

"Advancing Horticultural Research for Development"

Proceedings of the
7th National Horticulture Seminar

12-14 June 2011
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NEPAL AGRICULTURAL RESEARCH COUNCIL
Horticulture Research Division
Khumaltar, Lalitpur



Nepal Horticulture Society
Khumaltar, Lalitpur

Proceedings of the 7th National Horticulture Seminar (12-14 June 2011)

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Organized by

**Nepal Agricultural Research Council
Horticulture Research Division**

Khumaltar, Lalitpur

and

Nepal Horticulture Society

7th National Horticulture Seminar

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Preface

Horticultural crops in Nepal have great potential for creating opportunities for employment and income generation as well as improving the diets and nutritional well-being of farming households. Nepal's agro-ecological diversity enables a wide variety of fruits, vegetables, nuts, spices, flowers, plantation crops and medicinal plants to be grown.

In recent years, farmers' interest in horticultural crops has been increasing. Total area under horticultural crops particularly fruits and vegetables and their production is increasing each year. However, as these crops have become more popular, a number of production problems have begun to emerge. Nepal Agricultural Research Council (NARC) is giving due priority on horticultural research. Universities and other organizations particularly the donors and private organizations are also conducting some adaptive research in horticulture sector.

Technological advancements can not yield any tangible outputs until and unless these reach to ultimate users. In this regard, NARC has been organizing National Horticulture Seminar since 1996 in every two years interval. In this connection, the Seventh National Seminar was jointly organized by NARC and Nepal Horticulture Society (NHS) during 12-14 June, 2011 in Khumaltar, Lalitpur. The theme of the seminar was "Advancing Horticultural Research for Development". I am confident that the seminar could create environment bringing agriculture scientists, research managers, development workers, academicians and other stakeholders together in a common platform to share their views and ideas. I am glad to know that proceedings of the 7th National Horticulture Seminar will be published soon. I hope, the proceedings will benefit all concerned scientists, planners, academicians and ultimately the farmers at large. It is my great pleasure to appreciate the members of Organizing Committee and others who directly or indirectly worked very hard in organizing and successfully completing the seminar. Dr. Krishna P. Paudyal, Chief Horticulture Division and his team deserve my grateful thanks for their vital role and contribution in organizing the seminar and publishing this proceedings into this form.

Dr. Dil Bahadur Gurung
Executive Director
Nepal Agricultural Research Council

Foreword

Recently, horticulture has been appeared as the most potential and prominent share holder in Nepal's agricultural GDP spreading its hand in various national development activities. The climatic diversity of Nepal is the boon for agricultural development, particularly more so for diverse horticultural crops that require specific edaphic and ecological conditions for adaptation.

A wide array of horticultural crop species demands specific technology for production, commercialization, utilization, and value additions reflecting to cope with climate change, income generation and employment creation. In all these aspects, research undertakings should hold key role to precede horticultural crop production and promotion steps systematically on a scientific basis.

With the theme of "*Advancing Horticultural Research for Development*" the Seventh National Horticulture Seminar-2011 held from 12 to 14 June 2011 really gave a strong forum for presenting different technologies and research findings obtained from the field and lab-oriented studies along with lively discussion and interaction among researchers, planners, and development experts pertinent to horticulture development in Nepal. Based on adequate and appropriate research activities performed for several seasons, over 100 research scientists have presented their papers on fruits, vegetables, flowers, potatoes, spices and plantation crops including special papers on organic horticulture; these papers have enumerable values for accelerating horticultural crop production technologies, pre- and post-harvest care and management systems, including market promotion and value additions. However, the conclusions and recommendations based on the findings that are drawn in each of the papers presented must have field application; thus, farmers' adoption of the technologies generated as outcomes of research activities is very important to see the impact of research efforts.

Problem prioritization and research needs in horticultural crops must be worked out regularly over time to address current issues in horticultural development in this country, particularly in alleviating food and nutritional insecurity, promoting income generation, creating better employment generation, analyzing horti-tourism and improving better health through organic production. All concerned stakeholders, including horticultural professionals working from field level to policy level are requested to make best use of this proceeding for genuine applications of research results, conclusions and recommendations.

I take this opportunity to express sincere thanks and gratitude to all those who supported the Seventh National Horticulture Seminar – 2011 financially, mentally, and physically. The time devoted by the editorial committee members for bringing this proceeding in its present shape is worth mentioning.

Prof. Dr. Gyan K. Shrestha
President
Nepal Horticulture Society.
Horticulture

Acknowledgement

Seventh National Seminar on Horticulture -2011 was jointly organized by Horticulture Research Division (HRD) of Nepal Agricultural Research Council (NARC) and Nepal Horticulture Society (NHS) on 12-14 June, 2011 in Khumaltar, Lalitpur. Considering the importance of technological advancement for commercialization of horticulture sector the main theme of the seminar was selected "Advancing Horticultural Research for Development". The seminar was held for three days consisting of one inaugural session, six technical sessions, one special session on Organic Agriculture and finally the closing session. Various types of inputs for organic agriculture production were also exhibited by private entrepreneurs during the seminar. The seminar was inaugurated by Ex-Executive Director of NARC and Senior Horticulturist, Mr. Shiva Bahadur Nepali. The inauguration session was chaired by Mr. Dinesh Pariyar, Acting Executive Director of NARC.

The organizing committee extends its gratitude to Executive Director Mr. Dinesh Pariyar and Directors of NARC for their moral, financial and logistic support to make the seminar a successful event. We highly appreciate the cooperation and valuable suggestions received from senior horticulturists and NHS members and hope to receive the same type of cooperation in the future. The organizing committee acknowledges the financial support of Asian Food and Agriculture Cooperation Initiatives (AFACI), Micro-Enterprises Development Program Lalitpur (MEDEP), Centre for Environment and Agricultural Policy Research, Extension and Development (CEAPRED) and International Development Enterprises (IDE), Nepal for their financial contribution to organize the seminar and publication of this proceedings. On behalf of Organizing Committee, I highly appreciate the efforts done by editorial committee members for their excellent volunteer job to bring the proceedings in printable form.

The Organizing Committee sincerely thanks the paper contributors of organic session, other technical research papers, chairpersons and rapporteurs of different sessions. Last but not the least sincere thanks goes to all staff of Horticulture Research Division and NHS members for their contribution and support to make the seminar a great success.

Dr. Krishna P. Paudyal
Member Secretary
Organizing Committee