of incentives that include
   A. duty waivers on imports of all foreign inputs and materials required for industry;
   B. subsidies on air-freight, interest rates, greenhouse construction and related materials, irrigation, electricity, supply of planting materials, land procurement at suitable locations, cooling chamber, refrigerated vehicles, etc.;
   C. construction of wholesale market in Kathmandu and cooling storage at international airport;
   D. provisions for HRD under the Institute of Agriculture and Animal Sciences for specialized degree programmes, training programme, R&D, extension services, etc.;
   E. simplification of procedures applicable on imports and domestic movements of methyl bromide, sulphur, and nitrate required for soil and plant treatments;
   F. Arrange a special market promotion campaign to boost Nepal's image in foreign markets.
2) **Floricultural entrepreneurs should**:
   A. identify matching potential buyers which can import exotic and special types of flower bulbs, live plants, cut flowers and foliages;
   B. be innovative in product and market selections as there is no need for all to focus on the same product and market;

C. take measures not only for standardization of packaging (sizes, materials, logos) and labels but also in reducing the cost components;

D. develop cold chain management protocols (and post harvesting techniques) to increase the storage and transit life of the products.

3) FAN and AEC/FNCCI should

A. engage in policy lobbying based on interaction programs with stakeholders;

B. develop linkages with academic and research institutions IAAS (Rampur), NARC, CINAS, HDD, FDC, etc. and organize training and research programs;

C. Assist entrepreneurs in identifying innovative ideas for new products and new markets based on marketing research;

D. Disseminate up-dated information on market requirements and prospects; and

E. assist to take all measures in reducing transportation, packaging, logistic and infrastructure costs.

4) Donor agencies can assist in:

A. developing linkages between Nepalese exporters and matching partners/ importers in the major markets;

B. providing supports to set up infrastructure like Wholesale markets in Kathmandu and Chitawan, provide information network on such products, and transport supports to exportable products;

C. organizing market promotion visits and buyers sellers meetings for the entrepreneurs having export capabilities; and awarding training to farmers to improve agronomic and post harvest handling practices.

■

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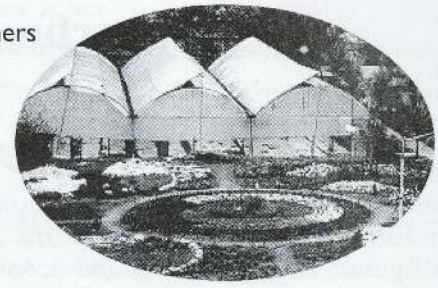

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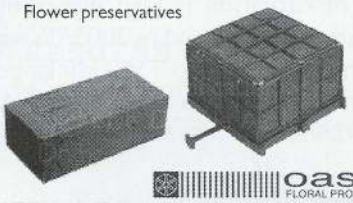

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Floriculture Development in Nepal: Opportunities and Challenges.

*Ganesh Shakya**

BACKGROUND

It is all the time for sure that flower makes people happy and it has become an indispensable part of human life. It has religious, cultural, social and economical values. To worship Gods and Goddesses, to pay last tributes and to decorate houses and rooms, or to adorn women's beauty, and to greet or farewell our guests, we need flowers.

Although, not for the commercial purpose, the transaction of flowers particularly in Kathmandu has been found since the early days. Some 40 years ago, the *Malis* (gardeners) of core Kathmandu cities used to sale the flowers early in the morning visiting door to door. The typical word they use for selling flower was "SWAAN MAALA" with a meaning of "Do you need flowers?" A barter system was there such as they exchange flowers with broken rice. Besides door-to-door sales, these *Malis* used to sell the flower particularly in the temple areas. These things reflect the religious and social values of flowers. Traditionally grown flowers are Marigold, Makhmali, Dahlia etc.

TOWARDSCOMMERCIALIZATION

Now, the situation has been changed. The use of flowers in day-to-day life has been significantly increasing and at the same time, the number of flower growers has also been increased. Considering the changed context, The Floriculture Association of Nepal (FAN) under the initiation of Agro Enterprise Centre (AEC) has been formed in the Year 1992 with an aim to unite the scattering flower growers under one umbrella and to promote the floriculture in commercial way in Nepal. Most probably, the establishment of FAN would be the one milestone in the history of floriculture development in Nepal. The establishment of Flower Wholesale Market in the year 1998 is another milestone.

After the establishment FAN, the number of nurseries has been found significantly increased. As per statistical record of FAN, the total number of nurseries in 2005/06 is 550 whereas it was just 80 in 1992/93. At present, the nurseries business has been widely spread over 34 districts of the country that was just limited to 2 districts only during 1992/93. Similarly, the number of flower showroom in Kathmandu is also found to increase each year. It was zero in 1992/93 whereas the number of showroom just in Kathmandu has reached to 58 in 2005/06.

At present, the major flowers commercially produced in Nepal are gladiolus, rose, carnation and gerbera. Beside that orchid also coming out in the market.

ESTIMATED DEMAND OF FLOWER

The demand of flower and cut flower in Nepal is simultaneously increasing each year. In 1992/93, the average demand for gladiolus was just limited to 125 sticks per day in Kathmandu market. The demand increased more by 64 times in 2005/06. The demand for rose and tuberose in 1992/93 was 125 and 75 sticks per day respectively on an average. It's demand now has significantly increased and reached to 2500 to 4000 for rose and 1500 to 2000 sticks per day for tuberose.

The demand of carnation is also increasing well in the market. Its demand in 2005/06 was recorded as much as 1000 to 1500 sticks per day whereas it was limited to 50 to 100 sticks per day in 1992/93.

* *Mr. Shakya is a In-House Consultant in Agro Enterprise Centre/FNCCI*

So far as the demand of gerbera is concerned, it was 500-1000 sticks per day in 2003/04 and now the demand has been increasing. In 2005/06, demand for gerbera was 1500-2500 sticks per day. The demand for orchid is also notably increasing in the market. Its demand in the year 2005/06 was found up to 300 sticks per day.

EXPORT AND IMPORT SCENARIO

The import of cut flowers has been found significantly substituted by Nepalese products. In 1992/93, 95 percent of total the demand of cut flowers in Nepal have been used to fulfill by imports whereas it is now just limited to 20 percent.

The statistics show that Nepal has imported live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage in 2001/02 equivalent to NRs. 1348,170. The imports in terms of value in 2005/05 have slightly increased i.e. equals to NRs. 1598,385.

As compared to imports, the exports in terms value has significantly been increasing each year. The export values of live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage in 2001/02 was worth NRs. 1328,162 while this values has went up and was worth NRs. 32634,275 by the end of 2005/06.

The statistics as above explicitly predict the successfulness of floriculture development in Nepal.

SWOT ANALYSIS

There are several strengths, weakness, opportunity and the threats associated with floriculture development in Nepal. They are analyzed below:

STRENGTHS

- Existence of diversified agro-climatic condition suitable for commercial production of flowers in the country
- Increasing institutional supports
- Increasing production technology
- Easy access to domestic market
- Available of unique varieties of flowers
- Government prioritized program

Weakness

- High cost of production
- Inadequate Trained human resources
- Weak post-harvest handling practices
- Necessary pre-requisites like quality control measures, SPS, TBT concerns are not strong
- Policies are not strong enough

Opportunities

- Increasing domestic market demand
- High export potential
- Scope of commercial production
- Advantage of quality production
- Easily available resources (other than trained human resources)
- High scope of brand promotion

Threats

- Low competitiveness in international market
- Natural disasters like hailstorms, draughts, diseases, insects and pests
- Lack of security the growers (lack of crop insurance)
- Policy may change due to unstable political situation

Future Strategies

Different strategies are there to cope with the threats and the weakness through matching the opportunities and the strengths approach.

STRENGTH-OPPORTUNITY APPROACH

Suitable climatic and soil condition permits commercial cultivation of flowers in different parts of the country. Similarly, it can be extended further due to available of increasing resources and the technologies.

Furthermore, owing to government's prioritized program, there is high scope of export promotion and could be developed some particular flowers as national brand for export.

STRENGTH-THREATS APPROACH

Crop insurance provision may minimize the risks associated hailstorms, draughts and other natural calamities. The government should form a strong policy to establish trade competitiveness. Quality should be maintained through extensive monitoring by the concerned authorities.

WEAKNESS-OPPORTUNITY APPROACH

Post-harvest handling can be enhanced through providing proper training to the product handlers. Similarly, cost of production that is currently high, that could be minimized through strengthening the commercial cultivation. The problems associated with grading, sorting, transportation, SPS and TBT could be mitigated through quality production and the appropriate policy formation.

WEAKNESS-THREATS APPROACH

Organized marketing and commercialized cultivation with maintained quality measures could help overcome the present threats associated with floriculture business. The weak pre-requisites for trade promotion and possible change in policy matters may invite the catastrophe in the future market. To overcome these threats, the government should form appropriate policy measures.

OVOP AND ORCHID DEVELOPMENT

Recently, the government has included orchids as one of the product in "One Village One Product" (OVOP) program in Nepal. OVOP, by nature, is a national prioritized program that runs under public private partnership concept. The government has identified Lalitpur district to launch orchid program from the fiscal year 2007/08.

The program aims at developing the orchid in the selected district in a commercial basis through the use of local people skill in the particular field. Commercial cultivation, extensive access to domestic market, brand promotion and exploration of international market and ultimately the income generation of the local people are the major thrust of the program. This program could be expected as one additional approach to enhance the current status of floriculture development in Nepal.

CONCLUDING REMARKS

The success and failure of any venture solely depends on its implementation aspect. A mere launch of the program is not enough unless and until the different factors like strengths, weakness, opportunity and the threats associated with the program has been well addressed.

In general, the ultimate goal of commercial production of flowers and other like items is to access internal and external markets. To access the market particularly the international market is not an easy task in the context of this competitive world. The most important international concern is related to quality of the products. Nepal, from time to time, has been facing the problem associated with sanitary and phyto-sanitary measures (SPS) in agriculture commodities export. Therefore, all the actors involved in floriculture sub-sectors should seriously address these threats.

No doubt, it is all due to lack of standard measuring unit in the country. This has to be seriously considered and the unit as such should be established immediately at the national level.

Finally, has the SWOT associated with floriculture business been well addressed, the floriculture in Nepal could be developed much more better than today.

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The Status of Nursery Business in Kathmandu Valley: Findings of a Baseline Study

G.R. Joshi and Umed K. Pun***

ABSTRACT:

This article is an abstract of Baseline study on "**The Status of Nursery Business in Kathmandu Valley**" carried by Floriculture Association Nepal (FAN) from July- August, 2006. During the study, 35 nurseries were visited for personal interview. Information regarding existing situation of nursery business in Nepal was collected. This study identified that the nursery industry of Nepal was still in preliminary stage and relied mostly on Indian supply. The majority of floriculture nursery products were being imported from India and sold here. Similarly, the knowledge and skills of nurserymen was not found sufficient. Demand for the various nursery products was found in increasing trend. Hence there is scope for establishment of wholesale nursery in the country. Government role in the research and development of this sector was lacking. Hence, strong private-public partnership for research and development of this sector was highly recommended.

1.1 Introduction

Floriculture is an age-old practice in Nepal. Flowers and gardens have been a part of Nepalese culture since time immemorial because of the religious, aesthetic, and social values attached to flowers and gardens (Pun, 1995). Almost all religious books and manuscripts have mentioned about the importance and ritual use of flowers and foliages in the human civilization. In Nepal, floriculture is an emerging sub-sector in agriculture. However, institutional efforts regarding the floriculture research and development are still lacking. In this context, a baseline study was carried out in Kathmandu valley during July-August 2006 to identify the present status and future prospects of nursery business in Kathmandu valley. The nature, diversity, constraints and potentials of nursery business were explored in this study. Altogether 33 nurseries were visited during the study. This paper is an attempt to present the findings of the study in brief.

1.2 Present Status and Future Trend

At present, more than 500 flower nurseries have been reported throughout the country of which around 250 is estimated to be located in Kathmandu valley (FAN, 2005). Outside the valley, flower nurseries are mostly located in Jhapa, Chitwan, Kaski, and Dhading districts. Similarly, cut flowers such as Gladiolus, Tuberose, Rose, Chrysanthemum, Carnation, Dahlia, Cymbidium, and Gerbera have been also grown in these districts by commercial flower growers and nurserymen. However, domestic production has self-sufficient only in Gladiolus. Interestingly, in the recent years, floriculture business has been promoted as one of the major agro-enterprises by some (I) NGOs in Kathmandu valley. As the result, small farmers in the periphery of Kathmandu city have adopted these enterprises as a means of income generation (Joshi, 2005).

1.3 Components of Floriculture Business in Nepal

In Nepal, though, floriculture business has been recently developed business, however, it has been diversified with following important components:

- Seasonal Flowers
- Cut Flowers
- Indoor and Outdoor Perennial Plants

** Horticulture Officer, DADO-Dhangadi ** Himalayan Flora - Lalitpur*

* Landscape Designing and Garden Maintenance

2. RESULT AND DISCUSSION:

2.1 Basic Information

Most growers possessed only primary level of education and majority of them did not have any kind of training on nursery management. The area covered by individual nursery ranged from 0.5 ropani to 35 ropani with the average area of 6 ropani. More than 74% of the total nurseries were established in leased land. A few nurseries were also established on government land in greenbelt area of the ring road. The land rent varied greatly from NRs 3000 to NRs 75000 per ropani per year.

2.2 Estimated Investment

In the nurseries visited during the survey, around 30 million rupees were invested with the range between NRs. 100,000 to NRs. 7,500,000. From the existing sample size, more than 300 million rupees were estimated to be invested in this sector in Kathmandu valley.

2.3 Employment Generated

The nursery business has generated employment opportunities for many illiterate and semiskilled persons. Average number of employees in a nursery was found to be around 7 persons with the range of 2 to 41 persons. The salaries and benefits for skilled, semiskilled and unskilled laborers varied greatly with the different nurseries; the range was between NRs. 1500 to NRs. 6000 per person per month.

2.4 Products and Services

Wide varieties of seasonal and perennial plants were found to be available in the nurseries. In a typical nursery, more than 50 species of seasonal flowers and more than 300 species of perennials were found displayed for sale. During summer and rainy season, Marigold has been the number one seasonal flower followed by Chrysanthemum, Salvia, Zinnia, Dahlia, Aster, Celosia, Sunflower, etc. During the winter season, major seasonal flowers are Petunia, Pansy, Cineraria, Ranunculus, Antirrhinum, Calendula, Dianthus, Gazania, Verbena, Sweet Pea, Carnation, etc.

Regarding the perennials, demand for both indoor and outdoor plants have been increasing. Most demanded indoor plats were Philodendron, Dracaena, Dieffenbachia, Ferns, Sanseveria and different varieties of palm such as Areca palm , Phoenix palm, Chamadora palm, Nolina palm, Rapis palm, etc.

However, in outdoor plants category, several species were available with different canopy, growing habit and uses. Under shrub-types, Bougainvillea was the most demanded followed by Poinsettia, Azalea, Camellia, Gardenia, Roses, Duranta, Hibiscus, Croton, *Jasminum* Sps, Brunflesia (Yesterday-today-tomorrow), Cestrum (Night queen), Hibiscus (China rose), etc. Under tree species, high demand was for different species of Dhupi such as Temple dhupi, Golden dhupi, Lemon dhupi, Scented dhupi, Arecaria, etc. Other common plants were *Ficus* sps, Silver oak, Jacaranda, Cycas, Camphor tree, Bottlebrush, *Nyctanthes arbor-tris-tis*, Bamboo, etc. Similarly, plants of different species of fruits were also available in the nursery. Most demanded fruits were Kumquat, Mandarin orange, Sweet orange, Persimmon, Pear, Lemon, Guava, Peach, Apple, Mango, etc.

In addition, more than 75% of the nurserymen were found to be involved in other nursery related works such as garden establishment and maintenance, lawn maintenance, landscaping, floriculture training and consultancy.

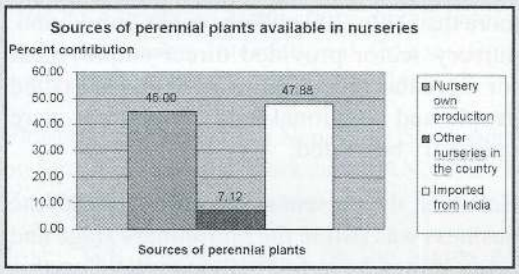
2.5 Sources of Seed and Perennial Plants

Almost all the seasonal flowers hybrid seeds have been grown from imported from Holland, Japan, Thailand, Denmark, America and India. The study identified the increase of flower seed market in Nepal. It was learnt that only

one flower- seed supplier was operating in the valley before 10 years, but at present there are more than 3 flower seed dealers.

Regarding the perennial plants, major products were imported from India. Under the perennials, around 48% of the outdoor plants and almost 100% of the total indoor plants required have been imported from India mostly from Calcutta and Kalimpong. Indian suppliers from West Bengal have been involved in plant import. It was also learnt that Nepalese nurseries were solely depended on Indian products before 10 years, but a significant proportion (around 50 %) of outdoor perennial plants required were now produced in the country. In the visited nurseries, 45% of the total outdoor plants were found to be produced within the nurseries, 48% imported from India and 8% of the plants collected form other nurseries within the Kathmandu valley (Figure 4).

Figure 4: Sources of Outdoor Perennial Plants

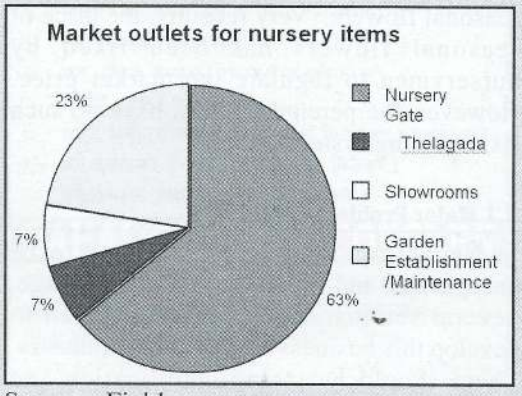


Source: Field survey

2.6 Existing Marketing System and Structure

Most of the nurseries did not have showrooms and nursery gate was the major outlet for the selling nursery products. However, a few have established showrooms and some of them have cart (Thelagada) as well. Similarly, the garden establishment, lawn maintenance and landscape designing also contributed for a significant proportion of the total products sale. Similarly, Floriculture/ Agriculture Trade Fairs were other avenues for selling and advertising the nursery products and services. The data showed that around 63% of the total sale was from nursery gate, 23% by garden maintenance, and 7% each from cart (Thelagada) and showrooms (Figure 5).

Figure 5: Market outlets for nursery items



Source: Field survey

2.7 Demand and Supply

In general, the demand for the nursery items was found to be in increasing trend. It has been noticed that the competition was high and prosperous nurseries of the past were loosing their business due to establishment of new nurseries in the core city area. Due to introduction of mobile cart (Thelagada) selling system, there was high price competition among nurseries and consumers were getting same items in low prices. The demand for the landscape designing was in increasing trend. Now, people have been found to be aware of the importance of garden establishment and landscaping. The demand of seasonal flowers, outdoor and indoor plants and carpet grass was found to be in increasing trend.

2.8 Major Customers

The local residents have been identified as the main customers of nursery products with more than 78% of the share in the total sale of nursery products followed by hotels and restaurants with around 9 % share. The data indicated increased awareness regarding floriculture among common people.

2.9 Pricing Mechanism

According to majority of respondents, price varied with the type of commodity, variety, age and consumers' preferences. The variation in the price of same item was found in different nurseries. Most respondents said that there was unhealthy competition for the seasonal flowers. Very recently, the price of seasonal flowers has been fixed by nurserymen to regulate the market price. However, the perennial plants have no such fixed pricing system yet.

3.1 Major Problems Identified

In Nepal, nursery business seemed to be unorganized and still in the preliminary stage. Several serious steps have to be taken to develop this business as sustainable industry. There should be strong coordination and partnership among private, government, and non-governmental sector. Some of the major problems identified in this research were as follows:

3. 1.1 Production Related Problems

- Disease and Pest infestation mainly in seasonal flowers
- Poor Quality Seed in seasonal flowers
- Expensive Seed in seasonal flowers
- Land Unavailability

3.1.2 Technology Related Problems

- Lack of Knowledge on Plant Propagation
- Lack of Knowledge on Plant Care and Management
- Lack of Knowledge on Nursery Management

3.1.3 Marketing Related Problems

- Lack of Proper Price Fixation Mechanism
- Lack of Marketing Knowledge and Information Flow

3.1.4 Policy Related Problems

- Lack of Clear Government Policy on Flower Nursery
- Lack of Coordination and partnership among public and private sector
- Lack of Effective Rules and Regulations

3.1.5 Financial Related Problems

- Lack of Sufficient Fund
- Difficulty in Getting Loan from ADB in low interest rate

4. CONCLUSION AND RECOMMENDATIONS

Floriculture is one of the emerging income generating agricultural enterprises. Rapid urbanization, modernization and increased awareness among common people towards gardening and flowers have created good future prospects for floriculture in general and nursery business in the particular.

More than 50% of total nurseries in the country have been reported to be located in Kathmandu valley with higher percentage of share in the total floriculture transaction. The investment in this sector is estimated to be more than NRs. 300 million rupees. In addition, nursery sector provided direct employment for more than 3000 semiskilled and unskilled people and additional tens of hundreds were indirectly benefited.

However, the present study identified that the business was still in the preliminary stage and many things have to be done to develop this sector as the prosperous nursery industry. Currently the business relied mostly on the Indian nurseries for perennial plants and foreign seed companies for the hybrid seed of seasonal flowers. The major constraints of nursery sector are lack of technology and facilities for hybrid seed production within the country, lack of facilities to produce perennial plants in the country and insufficient knowledge and skill regarding disease and pest management. Similarly there is lack of proper marketing system of nursery products and institutional supports have been also very low.

Technical knowledge and skills of the nurserymen on various aspect of the nursery management should be improved. Similarly, research and development interventions should be initiated for hybrid seed production, production of perennial plants within the country, disease and pest management and market strengthening. Additionally, regulation of the import of the seed and other plant products is very important step towards promotion of this sector. Strong coordination and partnership between Governmental, Non-Governmental and private sector is strongly recommended for the long-term development and sustainability of the nursery business in Nepal.

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A glimpse to climber plants for garden beautification

Lajmina Joshi
NHPL, Godawary

INTRODUCTION

These day's peoples are very much keen in garden plants but because of the space consciousness, the proper city dwellers have most probably no garden and so they used to have plants in the verandah and roof top. Different types of ornamental plants, climbers, herbs, dwarf shrubs are planted. Generally we see *Bougainvillea, Jasmine,* and *Pyrostegia* are planted in most of the houses as the climber plants to decorate houses. A garden is a place where different types of plants such as trees, shrubs, herbs and climbers are planted according to the landscape design. All these plants beautify the garden as well as create an ambiance of nature to its own house. In fact, nature in itself is lifeless and just like a void without flora and fauna.

Peoples are so busy these days that they do not have time to go to park and hillside to have fun with nature. So they want to make their own garden in their house to have charm of natural beauty. A garden is a piece of art that pleases eyes and mind bringing pleasant environment. In the mean time it brings the nature near to one's house, creating an illusion of nature around him. Garden can be complete only when climbers and creepers are planted side by side. Ornamental climbers play an important part in decoration and beautification of indoor and outdoor garden. Besides, if we care in the selection of plants with regard to their flowering periods, it will still add considerably to the show of color throughout the year.

WHAT ARE CLIMBERS?

The plants which have special structure to climb on supports are known as climbers. And these climbers are one of the important group of ornamental plants as they enhance the beauty of any garden or house. However, selection of a suitable variety is advised to plant in a place. The other group of climbing plants is called creepers because they are very weak to grow vertically on their own. They climb by means of their twining stems as in the case of the Cypress vine (*Quamoclita pennata*); with the aid of tendrils in the Butterfly pea (*Clitoria terneata*); or by means of aerial roots adhering to supports as in the case of the Money Plant, *Ficus pumila* and *Hedera nepalensis*. Some climbers like the *Bougainvillea* have spines or hooks and hook on to other plants to support.

We grow climbers commonly on walls, fences, pergolas, arches, pillars and on trellises. Mostly the climbers are grown on boundary walls of house for a beautiful view or screening, we can grow over a pergola, arbour or arch with a view to beautifying the house or garden; for shading purpose on a trellis work or bower and semi-decayed trees; for isolated groups on lawns; and for many other reasons.

CARING OF CLIMBERS

Most of the climbers need proper caring after planting but some do not. Because the strength and general growth habit of the different species need to be carefully considered with regard to the positions they are to occupy as with the majority of kinds frequent pruning, to keep them within bound on a restricted area, means corresponding loss of bloom and color, the beauty of the plants thus never being fully developed. Similarly, temperature should also be considered as it plays an important role for some plants which are best adapted to the monsoon months may be encouraged to bloom throughout the cold weather, if given the warmth and shelter of a

south wall e.g. Bougainvillea spp. Others prefer cool semi-shaded positions e.g. *Lonicera japonica, Trachelospermum jasminoides*. Besides, some climbers suit to every situation and occasions whatever the use and the nature of the situation may be. July to September and February to March is suitable to plant evergreen climbers and February to early March is suitable to plant deciduous ones.

We have to be careful with the soil also. It should be fertile, deep and good in water holding capacity but with proper drainage. Proper support should be provided at the time of planting. Weeding and hoeing should be done regularly.

Drastic pruning is required for heavy climbers and light for light climbers. Some of the heavy type climbers could be pruned to prevent them from climbing. It means they could be stunted to make them appear as sprawling or scandent shrub. The planting instructions would depend on the type of climbers to be cultivated and the purpose for such planting. Whatever the types of climbers, they should be watered once daily and preferably twice a day in the initial stage.

CLASSIFICATION OF CLIMBERS

Climbers are categories into four groups which are as follows:-

(a) The slender climbers
(b) The woody climbers
(c) The heavy climbers
(d) The foliage climbers

While planting these different types of climbers, we have to consider for what purpose we are going to plant such as, for bungalow walls, floral pergolas and unwanted space. After that only proper planting instruction will be given. Some descriptions are given below to plant different type of climbers according to its purpose of planting.

(a) For a chain like fence

Slender climbers would suit this purpose best to get a really good thick screen. The climbers such as *Clitorea ternatea, Aristolochia griffithi* and others could be grown. Pruning at the tips of the shoots will encourage more side branches to be produced.

(b) For a pergola, arbour or arch

The best climbers are the heavy or woody one such as the *Bougainvillea sp., Holmskioldia sanguinea, Beaumontia grandiflora, Thunbergia grandiflora*. The climber should be planted to allow it to climb the pillar or support of the pergola, arbour or arch. Some of these climbers need to be tied to the supports or pillar initially.

Wisteria sinensis *Bougainvillea sp.* *Doxantha unguis-cati*

(c) For a trellis or bower

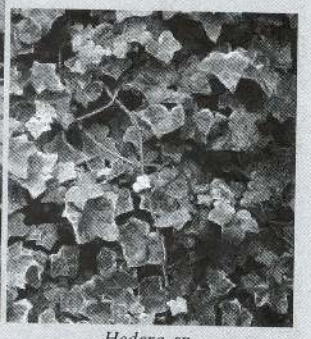
The woody and some of the slender climbers such as the *Clematis* or *Bignonia sp. Porana paniculata* would be more appropriate. As most trellis or bowers are not solid structures and are built primarily to enhance the appearances of the houses or for shading, the patio, heavy climbers would not suit the purposes. Usually slender types of climbers' suit for those purposes and the branches of these climbers should be tied to the trellis work as they grow.

(d) For foliage climbers growing up trees or buildings

Lind *Pyrostegia venusta* *Clematis gouriana*

Foliage climbers such as the various Philodendrons, the Money plant, Monstera and the Creeping fig (*Ficus pumila*), *Hedera sp*. *Beaumontia grandiflora* and *Thunbergia grandiflora* are excellent for growing up a tree or walls of buildings. They add beauty to the garden and also hide the ugliness of the bare concrete walls. Some of these climbers however require a cool and shaded position. As they possess aerial roots which adhere to the trunks of trees or walls or pillars of buildings they need not to be tied for a support.


Monstera


Hedera sp

LIST OF SOME CLIMBER PLANTS FOR GARDEN BEAUTIFICATION

NAME OF THE PLANTS	HABIT	ENGLISH NAME	LOCAL NAME	FLOWERING	FLOWER	SUITABLE FOR
WOODY CLIMBER						
Bauhinia vahlii W & A	Deciduous	Camel,sfoot climber	Bhorla, Malu	Apr.-Jun	Creamish white	Trellis
Beaumontia grandiflora Wall.	Evergreen	Nepal trumpet creeper	—	Mar.-Apr.	White	Shrubbery, arbour, wall
Clematis gouriana Roxb.	,,	—	Junge lahara	Nov.	White	Trellis
C.buchananiana DC.	,,	——	Junge lahara	Nov.	Creamy	Trellis
Lonicera macrantha (D.Don) Spreng.	,,	Honey suckle	——	May-June	Yellow	Pergola ,Arch, Trellis
Malvaviscus arboreus Cav.	,,	Chinese lantern	Barhmase, Ghanti phool	All round.	Red	Arch, pergola
Mucuna nigricans (Lour.) Steud	,,	Lyon bean	Kaucho,Kabauchh	May-June	White	Trellis
Thunbergia grandiflora Roxb.	,,	Thunbergia, Sky flower	Kag chuche, Kag phooli	Feb.-Mar.&July-Oct.	Lavender blue, Mauve	
Pergola,trellis,arches,wall,tree						
Porana paniculata Roxb	,,	Bridal creeper	Akashbeli,Chamero lahare	Nov.-Feb.	Paper white	Wall, tree, trellis
Quisqualis indica L.	,,	Rangoon creeper	Baja phool	Sept.	White,pink,red	Fences, wall
Smilax. lanceaefolia Roxb.	,,	——	Chatiwan	Mar.-May	White	Trellis, Wall
S. aspera L.	,,	——	Chopihini	Aug.-Oct.	Creamy , White	Trellis, Wall
SLENDER CLIMBERS						
Aristolochia griffithii Hook,f.et Yhoms	,,	Calico-flower	Hainch paali swan	May-July	Yellowish green	Pergola, trellis,screen wall
Clitorea ternatea L.	,,	Butterfly pea	Aparajita	Al round	Blue,white,purple	Fence
L. japonica Thunb.	,,	Honeysuckle	Juhee	May-June	White	Trellis
L.sempervirens L.	,,	Trumpet honeysuckle	—	May-Sept.	Orange red, Scarlet	Trellis, Wall
Rosa macrophylla Lindl.	Deciduous	Rose	Jangali gulab	Late June	Calise pink, deep rose	Pagoda, wall, tree, trellis
R. sericea Lindl	,,	Himalayan rose	Bhote gulaph	Late May	Creamish white	,,
R. moscata J. Herrmann	,,	Musk rose	Pahadi gulaph	Late June	White	,,
R. alba	,,	Rose	Gulab	Late June	White	Trellis
Solanum jasminoides Paxton.	,,	Potato vine	Aalu phool	June	Bluish white	Trellis
Solanum wendlandii Hook.	Evergreen	Giant potato vine	——	July-Aug.	Bluis mauve	Pergola
Tecoma grandiflora(Thunb.) Loisel	Deciduous	China trumpet creeper	Ghate puspa	June –Aug.	Orange red	Trellis, Wall
Thunbergia coccinea Wall.ex.D.Don	Evergreen	——	Singarne lahara	Dec.-Mar.	Scarlet, Orange	Trellis, Wall
Thunbergia fragrans Roxb.	,,	——	——	Sept.-Nov.	Snow white	Screen
Trachelospermum jasminoides Lem.	,,	Star jasmin	Dudhya phool	July-Aug.	White	Wall. Fence
T. fragrans (Wall. Ex G.Don) Hook.f.	,,	—	Dhudhe lahara	May-June	White	Wall. Fence
Tropaeolum majus L.	,,	Garden nasturtium,	Indian cress	June-Sept.	Orange	Wall
Quamoclita pennata (L.)Bojer	,,	Cypress-vine	Jayanti	July-Oct.	Scarlet	Trellis, Wall

FOLIAGE CLIMBERS						
Asparagus racemosus Willd	Evergreen	Asparagus	Kurilo	—	—	Trellis
Campsis grandiflora(Thunb.)k.Schum.	Deciduou	Trumpet vine	Ghata pusplata	May-Nov.	Orange	Arches, pergola, wall
Ficus pumila L.	Evergreen	Creeping fig	Yomari	Jul.-Aug.	—	Wall
Hedera nepalensis K. Koch	,,	—	Dudelo, Kathe lahero	—	—	Wall
Hoya carnosa R.Br.	,,	Wax-plant	Millari, Tapcha swan	May-Sept.	Pinkish white	Trellis, screen
Monstera deliiciosa	,,	Monstera	Fruit salad plant	—	—	Pergola, Wall
Philodendron lacerum	,,	Philodendron	—	—	—	Pergola, Arbour, Wall
Scindapsus aureus	,,	Scindapsus, Devil,s Ivy	—	—	—	Pergola, Arbour, Wall
HEAVY CLIMBERS						
Argyreia nervosa (burm.f.) Boj.	Evergreen	Elephant climber	Samudriphal			Pergola, Archr, Fence
Bougainvillea glabra Choisy Wall.	,,	Bougainvillea	Kagaje or Madani phool	Allround	Purple	Pergola,Arch,Arbour,Trellis,Fence
Bougainvillea spectabilis Willd. Fence,Wall	,,	Glory of the garden	Kagaje or Madani phool	June-Sept.	Red	Pergola,Arch, Arbour, Trellis
Chonemorpha fragrans (Moon) Alston	,,	———	Gothale phool	July	White with yellow center	Arch, Arbour, Trellis,
Doxantha unguis-cati Rehd.	,,	Cats claw	Charinangre phool	Mar.-July	Yellow	Fence, Wall
Hiptage benghalensis	,,	———	Loure chameli, Madhavi lata	Dec.-Feb.	Yellow & White cream	Arbour, Trellis.Wall
Holmskioldia sanguinea Retz.	,,	Chinese hat-plant	Aputo,Jhule phool	July-Dec.	Blood red	Arch
Ipomea cairica(L.) Sweet	,,	Railway creeper	—	All round	Purple	Trellis, fences
Ipomea hederacea	,,	Culico flower	Bhurungka lahare	All round	Purple	Pergola, Arches
Ipomea purpurea (L.) ARoth.	,,	Common morning glory	—	July	Deep purple	Trellis
Jasmine. arborescans Roxb.	,,	Jasmine	Chameli phool	Mar.-June	White	Arch, arbour, fence, trail
J .dispermum Wall		Jasmine	Lahare jai	Mar.-June	White or pinkish white	Arch, arbour ,fence ,trail
J. grandiflorum (L.) Fam.	,,	Jasmine	Chameli	June-Nov.	White	Wall, Trellis
J. humile	,,	Yellow jasmine	Pili chameli	Mar.-Sept.	Yellow	Wall, Trellis
Jasminum gracile Andr.	Evergreen	Jasmine	Chameli, Daaf swan	All round	Yellow	Arch, arbour, fence, trail
J.nepalensis Sprenge	,,	—	Ban jai	Mar.-Sept.	White	Arch, arbour, fence, trail
J. officinale L.	,,	Spanish jasmine	Lahare jai	Jun.-Sept.	White	Arch, arbour, fence, trail
Mussaenda frondisa	Deciduous	Damvan	asari	May-June	Orange, Yellow	Trellis
M. macrophylla	,,		Dhobini	June-July	Orange, Yellow	Trellis
Passiflora cacrulea L.	Evergreen	Passion flower	Ghadi phool	June-Oct.	Blue	Trellis, fence
Passiflora edulis Sims.	,,	Purple Granadilla	Lahare amp	June-July	Greenish white violet	Trellis, fence
Pyrostegia venusta(Ker.-Gawl.) Miers.	,,	Golden shower	Khursani phool	Apr.-June	Golden yellow	Porch, verandah
Wisteruia sinensis (Sims)DC	Deciduous	Chinese Sweet wisteria	Nihaar phool	March	Purple	Pergola, trellis or trees

नेपालमा नर्सरी उद्योगको संक्षिप्त जानकारी

दिलिप बादे

नर्सरी भन्नाले बोट बिरुवा हुर्काउने स्थानलाई जनाउदछ तर यसको परिभाषा यतिमा मात्र सिमित नरहेर बोट बिरुवा बिक्री वितरण गर्ने स्थान समेतलाई जनाउँछ । अर्थात् नर्सरी उत्पादन स्थल मात्र नभए व्यवसायिक स्थान पनि हो । नेपालमा फूल तथा बोट बिरुवाहरुलको व्यापारको एक विशेष हिस्सा नर्सरी व्यवसायले ओगटेको पाइन्छ । अहिले राष्ट्रिय स्तरमा करोडौं र अन्तराष्ट्रिय स्तरमा अरबौको व्यापार नर्सरी व्यवसायले गरिरहेको विभिन्न तथ्यांकहरुले देखाउँछ । नेपालको हावापानीमा सुहाउदो तथा फस्टाउदो व्यवसायको रुपमा परिचित छ नर्सरी व्यवसाय । तपाई हाम्रो घर-आगँन, बँगैचा, कोठा, अफिस, सडक चारैतिर देख्न सकिने फूल तथा विभिन्न बोट बिरुवाहरुसँग सम्बन्धित व्यवसाय हो नर्सरी व्यवसाय ।

विगत

आदिकाल देखि फूलको विभिन्न प्रयोग भइआए पनि नेपालमा व्यवसायिक रुपमा फूलको प्रयोग सन १९५० पछि मात्र हुन थालेको देखिन्छ । नेपालमा स्थापना भएको पहिलो नर्सरीको रुपमा हामी नेपाल प्राइभेट नर्सरीलाई चिन्दछौ । सन् १९५४ मा लाजिम्पाटमा खोलिएको यो नर्सरी नै नेपालको सम्भवत पहिलो नर्सरी हो । त्यसपछि सन १९६० देखि १९७० सम्ममा ६ वटा नर्सरीहरु सुबिन्स् बोटानिकल सेन्टर (१९६४), कपाली नर्सरी (१९६४) तारी भाइ नर्सरी (१९६४), गुप्ता नर्सरी-रुपन्देही (१९६५), शिब नर्सरी (१९६८) र हिमालयन नर्सरी-विराटनगर (१९६८) संचालनमा आए, जसमध्ये कपाली नर्सरी, गुप्ता नर्सरी, शिब नर्सरी र हिमालयन नर्सरी हाल सम्म संचालित छ भने अन्य नर्सरी संचालनमा छैनन् । त्यसैगरी सन १९७० देखि १९८० को दशकमा ६ वटा नर्सरीहरु स्थापना भएको पाइन्छ जुन द स्टान्डर्ड नर्सरी (१९७३), लाजिम्पाट नर्सरी (१९७४), महालक्ष्मी नर्सरी (१९७४), ह्यान्की राई एण्ड सन्स् (१९७५), जे.एन. इन्टरप्राइजेज् (१९७६) र जय किसान नर्सरी (१९७७) हुन् ।

जसमध्ये आफनो स्थापनाकाल देखि निरन्तररुपमा हाल सम्म पनि पुष्प प्रेमी महानुभावहरुको मागलाई पुरा गर्दै अघि बढिरहेको नर्सरीको रुपमा सु परिचित छ जय किसान नर्सरी, द स्टान्डर्ड नर्सरी र ह्यान्की राई एण्ड सन्स् । अन्य नर्सरी हाल संचालनमा छैनन् । सन १९५० देखि १९८० सम्ममा तथ्यांकले केवल १० वटा नर्सरीहरु संचालनमा आएको देखाएता पनि अरु २, ४ वटा नर्सरीहरु पनि त्यसबेला संचालनमा हुनसक्ने तथा भएको कुरा जानीफकार बताउँछन् ।

नर्सरी व्यवसायको विगतलाई कोट्याउदा यो व्यवसाय निक्कै परम्परागत रुपमा अघि बढिरहेको पाइन्छ । तत्कालिन समयमा यसमा प्रयोग हुने सम्पूर्ण औजार, औषधि, विषादी मलखाद्य तथा बिउ बिजन र कामदार स्थानिय स्तरमै निर्मित र उत्पादित भएका हुन्थे । सन १९९० भन्दा पहिला एकातिर फूलका बोट बिरुवाहरु पनि किनेर लगाइन्छ र भन्ने जस्ता संकुचित सोच एउटा वर्गमा थियो भने अर्कोतिर फूलका बोट बिरुवाहरु त अति उच्च तथा सम्पन्न समुदायले मात्र उपभोग गर्ने तथा गर्न सक्ने वस्तुको रुपमा प्रचारित भएका कारणले गर्दा नर्सरी व्यवसाय फस्टाउन निकै हम्मे हम्मे परेको देखिन्छ ।

वर्तमान

विगतमा यो व्यवसाय निकै परम्परागत रुपमा अघि बढेको देखिएता पनि हाल आएर यस नर्सरी व्यवसायले निकै ठूलो फड्को मारिसकेको छ । विशेषत सन १९८० को दशक पछि वास्तविक रुपमा व्यवसायिक हिसाबले खुल्न थालेको हो । सन १९५० देखि १९८० सम्म निकै सुस्त गतिमा स्थापना र संचालन भएका नर्सरी व्यवसाय १९८० पछि गतिमान भएको पाउँछौ । जसको प्रत्यक्ष उदाहरण सन १९८० देखि हाल सम्म आउँदा नआउँदै ६०० को हाराहारीमा नर्सरीहरु नेपालभरि स्थापना भएको पाइन्छ । जसमध्ये काठमाण्डौं जिल्लामा मात्रै लगभग ८० वटा, ललितपुर जिल्लामा लगभग ४० र भक्तपुर जिल्लामा लगभग १० वटा नर्सरीहरु संचालनमा छन् ।

का.स. - FAN (जय किसान नर्सरी)

यो व्यवसाय वर्तमान स्थितिमा आइपुग्दा विगत भन्दा निकै परिमार्जित भैरहेको छ । उच्च स्तरीय तथा गुणस्तरीय बिउ बिजनहरु, अत्याधुनिक हाते औजार हरु, तालिम प्राप्त कामदारहरु तथा व्यवस्थित सामाग्रीहरु अहिले यो व्यवसायको विशेषताको रुपमा रहेको छ । वर्तमान परिपेक्षमा यो व्यवसाय निकै सम्भावना युक्त व्यवसायको रुपमा विकास भैरहेको पाइन्छ । यस व्यवसायमा लामो समय देखि बुझेर लागेका व्यवसायीहरुको आर्थिक तथा सामाजिक हैसियत पनि राम्रो हुँदै गइरहेको देखिन्छ । आथिर्क तथ्याङ्कलाई अध्ययन गर्दा वर्तमान स्थितीमा नर्सरी व्यवसायीले वार्षिक २० करोड भन्दा बढिको कारोबार गरेको पाउदछौ । त्यसै गरी २५०० घर परि वारलाई प्रत्यक्ष र अन्य हजारौलाई अप्रत्यक्ष रुपमा रोजगारीको अवसर प्रदान गरि रहेको छन । जसमा मध्यम स्तर देखि उच्च शिक्षीत व्यक्तिहरुसम्म समेटेको पाईन्छ ।

बिगतमा कम गुणस्तरीय तथा सिमित प्रकारका बिउ बिजन र बोट बिरुवाहरु प्रयोग हुने गरेकोमा हाल आएर ५० भन्दा बढी प्रकारका मौसमी फूलका बिरुवा तथा ३०० भन्दा बढी प्रकारका अन्य बेमौसमी र आलंकारिक वोट बिरुवाहरु यस व्यवसायमा उपलब्ध छन् । नेपालमा हालसम्म हाइब्रिड फूलका बिउ बिजनहरु उत्पादन गर्ने स्रोत, साधन, प्रविधिको अभ्यास नभएकाले गर्दा गुणस्तरीय बिउ बिजनका लागि पूर्णतय बिदेशमा आश्रित हुनु परेको बाध्यता यथार्थ हो । जसले गर्दा बार्षिक लाखौं रुपैया बिदेशीले लगिरहेका छन् । त्यसैगरी बिगतमा आलंकारिक बोट बिरुवाका लागि पनि पूर्णतया भारतमा आश्रित हुने गरेकोमा हाल २५% आफ्नै देशमा उत्पादन हुन थालेको पाइन्छ ।

वरिपरिको वातावरण र मानवीय मन मस्तिष्क तथा स्वास्थलाई निकै सकारात्मक असर पुर्‍याउने व्यवसायको रुपमा हाल सबै क्षेत्र, तह, वर्ग र समुदायका व्यक्तिहरुबाट प्रशंसनिय यस व्यवसाय र यसबाट उत्पादित फूल बोट बिरुवाहरु प्रति मान्छेको मोह बढ्दो छ । दिन प्रतिदिन नर्सरीको संख्या बढ्नु, आम उपभोक्ताले पनि फूल बोट बिरुवाहरुको प्रयोग अत्याधिक रुपमा बढाउदै लैजानुले यो व्यवसायको वर्तमान स्थिति सन्तोषजनक र भविष्य उज्जवल रहेको संकेत गर्दछ । विगतमा काठमाण्डौ केन्द्रित यो व्यवसाय अहिले विकेन्द्रीकरण भइ नेपालका अन्य शहरहरु जस्तै पोखरा, चितवन, धरान, बिराटनगर, नेपालगंज, जनकपुर, बुटवल, धनगढी लगायत अन्य ठाउहरुमा पनि फैलिने क्रम जारी छ । जसले गर्दा यो व्यवसायले देशभर रोजगारीको अवसर सिर्जना गरिरहेको छ ।

वर्तमान सन्दर्भमा यस व्यवसायको कुरा गर्दा अहिलेको स्थितिसम्म आइपुग्नका लागि यसै नर्सरी व्यवसायीहरुको एकमात्र संगठन फ्लोरिकल्चर एशोसिएसन नेपालले खेलेको भुमिका पनि निकै प्रर्शसनिय तथा सहानिय छ । बेला बेलामा फ्लोरि कल्चर एशोसिएसन नेपालद्वारा आयोजना गरिने सम्बन्धित बिषयका विभिन्न तालिमहरु, अन्तरकृया, गोष्ठी, भ्रमण तथा विशेषज्ञहरुसँगको भेटघाटले यस व्यवसायलाई उठाउन निकै ठूलो सहयोग गरेको र निरन्तर गरिरहेको छ । साथै विशेषगरी यै नर्सरी व्यवसाय र व्यवसायीहरुको उत्थान, बजार प्रवर्द्धन, विकार र विस्तारका लागि फ्लोरिकल्चर एशोसिएसन नेपालद्वारा विभिन्न संघ संस्थाहरुसँग मिलेर गरिने पुष्प व्यापार मेलाहरुले नर्सरी व्यवसायीहरु माझ उत्साह र प्रेरणा थप्ने तथा एक आपसमा भाइचाराको विकास गरेको पाइन्छ ।

भविष्य

विगतमा पराम्परागत तथा संकुचित स्थितिबाट गुज्रेर वर्तमानमा संतोषजनक र परिबर्तित् स्वरुप लिएर अगाडी आएको यो नर्सरी व्यवसाय भविष्यमक डलर फलाउने व्यवसायको रुपमा विकास हुने प्रचुर सम्भावना रहेको छ । वर्तमानमा शहरी भ्रमणमा मात्र केन्द्रित यो व्यवसाय भविष्यमा बिस्तारै ग्रामिण इलाकातिर पनि फैलिने सम्भावना देखिन्छ । शहरी इलाकामा खुल्ला स्थानको अभाव हुँदै जाने, महंगो जग्गा भाडा तिर्नुपर्ने तथा महंगो श्रम मुल्य हुने कार णले गर्दा यस्तो स्थिति आउन सक्छ । जुन तुलनात्मक रुपमा राम्रो पनि हो किनकी ग्रामिण इलाकालाई उत्पादन केन्द्र बनाउने र शहरी इलाकालाई बिक्री केन्द्र बनाउने गर्दा दुबै इलाकाका व्यक्तिहरुले रोजगार पाउनेछ । त्यसैगरी हाइब्रिड बिउ बिजन आफ्नै देशमा उत्पादन गरी देशको पैसा विदेशिनबाट जोगाउने तथा आलंकारिक बोट बिरुवाहरुका लागि पनि पूर्ण रुपमा आफै उत्पादन गरी आत्मनिर्भर हुन सक्ने स्थिति देखिन्छ । बिगत र वर्तमानको तुलनामा

भविष्यमा यस नर्सरी व्यवसायलाई आफै परिमार्जित गरी आधुनिक बनाउदै लैजानका लागि युवा पुस्ताले निकै महत्वपूर्ण भुमिका खेल्ने देखिन्छ ।

प्राकृतिक सुन्दरता, भौगोलिक विविधता र त्यसभित्रका विशिष्ट पहिचान बोकेका असंख्य फूल बोट बिरुवाहरुले गर्दा नेपालको पुष्प व्यवसायको भविष्य अत्यन्त उज्जवल देखिन्छ । तर यसका लागि सरकारी नीजि साझेदारीको अवधारणालाई अभ्यासमा ल्याई ब्यापक अध्ययन तथा अनुसन्धान गरी अघि बढ्न जरुरी देखिन्छ । त्यसैगरी विदेशी बजारमा प्रतिष्पर्धा गर्न सकिने खालका फूल बोट बिरुवाहरु हामी सस्तो भन्दा सस्तो मुल्यमा उत्पादन गरी अन्तराष्ट्रिय स्तरको मुल्यमा बाह्य बजारमा बिक्री गर्न सकिने प्रचुर सम्भावना यस पुष्प व्यवसायमा रहेको पाइन्छ । यसबाट देशले पनि प्रत्यक्ष रुपमा आर्थिक फाइदा पाउने छ ।

निश्कर्ष

वास्तवमा आफ्नै देशको हावापानी माटोको प्रयोग गरी संचालित नर्सरी व्यवसाय एक अत्यन्त संभावना युक्त व्यवसाय हो । उच्च मुल्य बालीको रुपमा रहेको पुष्प तथा आलंकारिक बोट बिरुवासंग सम्बन्धित यो नर्सरी व्यवसायलाई प्रबर्द्धन गरी बिकास र बिस्तार गरिनु पर्ने आजको आवश्यकत देखिन्छ । जसबाट प्रत्यक्ष तथा अप्रत्यक्ष रुपमा देशको हित हुने सुनिश्चित छ । देशलाई आर्थिक टेवा, रोजगारीको सृजना तथा वातवरणिय सुन्दरत बढाउने यस नर्सरी व्यवसायको बिकास र बिस्तारका लागि सम्बन्धित सम्पुर्ण पक्षहरुले गहिरो अध्ययन तथा अनुसन्धान गरी अघि बढेमा चौतर्फी हित अवस्य हुनेछ ।

सन्दर्भ सामग्री

FAN ले प्रकासन गरेको बिभिन्न लेख तथा प्रतिबेदनबाट साभार

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पुष्प व्यबसायलाई व्यबसायिक तथा प्रतिस्पर्धी बनाउन सहयोग पुऱ्याउने कृषिका नीतिगत व्यबस्था र योजना

संकलन कर्ता अनिलकुमार आचार्य

दीर्घकालिन कृषि योजना (APP) (२०५२/५३-०७१/०७२) :

पाँच पारस्परिक सम्बन्ध राख्ने उद्देश्यहरु :

- उत्पादन श्रोत साधनको उत्पादनशीलता बढाएर कृषि विकासको बृद्धि द्रुततर गराउने ।
- द्रुततर विकास र रोजगारीका अवसरहरु बढाएर गरीवी घटाउँदै जीवनस्तरमा उल्लेखनीय सुधार ल्याउने
- विविधीकरण र तुलनात्मक फाइदा विस्तृत रुपमा हासिल गर्दै निर्वाहमुखी कृषिलाई व्यवसायीकरणमा परिवर्तित गराउने ।
- कृषि विकासका पूर्वाधारहरुको व्यबस्था मिलाएर समष्टिगत आर्थिक परिवर्तनको लागि अवसरहरु बढाउने
- योजना कार्यान्वयनका लागि तत्कालिन, अल्पकालीन र दीर्घकालीन रणनीतिहरुको पहिचान गर्ने र भविष्यमा आवधिक योजना तथा कार्यक्रमहरु तर्जुमा गर्न चाहिने स्पष्ट मार्गदर्शन दिने ।

यस योजनामा प्राथमिकता प्रदत्त उत्पादक तत्वहरु निम्नानुसार रहेका छन् (प्रत्यक्ष सम्बन्धित अंशमात्र)

बढी मूल्यका बालीहरु :

- योजनावधिमा उच्च मूल्यका बालीहरुबाट हुने आय तेव्वर हुने अनुमान गरिएको छ ।
- बागवानी व्यवसाय तराईमा भन्दा पहाड तथा उच्च पहाडमा बढी हुने भएकोले पहाड र उच्च पहाडमा प्रतिव्यक्ति बागवानीजन्य ग्राहस्थ उत्पादन योजनाको दोश्रो अवधिपछि तराईमा भन्दा बढी हुनेछ ।
- योजनामा सरकारी निकायहरुको भूमिका भन्दा निजी क्षेत्रको भूमिका यस क्षेत्रमा महत्वपूर्ण मानेको छ ।

कृषिजन्य व्यबसायहरुको बृद्धि :

- यस योजनाले कृषिसंग सम्बन्धित स-साना व्यवसायहरुको विकास तथा विस्तारमा प्राथमिकता दिएकोछ ।
- कृषिजन्य व्यवसायले अन्य कृषकहरुका साथसाथै खास गरी महिला कृषकहरुलाई केही हदसम्म आर्थिक स्वतन्त्रता पाउने मौकाहरु दिने भएकोले र महिलाहरु बढी संलग्न हुने रेशम खेती, सुठो बनाउने, अलैंची प्रशोधन, फलफूल प्रशोधन, *आलंकारिक फूलहरुको संकलन र केशरजस्ता व्यवसायहरु* उपयुक्त ठानेको छ ।

राष्ट्रिय कृषि नीति २०६१ :

व्यवसायिक एवं प्रतिस्पर्धात्मक कृषि प्रणालीद्वारा उच्च एवं दीगो आर्थिक बृद्धि हासिल गरी खाद्य सुरक्षा तथा गरीवी निवारणमा योगदान गर्न यस कृषि नीतिले निम्न लिखित उद्देश्य लिएको पाइन्छ ।

- कृषि उत्पादन एवं उत्पादकत्व बढाउने ।
- व्यवसायिक तथा प्रतिस्पर्धात्मक कृषि प्रणालीका आधारहरुको विकास गरी क्षेत्रीय र विश्व बजार संग प्रतिस्पर्धात्मक बनाउने ।
- प्राकृतिक श्रोत, वातावरण र जैविक विविधताको संरक्षण, सम्वर्द्धन एवं सदुपयोग गर्ने ।

यस नीतिले प्रस्तुत उद्देश्य प्राप्तीका लागि श्रोत साधनमा पहुँच भएका र साधन र अवसरमा तुलनात्मक रुपमा न्यून पहुँच भएका दुवै समूहका कृषकहरुको आवश्यकतालाई समेट्ने गरी निम्न नीतिहरु अवलम्बन गर्ने नीति रहेको पाइन्छ ।

प्रमुख, पुष्प विकास केन्द्र, गोदावरी

कृषि उत्पादन एवं उत्पादकत्व अभिवृद्धि (प्रत्यक्ष सम्बन्धित अंशमात्र) :

- उत्तर-दक्षिण राजमार्ग तथा सहायक मार्गहरुको आसपासका संभाव्य क्षेत्रहरुमा बढी मोल जाने कृषि वस्तुको पकेट विकासमा विशेष प्राथमिकता दिइनेछ । विशेष गरी दुर्गम क्षेत्रहरुमा कम तौल तथा बढी मोल जाने कृषि बस्तुहरुको उत्पादनमा प्राथमिकता दिइनेछ ।
- विकास क्षेत्र र भौगोलिक उपक्षेत्रहरुको आधार मा स्थानिय बीउ, बेर्ना, विरुवा, नश्लहरुको उत्पादन गर्नेहरुको लागि गुणस्तरीय श्रोत सामग्रीहरुको केन्द्र र कृषिबस्तु संकलन, प्रशोधन, संचय र ढुवानी आदि कार्य गर्ने उद्यमी तथा व्यबसायीहरुको लागि विशेष प्रविधि सेवाको स्रोतकेन्द्रका रुपमा राष्ट्रिय कृषि स्रोत केन्द्रहरुको विकास गरी सुदृढ गरिनेछन् । यस्ता स्रोत केन्द्रहरुलाई माटो विश्लेषण, बीउ प्रमाणीकरण, बाली संरक्षणका क्षेत्रमा सर्भे सर्भिलेन्स सेवा सञ्चालन, प्रयोगशाला सेवा संचालन एवं उद्यमी, व्यबसायी, सहकारीकर्मी एवं कृषि कार्यकर्ताहरुको क्षमता विकास तालिम समेत दिन सक्ने एकीकृत केन्द्रको रुपमा विकास गर्दै लगिनेछ ।
- भौगोलिक सम्भाव्यता र तुलनात्मक तथा स्थान विशेषको विशिष्ट लाभ समेतका दृष्टिबाट आवश्यक पर्ने कृषि अनुसन्धान कार्यहरु (खाद्य तथा पोषण प्रविध लगायतका कृषि उत्पादन, संकलन, ग्रेडिङ्ग, भण्डारण, प्रशोधन, प्याकिङ्ग आदि) का लागि निजी क्षेत्र र गैरसरकारी क्षेत्र समेतको सहभागितात्मक तथा प्रतिस्पर्धात्मक कृषि अनुसन्धान तथा विकास प्रणालीको प्रवर्द्धन गरिनेछ ।
- निजी तथा गैरसरकारी क्षेत्रबाट कृषि अनुसन्धान तथा विकासमा गरिने खर्चमा कर प्रयोजनको लागि खर्च लेख्न पाउने सुविधाका साथै अन्य उपयुक्त प्रोत्साहन सम्बन्धी व्यवस्थाहरु गरी निजी तथा बैदेशिक क्षेत्रको लगानी आकृष्ट गरिनेछ ।
- कृषिका कार्यक्रमहरुको संचालनमा सम्भव हुने सबै क्षेत्रमा महिला संलग्नता एवं सहभागीतालाई ५० प्रतिशत पुऱ्याइनेछ ।

व्यवसायिक तथा प्रतिस्पर्धात्मक कृषि प्रणालीको विकास (प्रत्यक्ष सम्बन्धित अंशमात्र) :

- पशुविमाको विस्तार गरिनुका साथै पन्छी एवं छानिएका वालीको बीउ र बढी मोल जाने कृषि वस्तुहरुको क्रमिकरुपमा बीमा गरिनेछ ।
- प्राङ्गारिक खेतीलाई प्रोत्साहन गरिनेछ ।
- शिक्षित बेरोजगार युवाहरुलाई कृषि पेशामा आकृष्ट गर्न कृषि व्यबसाय स्थापना तथा सञ्चालन तालिमको व्यबस्था गरिनेछ ।
- गुणस्तरिय कृषि उत्पादन र स्थानिय तथा बाह्य बजारमा विश्वसनीयताको विकास गर्न कृषि क्वारेन्टाइन सेवालाई व्यबस्थीत र सुदृढ गरिनेछ ।
- सहकारीमा आधारित कृषि उद्योग एवं व्यबसायको प्रवर्द्धनमा प्राथमिकता दिइनेछ ।
- व्यबसायिक कृषि उत्पादनका सम्भाव्य क्षेत्रहरुमा कृषि प्रविधि प्रसार सेवा सशुल्क उपलब्ध गराई निजी क्षेत्र, सहकारी क्षेत्र तथा गैरसरकारी क्षेत्रलाई आकर्षित गरिनेछ ।
- उपयुक्त फार्म केन्द्रहरुलाई करारमा/कवुलियतमा निजी क्षेत्रबाट सञ्चालन गराउन प्रोत्साहन गरिनेछ ।
- आन्तरिक कृषि उत्पादकहरुलाई समेटेर करार उत्पादन प्रणालीमा आवद्ध गरी बजार अवसर दिने र आयात प्रतिस्थापन गर्ने वा निकासी गर्ने उद्योग व्यवसायीहरुलाई पूँजीगत तथा अन्य प्रोत्साहन/सुविधाहरु कृषि व्यबसाय प्रवर्द्धन समितिको सिफारिसमा उपलब्ध गराइनेछ ।

प्राकृतिक श्रोत, वातावरण र जैविक विविधताको संरक्षण, सम्वर्द्धन एवं सदुपयोग (प्रत्यक्ष सम्बन्धित अंशमात्र)

- कृषि रसायनहरुको प्रयोगबाट माटो तथा जलाशयको अवस्थामा पर्ने नकारात्मक प्रभाव र अन्य वातावरणीय समस्यालाई न्यून गरिनेछ ।
- जैविक विविधता संरक्षणका लागि जीन बैंकको व्यबस्था र स्थानिय संरक्षण (In Situ Conservation) लाई प्रोत्साहित गरिनेछ । सम्भावीत क्षेत्रमा सहभागितात्मक जैविक

विविधता संरक्षण क्षेत्र (Participatory Biodiversity Park) स्थापित गरिने छ ।

द्रष्टव्य :- कृषि शब्दले बाली, बागवानी, पशुपन्छी, माछा आदि कृषिका सबै उपक्षेत्रसंग सम्बद्ध उत्पादन, उद्योग एवं व्यबसायहरु समेतलाई जनाउँदछ ।

कृषि व्यबसाय प्रवर्द्धन नीती २०६३

प्रभावकारी बजार व्यबस्थापन प्रणालीको विकासबाट विश्व बजारका अवसरहरुको उपयोग गरी राष्ट्रिय अर्थतन्त्रमा टेवा पु-याउन कृषि नीति, २०६१ को "व्यबसायिक तथा प्रतिस्पर्धात्मक कृषि प्रणालीका आधारहरुको विकास गरी क्षेत्रीय र विश्व बजारसंग प्रतिस्पर्धात्मक बनाउने" उद्देश्य अनुरुप कृषि व्यबसाय प्रवर्द्धन कार्यलाई गति प्रदान गर्न "कृषि व्यवसाय प्रवर्द्धन नीति, २०६३" लागू गरिएको छ । यसमा निम्न मुख्य ३ उद्देश्य लिएको पाइन्छ ।

- बजारमुखी र प्रतिस्पर्धात्मक कृषि उत्पादन गर्न सघाउ पु-याउने ।
- कृषिजन्य उद्योगको विकास गरी आन्तरिक बजार तथा निर्यात प्रवर्द्धनमा योगदान पु-याउने ।
- कृषिको व्यवसायीकरण गरी गरीबी निवारणमा सहयोग पु-याउने ।

यसमा भएका नीतिगत व्यबस्था (प्रत्यक्ष सम्बन्धित अंशमात्र) :

- कृषि व्यबसाय प्रवर्द्धन गर्नका लागि कृषि व्यवसायका सम्भावना र आवश्यकताको आधार मा कृषक एवं व्यापारीहरु तथा कृषि उद्यमी एवं सम्वन्धित सरोकारवालाहरु वीच हुने करार सेवालाई व्यवस्थित तथा वैज्ञानिक बनाईनेछ ।
- कृषिजन्य व्यबसायको लागि आवश्यक पर्ने उपकरण, थ्रेसर, स्प्रिङ्कलर, विडिङ्ग मेसिन, हार्भेष्टर, चिलिङ्ग भ्यान, कुलिङ्ग भ्याट, कृषि यन्त्र आदिमा आयात गर्दा सम्वन्धित निकायहरुको सिफारिसमा स्थापना भएको १० वर्षसम्म ७५ प्रतिशत भन्सार अर्थ मन्त्रालयको बजेट बक्तव्यमा समावेश गरी छुट दिइनेछ ।
- कृषि व्यवसायको परियोजना धितोमा राखी कर्जा प्रवाह गर्ने व्यबस्था मिलाइनेछ । कृषि व्यबसाय प्रवर्द्धनका लागि कृषक समूह जमानतमा ऋण प्रवाहित गरिनेछ ।
- कृषि व्यबसायमा कर्जा लगानी गर्दा व्यबसायबाट आय प्राप्त हुन सक्ने (Gestation period) सम्भावनाका आधारमा कर्जा भुक्तान हुने व्यबस्था गरिनेछ ।
- सार्वजनिक क्षेत्रको जग्गा तथा अन्य क्षेत्रमा समेत सम्भाव्यताका आधारमा जडीबुटी खेतीको विकासलाई प्रोत्साहित गरिनेछ ।
- कृषि वजार तथा व्यवसायिक सेवा केन्द्रहरुमा समयानूकुल विद्युतिय व्यापार (E-commerce) को पनि विकास गरिनेछ ।
- निजी एवं सहकारी क्षेत्र तथा स्थानिय निकायहरुको साझेदारीमा कृषि बजार तथा कृषि व्यवसायसंग सम्बन्धित सूचना प्रणालीको विकास, विस्तार र प्रवाह गरिनेछ ।
- कृषि बस्तुहरुको बजारमा प्रतिस्पर्धात्मक वातावरणको सिर्जना गरी बजार प्रकृयाबाटै मूल्य निर्धारण हुने प्रणालीलाई प्रोत्साहित गरिनेछ । यस क्रममा संगठित कृषि थोक बजार स्थलहरुमा सम्भाव्यताका आधारमा अक्सन (Auction) लगाएत उपयुक्त मूल्य निर्धारण विधि लागू गरिनेछ ।
- कृषि बजारहरुमा स्थानिय निकायले व्यबसायीहरुबाट उठाउने गरेको शुल्क/स्थानिय कर मध्येबाट कम्तीमा २० प्रतिशत रकम सोही बजारको निर्माण, सुधार तथा प्रवर्द्धन कार्यमा खर्च गर्ने व्यबस्था मिलाइनेछ ।
- व्यबसायीहरुले कृषि उपजहरुको ढुवानीको साधन खरिद गर्न चाहेमा व्याजदरमा सहुलियतको व्यबस्था गरिनेछ ।
- शीत भण्डार (Cold and Frozen Storage, Cold Chain, Cold Chamber and Chilling Vat), कृषि थोक बजार एवं संकलन केन्द्र सञ्चालनमा लाग्ने विद्युत महसुलमा उद्यम/व्यवसाय स्थापनाको १० वर्षसम्म २५ प्रतिशत रकम अर्थ मन्त्रालयको बजेट बक्तव्यमा समावेश गरी छुट दिइनेछ ।
- वीउ विजन, विरुवा र खाद्य तथा कृषि वस्तुको आयात निर्यातमा प्रमाणीकरणको व्यवस्थालाई सुदृढ र सक्षम बनाइनेछ ।

- परम्परागत स्थानीय कृषि वस्तु एवं मौलिक प्रविधि (Indigenous Knowledge/Technology) हरुको पञ्जीकरण गरी प्रवर्द्धन गर्ने व्यबस्था मिलाइनेछ ।
- गुणस्तर प्रमाणीकरण गर्न सरकारी तथा निजीस्तर बाट एक्रेडिएटेड ईन्डिपेन्डेन्ट एनालिटिकल लेवोरेटरी (Accredited Independent Analytical Laboratory) हरुको स्थापना र बिकासलाई प्रोत्साहन गरी उनीहरुको क्षमताको अभिवृद्धि गर्न सहयोग गरिनेछ ।
- करार खेतीमा प्रयोग हुने जग्गामा मोहियानी नलाग्ने व्यबस्था गरिनेछ ।
- बिदेशस्थित नेपाली राजदूतावासमार्फत निर्यात बजारको सूचना प्रवाह एवं प्रवर्द्धन कार्यलाई सघाउ पुऱ्याइनेछ ।
- तुलनात्मक लाभका अवसरहरुको उपयोग गरी निर्यात प्रवर्द्धन गर्न बैदेशिक बजारको मागको खोजी गरी प्राप्त सूचना/प्रविधि हस्तान्तरण तथा प्रसार गरिनेछ ।
- व्यवसायिक कृषिसंग सम्वन्धित बाली उत्पादन, बजार व्यबस्था तथा कृषि उद्योगहरुको विमा गराउने व्यबस्थाको विकास गरिनेछ ।

द्रष्टव्य : "कृषि व्यवसाय" भन्नाले बाली, बागवानी, पशपंक्षी, माछा आदि कृषिका साथै उप-क्षेत्रसंग सम्बद्ध व्यवसायिक उत्पादन, बेचविखन र प्रशोधन सम्वन्धी कार्यहरुलाई जनाउँदछ ।

कृषि जैविक विविधता नीति, २०६३ :

जैविक विविधताको अभिन्न अङ्गको रुपमा रहेको कृषि जैविक विविधता मानव जातीको आधारभूत खाद्य सुरक्षा तथा जीविकोपार्जनको लागि अपरिहार्य छ । नेपालमा कृषि जैविक विविधताका अभिन्न अङ्गहरु प्रयाप्त मात्रामा उपलव्ध भएतापनि समयको अन्तरालमा स्थानिय कृषिजन्य आनुबंशिक श्रोत लोप हुन लागेको तथ्य अध्ययन अनुसन्धानले प्रष्ट पारेको छ । जैविक विविधताको बढी उपयोग हुने प्रजाति (Species) लाई समेट्ने कृषि जैविक विविधतालाई राष्ट्रले राखेको दिगो कृषि विकासको लक्ष अनुरुप आर्थिक उपलब्धी हासिल गर्न एवं पर्यावरणीय सन्तुलन कायम गर्न जैविक विविधता संरक्षण हुन अति आवश्यक छ । उपर्युक्त आवश्यकतालाई मध्येनजर राख्दै, नेपाल पक्षधर रहेको अन्तर्राष्ट्रिय जैविक विविधता महासन्धि १९९२ (Convention on Biological Diversity 1992) एवं साझा समझदारी तथा नेपाल जैविक विविधता रणनीति, २०५९ समेतलाई दृष्टिगत गरी "राष्ट्रिय कृषि नीति, २०६१" को जैविक विविधताको संरक्षण, सम्वर्द्धन एवं सदुपयोग गर्ने उद्देश्य अनुरुप यो नीति लागू गरिएको छ ।

यसमा भएका नीतिगत व्यबस्था :

- कृषि जैबिक विविधताको संरक्षण, सम्वर्द्धन र दिगो उपयोग
- कृषकको परम्परागत ज्ञान, सीप, खोज, प्रविधि, उपयोग र अभ्यासहरुको हक हितको संरक्षण एवं सम्बर्द्धन
- कृषि आनुवंशिक श्रोत तथा पदार्थको पहुँच र उपयोगबाट श्रृजित अवसर र लाभहरुको समन्यायिक एवं न्यायिक वितरण प्रणालीको व्यवस्था
- दीर्घकालिन रुपमा कृषि जैविक विविधताको संरक्षण एवं सम्बर्द्धन गरी पर्यावरणीय सन्तुलन अभिवृद्धि

तीन वर्षीय अन्तरिम आवधिक योजना (२०६४/६५-०६६/६७):

"समृद्ध, आधुनिक र न्यायपूर्ण नेपाल" निर्माणका लागि आर्थिक, सामाजिक रुपान्तरणको आधार तयार गर्नु यस अन्तरिम योजनाको प्रमुख लक्ष रहेको छ ।

यसमा भएका कृषिका नीतिगत व्यबस्था (प्रत्यक्ष सम्बन्धित अंशमात्र) :

- कृषिलाई विकासको मूल आधार बनाउने गरी समष्टिगत आर्थिक नीतिमा समायोजन गरिनेछ । आधुनिक एवं उपयुक्त प्रविधिको प्रयोगबाट कृषि क्षेत्रको विशेष गरेर उच्च मूल्यका कृषि उपजको उत्पादकत्व बृद्धि गर्न र उत्पादन लागत कम गर्न सहयोग गरिनेछ । यसैगरी *बागवानी,* रेशम खेती, मत्स्य पालन, *पुष्प व्यबसाय,* पशुपालन, *फलफूल, जडीबुटी* उत्पादन लगायत नगदे बालीको प्रवर्द्धन गरिनेछ ।
- निर्वाहमुखी कृषि प्रणालीलाई व्यवसायिक कृषितर्फ उन्मुख गर्दै व्यवसायिक कृषिलाई राष्ट्रिय तथा

अन्तर्राष्ट्रिय बजारको माग अनुरुप प्रतिस्पर्धी हुन र गुणस्तरिय उत्पादनका लागि कृषिका सबै सरोकारवालाहरु (उत्पादक, प्रशोधनकर्ता, व्यापारीवर्ग) को माग र आवश्यकताअनुसार उपलब्ध श्रोतको आधारमा सहयोग पुऱ्याइनेछ ।

- उच्च मूल्यका तुलनात्मक लाभ भएका प्राङ्गारिक कृषि उत्पादनमा विशेष जोड दिई अन्तर्राष्ट्रिय क्षेत्रमा चिनाउने नीति तथा कार्यक्रम कार्यान्वयन गरिनेछ ।
- कृषि व्यवसायमा विमा नीति अवलम्वन गरिनेछ ।

पुष्प व्यवसायमा ऋण सम्वन्धी नीति तथा व्यवस्था:

- पुष्प व्यबसायको लागि कृषि विकास बैंकले १० प्रतिशत व्याजदरमा ऋण प्रवाह गर्दछ । यस व्याजदरमा नेपाल सरकारले ३ प्रतिशत अनुदान दिने व्यबस्था गरेको पाइन्छ । जस अनुसार यस व्यबसायको लागि ७ प्रतिशतको व्याजदरमा ऋण उपलव्ध हुने व्यबस्था भएको देखिन्छ ।
- समय-समय व्याज तथा साँवा अंश बुझाउने ऋणीलाई कृषि विकास बैंकले राम्रो कारोवार तथा वित्तिय अनुशासनमा बस्ने भनी Green Card Holder ऋणीको रुपमा सम्मानित गरी उक्त व्याजदरमा (७ प्रतिशत) १.२५ प्रतिशत छुट दिई ५.७५ प्रतिशत व्याज कायम गर्ने व्यबस्था भएको पाइन्छ ।

श्रोत सामग्री :

कृषि क्षेत्रको दीर्घकालीन योजना (आ.व.२०५२/५३-२०७१/७२, राष्ट्रिय योजना आयोग, मार्ग २०५२
राष्ट्रिय कृषि नीति २०६१, कृषि सूचना तथा संचार केन्द्र, २०६१/६२
तीन वर्षीय अन्तरिम योजनाको आधार पत्र, २०६४/६५-२०६६/६७, राष्ट्रिय योजना आयोग, आषाढ, २०६४
कृषि व्यवसाय प्रवर्द्धन नीति, २०६३, कृषि तथा सहकारी मन्त्रालय, सिंहदरवार, काठमाण्डौं, मार्ग २०६३
कृषि विकास बैंकबाट प्रवाहित हुने कर्जा सम्बन्धि संक्षिप्त जानकारी, मंसिर २०६२
संग्रहकर्ता श्री धुब्र नारायण मानन्धर, कृषि सम्वन्धि ऐन, नियम र नीति संग्रह, पौष, २०६४

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फ्लोकिल्चर एशोसिएसन नेपालले आ.ब.२०६३/६४ मा भए गरेको कार्यक्रम तथा गतिबिधी (वार्षिक प्रतिवेदनको सारांश)

अरुण क्षेत्री

पुष्प व्यवसायको विकास, बिस्तार, प्रवर्द्धनको साथै व्यवसायिक हक, हित र अधिकारको सरंक्षणको निम्ति स्थापना भएको मुनाफा रहित सामाजिक संस्था यस FAN ले नेपाल सरकार लगायत विभिन्न स्थानिय, राष्ट्रिय र अन्तराष्ट्रिय संघ संस्थाहरुसंग समन्वय गरी विगतका अनुभव, वर्तमान परिस्थिति, भविष्यको सम्भावनालाई अध्ययन गरी, वर्तमान र भविष्यलाई लक्षित गरी नीति, नियमको तर्जुमा तथा कार्यन्वयन गर्ने गरेको छ । जतिसुकै जटिल परिस्थिति रहेतापनि अधिराज्यभरिको पुष्प व्यवसायीहरुको एक मात्रा छाता संगठन भएकोले समस्त पुष्प व्यवसायीहरुलाई संगठित गरी सबै पुष्प व्यवसायिकहरुको हक, हित र अधिकारको संरक्षण तथा नेपाली पुष्प व्यवसायको दिगो बिकास, बिस्तार तथा प्रबर्द्धनका क्षेत्रमा सदा कृयासिल रहि कार्य गर्दै आएको छ । यस आ.ब. ०६३/६४ मा ५६ जना नयाँ सदस्यहरुले प्रबेश गरेका छन् । यस संस्थाको साधारण सदस्य संख्या आ.ब.२०६३/६४ को अन्तसम्ममा जम्मा २६५ पुगि सकेको छ ।

नियमितरुपमा पुष्प व्यवसायको क्षेत्रमा देखा परेका वा आई परेको समस्यहरुको समाधन, नीति पैरबीका साथै एक छुट्टै राष्ट्रिय पुष्प नीतिको आवश्यकत महसुस गरी नेपाल सरकारसंग नीति पैरबी भैरहेको छ । FAN ले राष्ट्रिय पुष्प नीति ड्राफ्ट समेत गरि कृषि तथा सहकारी मन्त्रालयमा पेश गरि सकेको छ । यस तर्फ नेपाल सरकार सकारात्मक देखिएको छ ।

यस बर्ष नेपल सरकारबाट पुष्प व्यवसायको क्षेत्रमा निम्न सुबिधा तथा व्यवस्था गरेको छ जुन यस प्रकार रहेको छ ।

नेपाल सरकारले आ.बर्ष. २०६४/६५ को बजेटमा फ्लोरिकल्चरलाई दिई आएको कृषि विकास बैंकबाट लिइने ऋण रकमको व्याजमा ३ प्रतिशत अनुदान सहयोगलाई यो बर्षमा पनि कायमै राखेको छ । आर्थिक विद्येयक २०६४ को अनुसुची १, दफा-५ को उपदफा (३) संग सम्बन्धित, समुह-१(ख) र समुह-४ (क), (ख), (ग) र (घ)मा उल्लेख गरे बमोजिम फ्लोरि कल्चरका निम्न बस्तुमा कर छुटको व्यवस्था गरेको छ ।

क) फूल बिरुवाको बिऊ बिजन, बिरुवा कलमी तथा बिऊ बिजनको रुपमा प्रयोग हुने गानो जरा ।
ख) मल रासायनिक मल र माटोको उपचार सामाग्री ।
ग) कृषि कार्यमा प्रयोग हुने सामान्य औजारहरु ।
घ) बालीनालीमा मात्र प्रयोग हुने किटनाशक, ढुसीनाशक, झारनाशक र मुसानाशक औषधी ।
ङ) ताजा फूल

पुष्प फर्महरुले पैठारी गर्ने फूलका गाना तथा जराहरु र फूलको बिउ बिजनमा भन्सार महसुल तथा कृषि सुधार शुल्क पूर्ण छुट हुने व्यवस्था गरेको छ । (आर्थिक विद्येयक २०६४ को दफा २० (ख) अनुसार)

भन्सार महसुल १ प्रतिशत मात्र लाग्ने : (आर्थिक विद्येयक २०६४ को दफा १६ (८) अनुसार)
कृषि बागवानी तथा पुष्प फार्महरुले पैठारी गर्ने ग्रिन हाउस, सिचाई उपकरण र यस्तै अन्य उपकरण पैठारी गर्दा १ प्रतिशत मात्र भन्सार महसुल लाग्ने व्यवस्था आर्थिक बिद्येयक २०६४ द्वारा जारी गरेको छ ।

कार्यक्रम तथा गतिबिधीहरु :

क) एग्रो एक्सपो २०६३
कृषि मुलक उत्पादनहरुलाई उपभोक्ता, व्यवसायीहरु, निति-निमार्णकर्ता, दाताहरु, संघ संस्थाहरु, राष्ट्रिय तथा अन्तराष्ट्रिय संस्थाहरु आदि समक्ष पुर्याउने उद्देश्य लिएर कृषि उद्यम केन्द्र/उ.वा.महासंघको आयोजना र सरकारी तथा अन्य बस्तुगत संघ संस्थाहरुका साथै फ्लोरिकल्चर एशोसिएसन नेपालको सह आयोजनामा मिति २०६३ आश्विन २६ गते देखि आश्विन ३० गतेसम्म "आर्थिक समृद्धिमा प्रतिष्पर्धात्मक

महासचिब, फ्लोरिकल्चर एशोसिएसन नेपाल

कृषि" भन्ने मुख्य नाराको साथमा विरेन्द्र अन्तराष्ट्रिय सम्मेलन केन्द्र नयाँ बानेश्वरमा पाँच दिने कृषि मेला २०६३ सम्पन्न भयो ।
जसमा २० वटा स्टल रहेको पुष्प प्रदर्शनीमा मौसमी फूल बिरुवाहरु, आलंकारिक बिरुवाहरु तथा कट्फ्लावर आदीको प्रदर्शन गरिएको थियो ।

ख) कार्यशाला/गोष्ठि

कृषि मेला आयोजनाकै क्रममा FAN ले "राष्ट्रिय पुष्प नीति आजको आवश्यकता" बिषयक एक दिने कार्यशाला/गोष्ठी आयोजना गरियो । FAN का अध्यक्ष श्री श्रीधर कार्कीको सभापतित्व रहेको उक्त गोष्ठीमा प्रमुख अतिथिका रुपमा ने.उ.वा.महासंघका द्वितिय उपाध्यक्ष श्री कुश कुमार जोशी रहनुभएको थियो । अन्य अतिथिहरुमा कृषि तथा सहकारी मन्त्रालयका सह सचिब डा. के.बी. श्रेष्ठ, उद्योग वाणिज्य तथा आपूर्ति मन्त्रालयका सह सचिब श्री निरञ्जन बराल तथा कृषि उद्यम केन्द्रका कार्यकारी निर्देशक डा. देवभक्त शाक्यको सहभागिता रहेको थियो । नेपाली पुष्प व्यवसायको इतिहास, वर्तमान स्थिति, क्षेत्र, संभावना, समस्याहरु सहित राष्ट्रिय पुष्प नीति आजको आवश्यकता बिषयक कार्यपत्र FAN का उपाध्यक्ष श्री लोकनाथ गैरेद्वारा प्रस्तुत गर्नु भएको थियो । सर कारी तथा बिभिन्न संघ संस्थाहरुका साथै पुष्प व्यवसायीहरु सहित ५० जना भन्दा बढी महानुभावहरुको सक्रिय सहभागितामा प्रस्तुत कार्यपत्र माथि आबश्यक छलफल गर्नुका साथै पुष्प व्यवसायको क्षेत्रमा अनुसन्धान तथा विकासमा सरकारको लगानी हुनुपर्ने, सरकारलाई बुझाइने करबाट अनुसन्धान तथा विकास कार्यमा उपयोग गरिनुपर्ने, पुष्प सम्बन्धि स्पष्ट नीति आउनु नितान्त आबश्यक भएको यसका लागि नेपाल सराकारले चाडो भन्दा चाडो नीति बनाई लागु गर्नु पर्ने आदि जस्ता सुझाब दिएको थिए ।

ग) पुष्प व्यापार मेला २०६३

आय अभिबृद्धिको लागि पुष्प व्यवसाय भन्ने मुख्य नाराको साथमा २०६३ चैत्र २२ गतेदेखि २६ गतेसम्म पाँच दिने पुष्प व्यापार मेला भृकुटीमण्डप प्रदर्शनी हल, काठमाडौंमा सम्पन्न गरियो । मुख्य आयोजक फ्लोरिकल्चर एशोसिएसन नेपाल तथा सहआयोजकहरु कृषि उद्यम केन्द्र, व्यापार तथा निकारी प्रवर्द्धन केन्द्र र कृषि व्यवसाय प्रवर्द्धन कार्यक्रम कृषि विभागले आयोजनामा गरेको पुष्प व्यापार मेलाको उद्घाटन २०६३ चैत्र २२ गते बिहिबार सम्माननीय सभामुख श्री सुभाष चन्द्र नेम्वाङ्ग ज्यूबाट भएको थियो । मेलामा व्यवसायिक स्टल ५३ वटा, सुचनामुलक ३ वटा र प्रतिस्पर्धात्मक बस्तुको २ वटा गरी जम्मा ५८ वटा प्रदर्शनी कक्ष रहेको थियो । मौसमी फूल, बिरुवाहरु, आलंकारिक बोट बिरुवाहरु, कट्फ्लावर, ड्राइफ्लावर, फूलका बिउ बिजन, औजार उपकर णहरु, प्याकेजिङ्ग सामग्री, मल तथा औषधी आदिका बिक्री तथा प्रदर्शन कक्ष रहेको थियो । यस मेलामा कृषि उद्यम केन्द्र, व्यापार तथा निकासी प्रवर्द्धन केन्द्र र कृषि विभागको सहभागिता र सहयोग रहेको थियो ।
नर्सरी व्यवसायीहरुद्वारा उत्पादित फूलबिरुवाहरुमा स्वच्छ प्रतिस्पर्धा गराई पुरस्कृत गरिएको थियो ।

पुरस्कृत हुने नर्सरीहरु:-

उत्कृष्ट स्टल	न्यू सन फ्लावर नर्सरी
उत्कृष्ट ल्याण्डस्केपिङ्ग	स्वयम्भु गार्डेन सर्भिस
उत्कृष्ट बिरुवा	सम्झना नर्सरी
उत्कृट फूल्ने बिरुवा	टि टि आर बगलामुखी नर्सरी
उत्कृष्ट सुनखरी फूल	राइज् अर्किड नर्सरी
उत्कृष्ट मौसमी फूल	काठमाडौं नर्सरी
उत्कृष्ट पुष्प सजावाट	डिजाइन फ्रेस फ्लावर
कट फ्लावर उत्पादक	अन्नपूर्ण फ्लोरिकल्चर रिसर्च सेन्टर
कदर पत्र	द स्टाण्डर्ड नर्सरी

चैत्र २२ गते देखि २६ गतेसम्म संचालित पुष्प व्यापार मेला अवधि भरिमा लगभग ३० देखि ३५ हजारसम्म दर्शकहरुबाट मेला अवलोकन गर्ने अपेक्षा गरिएकोमा राष्ट्रको बर्तमान बिग्रदो राजनैतिक गतिबिधि कारण उल्लेख्य दर्शकहरुले उपस्थिती नरहे पनि मेला अवधि भरि करिब २० लाख सम्मको व्यापारीक कारोबार भएको अनुमान गरिएको छ ।

घ) पोखरा पुष्प व्यापार मेला

कास्की जिल्ला अन्तर्गत गैर पाटन पोखरामा तीन दिने पुष्प व्यापार मेला २०६३ माघ २४ देखी २६ गतेसम्म FAN को सहयोगमा फ्लोरिकल्चर एशोसिएसन नेपाल कास्की जिल्ला समितिको आयोजनामा सम्पन्न गरि एको थियो । स्थानिय नर्सरी व्यवसायीहरुको सहभागिता

रहेको मेलामा बिभिन्न प्रकारका मौसमी फूल बिरुवा, आलंकारिक बोट बिरुवाहरु, सुनखरी फूल बिरुवा, पुष्प सजावट, घर आगन बगैचा सजावट सम्बन्धि बिबिध बस्तुहरुको प्रदर्शनी गरिएको थियो ।

तालिम कार्यक्रम

आ.ब. २०६३/६४ मा निम्न तालिम कार्यक्रम आयोजना गरियो ।

क) नर्सरी तथा कट फ्लावरमा लाग्ने रोग तथा किरा व्यवस्थापन तालिम

स्थान : काठमाण्डौ
मिति : २०६३ पौष ११ गते देखि माघ १२ गते सम्म
सहभागि संख्या : ६६ (नर्सरी तर्फ ४७ जना र कटफ्लावर तर्फ १९)
प्रशिक्षक : फिलिप वाचमान

ख) कैलाली पुष्प उत्पादन तालिम

स्थान : कैलाली
मिति : २०६४ बैशाख १० गते देखि १७ गते
सहभागि संख्या : ३० जना
प्रशिक्षक : लोक नाथ गैरे, कुमार कसजु श्रेष्ठ , सरिना मानान्धर,

ग) बुटवल "कट् फ्लावर उत्पादन बिस्तार" तालिम

स्थान : बुटवाल
मिति : २०६४ आसाढ ५ गते देखि १२ गते
सहभागि संख्या : ३८ जना
प्रशिक्षक : अनिल आचार्या, लोक नाथ गैरे, सरिना मानन्धार

अनुसन्धान तथा बिकास

अनुसन्धान तथा विकास अन्तर्गत निम्न कार्य भएका छन् ।

१. कैलाली भ्रमण कार्यक्रम

कैलाली जिल्लामा पुष्प खेती अन्तर्गत कट फ्लावर उत्पादन तथा नर्सरी व्यवसायको सम्भावना के कस्तो रहेको छ सोको जानकारी स्थलगत अध्ययन गरेर हासिल गर्ने र यदि त्यस्तो सम्भावना देखिएमा त्यहाका इच्छुक व्यवसायी तथा सक्रिय कृषकहरुलाई सो सम्बन्धि तालिम दिनका लागि आवश्यक व्यवस्था गर्नुको साथ साथै उपयुक्त वातावरण बनाउने उदेश्यका कैलाली जिल्लाको अवलोकन भ्रमण कार्यक्रम राखिएको थियो । संस्थाको तर्फबाट अध्यक्ष श्री श्रीधर कार्की तथा नर्सरी उप समितिबाट श्याम सुन्दर प्रजापति र दिलिप बाँदे सहित तीन सदस्यीय टोलीले मिति २०६३ फागुन १ गते देखि ७ गतेसम्म कैलाली जिल्लाको बस्तुगत अवलोकन भ्रमण गरिएको थियो । कैलाली जिल्ला अन्तर्गतका बिभिन्न गा.बि.स. जस्तै मंगलपुर, चौमाला, बुढीतोला आदि ठाँउहरुको अवलोकन तथा अध्ययन गरेको थियो । बुढीतोला गा.बि.स.मा पुष्प खेती गर्नका लागि जमिनको अभाव नरहेको तर कृषकहरुलाई यस व्यवसायप्रति उत्पेरित तथा आकर्षित गर्नु पर्ने आवश्यकता रहेको देखिएको छ । चौमालामा हिउँदमा ग्ल्याडुलसको उत्पादन गर्न सकिने, गुलाब, कार्नेसन, जरबेरा, एन्थरनियम जस्ता फूलको खेती बाह्रै महिना हुने सम्भावना रहेको पाईएको छ । जसको माग हिउँदमा काठमाडौं, नेपालगंजमा पनि फूल लगी बेच्न सकिने, भारतका बजारहरुमा चाँडो भन्दा चाँडो समयमा पुऱ्याउन सकिने जस्ता संभावना देखिएको छ । त्यस्तै गरी तराईमा हुने बिरुवाहरु जुन नर्सरीहरुले भारतबाट आयात गरिरहेका छन् ती बोट बिरुवाहरु टिकापुरमा उत्पादन गर्न सकिने प्रसस्त संभावना रहेको छ । टिकापुरमा धेरै बर्ष अघि त्यँहा स्थापना भएको बृहत उद्यानले गर्दा त्यँहाका बासिन्दाहरु फूल बोट बिरुवा प्रति जनचेतना रहेको तथा धेरै बर्षदेखि नर्सरी सम्बन्धि काम गरिरहेको दक्ष जनशक्ति समेत त्यहाँ भएकोले नर्सरी सम्बन्धि आधारभुत तालिम चलाई रहनु पर्ने आवश्यकता नरहेको देखिएको छ । पुष्प खेती र नर्सरी व्यवसाय एउटा आयमुलक व्यवसाय हो भन्ने मात्र चेतना जगाउन सके र त्यँहाको आन्तरिक बजार व्यवस्थापन गरिदिन सकेमा कैलाली जिल्लामा पुष्प खेती वा पुष्प व्यवसायले एउटा फड्को मार्ने संभावना देखिएको छ । त्यस्तै त्यँहा पुष्प खेती गर्नको

लागि सिंचित खेत पनि पर्याप्त रहेकोले यस जिल्लामा गुलाब, जरबेरा, सयपत्री, ग्ल्याडुलस एन्थरनियमको खेती गर्न सजिलै सकिने देखिएको छ । साथै कैलाली जिल्लाको चौमाला र टिकापुरलाई कट् फ्लावरको पकेट एरियाको रुपमा विकास गर्न सकिने संभावना रहेको समेत पाईएको छ ।

२. Nursery Baseline Study

नर्सरी व्यवसायीहरुको वर्तमान अवस्था तथा विद्यमान समस्याहरु सोका समाधानका गर्नका लागि काठमाण्डौ भ्याली भित्रका Nursery Baseline Study गरिएको छ। उक्त अध्ययन नर्सरी व्यवसायमा निम्न समस्यहरु औल्याएको छन ।

उत्पादन सम्बन्धि समस्याहरु:- अधिकांश उद्यमीहरुलाई मौसमी फूल बिरुवामा लाग्ने मुख्य र ोग तथा किराहरु जनकारीको अभाव, निम्न गुणस्तर तथा मंहगो बिउ, जग्गाको अभाव आदि ।

उत्पादन प्रविधी सम्बन्धि जानकारीको अभाव:- बिरुवा बृद्धि गर्ने, बिरुवाको रेखदेख तथा व्यवस्थापन, नर्सरी व्यवस्थापन आदी ।

बजारीकरण तथा बजार सुचनाको कमि:- उचित मुल्य निर्धारण गर्न नसक्नु , बजारीकरण र सुचना सम्बन्धि ज्ञानको अभाव ।

नीतिगत समस्याहरु:- स्पष्ट नीतिको अभाब, गैर सरकारी तथा निजि संस्थाहरु बिच समन्वयको अभाव र उचित नियम तथा कानुनको अभाव आदि ।

बित्तिय समस्याहरु:- आवश्यक कोषको अभाव, कृषि विकास बैंकबाट ऋण उपलब्ध गराउने कार्यमा देखिएका कठिनाईहरु आर्थिक समस्या हुन् भन्ने जस्ता कुरा निष्कर्ष निकालीएको छ ।

उक्त प्रतिवेदनमा नर्सरी व्यवसायको प्रवर्द्धन तथा विकासमा हाइब्रिड बिउँको उत्पादन, सिजनल फूलको गुणस्तरमा सुधार, सरकारी तथा नर्सरी क्षेत्र बिच समन्वय, रोग तथा किराहरुमा अनुसन्धान, बजार प्रवर्द्धन, आयात प्रतिस्थापन, उत्पादनको गुणस्तरमा नियन्त्रण, नर्सरी सम्बन्धि विभिन्न बिषयमा तालिम, अनुसन्धान तथा विकास कार्यमा सरकारी-निजि क्षेत्रको सहकार्य आदि जस्ता कुराहरुको आवश्यकता रहेको उल्लेख गरिएको छ ।

३. Trade Competitiveness of Floriculture Sub-Sector in Nepal

नेपालमा पुष्प व्यवसाय भित्र व्यवसायिक प्रतिष्पर्धात्मक क्षमताको पहिचान गर्ने उद्देश्यले "Trade Competitiveness Of Floriculture Sub-Sector in Nepal" (Focusing especially on bulbs/tubers/ rhizomes, cut-flower: carnation and orchid) बिषयक अध्ययन प्रतिवेदन तयार गरिएको छ ।

पुष्प सामाग्रीहरुलाई अन्तराष्ट्रिय बजारमा निर्यात गर्नका लागि बजार अनुसन्धान, प्राविधिक आवश्यकताहरु तथा आर्थिक पक्षहरु समावेश गरिएको एक छुट्टै अध्ययनमा आधारित व्यवसायिक योजना बनिनुपर्ने आवश्यकता रहेको कुरा उक्त प्रतिवेदनमा उल्लेख गरिएको छ ।

कार्यपत्र प्रस्तुत

यस आ.ब. २०६३/६४ मा पुष्प व्यवसाय सम्बन्धि निम्न कार्यपत्र प्रस्तुत गरियो ।

१ ५ दिने तेस्रो कृषि मेला २०६३ को संचालनकै अवसरमा FAN, को आयोजना तथा AEC/ FNCCI को सहयोगमा बिरेन्द्र अन्तराष्ट्रिय सम्मेलन केन्द्र नयाँ बानेश्वरमा गरिएको कार्यशाला/गोष्ठिमा राष्ट्रिय पुष्प निति आजको आवश्यकता बिषयक कार्यपत्र FAN का उपाध्यक्ष श्री लोक नाथ गैरेद्वारा प्रस्तुत गरिएको थियो ।

२ "Trade Competitiveness of Floriculture Sub-Sector in Nepal" बिषयक कार्यपत्र FAN का उपाध्यक्ष श्री लोक नाथ गैरेद्वारा AEC/ FNCCI/ USAID तथा FAN को संयुक्त आयोजनामा २०६३/१२/०२ मा उद्योग वाणिज्य महासंघको हलमा संचालन गरिएको एक दिने गोष्ठीमा प्रस्तुत गरिएको थियो ।

३ पुष्प व्यवसायको संभावना तथा चुनौतीहरु बिषयक कार्यपत्र मिति २०६४/०३/२६ मा बुटवल उद्योग वाणिज्य संघको आयोजनामा संचालन गरिएको एक दिने गोष्ठीमा FAN का उपाध्यक्ष श्री लोक नाथ गैरे द्वारा प्रस्तुत गरिएको थियो ।

प्रस्तावनाहरु

यस आ.ब. २०६३/६४ मा निम्न बिषयक प्रस्तावनाहरु पेश गरिएको थियो :-

- Institutionalizing Floriculture under CTEVT (Ministry of Agriculture & Cooperative)
- Expansion of Cymbidium Orchid in Nepal (Ministry of Agriculture & Cooperative)
- Establishment of Permanent Floriculture Wholesale Market under the ownership of FAN (Ministry of Agriculture & Cooperative)
- Exploration of Indigenous species of Flowering plants and management of major diseases of Marigold, Chrysanthemum and Gerbera (Ministry of Agriculture & Cooperative)
- Assessment on current post harvest handling practices of cut flowers and technology generation (Ministry of Agriculture & Cooperative)
- Entrepreneurship development among the youth of Kailali district in floriculture sector (NARDF)
- National Floriculture Policy 2064 (Ministry of Agriculture & Cooperative)
- UN Park Development Program (Ministry of Environment, Science & technology)
- One Village One Product (Ministry of Agriculture & Cooperative)

कार्यान्वयनमा रहेका प्रस्तावनाहरु

यस आ.ब. २०६३/६४ मा निम्न बिषयक प्रस्तावना स्वीकृत भई कार्यक्रम कार्यान्वयन भइरहेको छ

- Exploration of Indigenous species of Flowering plants and management of major diseases of Marigold, Chrysanthemum and Gerbera.
- Assessment on current post harvest handling practices of cut flowers and technology generation.
- OVOP – Cimbidium Orchid on lalitpur district

पुष्पथोक बजार

बि.सं २०५५ साल भाद्र १ गते स्थापना गरिएको पुष्प थोक बजारलाई सुदृढ तथा व्यवस्थित रुपमा संचालन गर्न एक संचालक समिति गठन गरिएको छ । सो संचालक समितिले थोक बजारलाई व्यवस्थित रुपमा अगाडि बढाउने कार्यमा सक्दो सहयोग पुऱ्याएको छ । पुष्प थोक बजारबाट आ.ब.२०६३/६४ मा रु.७५,२२,२६३/- को आर्थिक कारोबार गर्न सफल भएको छ । पुष्प थोक बजार सफलताका साथ नवौं बर्षमा प्रवेश गर्न सफल भएको छ । पुष्प थोक बजार को बार्षिक कुल बिक्री आकडाँ र उपभोक्त प्रतिको रुचिलाई हेर्दा कट फ्लावरको बजार दिनानु दिन बढ्दो अवस्थामा रहेको छ ।

FAN ले यस अवधिमा उत्पादित बस्तुहरुको आन्तरिक बजार एवं बजार व्यवस्थापन फूल तथा बिरुवा प्रति जनअभिरुचि बढाउने कार्यक्रमहरु, पुष्प व्यवसायलाई अरु निर्यातमुखी सरल र सुबिधाजनक ढंगले अघि बढाउन तथा नेपाल सरकारले अंगाल्नु पर्ने रणनितिहरु बारेमा चेतना जगाउँदै पुष्प व्यवसायको उत्थान गर्नमा सक्रिय रह्यो । FAN को आफ्नो मर्यादा, उद्देश्य र आकांक्षालाई उच्च बनाउन र यस संस्था तथा पुष्प व्यवसायको अस्तित्व बोध गराउन यस कार्यकारिणी समिति प्रभावकारी ढंगबाट अघि बढ्यो । हरेक बर्षको बार्षिक साधारण सभा एवं सदस्यहरुबाट प्राप्त सुझाव र सल्लाहहरुलाई मार्ग दर्शकको रुपमा ग्रहण गरी सोही आधारमा नेपाली पुष्प व्यवसायलाई अघि बढाउनलाई प्रयासरत रह्यो । सिंगो पुष्प व्यवसायलाई समयानुकुल गति दिनु बिगत देखि वर्तमान सम्म चुनौतिपूर्ण कार्य रह्यो । भावी दिनहरु अझै चुनौती पूर्ण रहने छन् ।