



Pakistan Society of Horticultural Sciences@
Institute of Horticultural Sciences
University of Agriculture, Faisalabad



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Declaration of the Cabinet 2015-16

Commencement of the winter semester brought the announcement of the call for applications for selection of new cabinet of PSHS for 2015-16. Eager horticulturists quickly responded to the call by submitting their applications along with curriculum vitae. Applicants were interviewed and after diligent selection, Cabinet of PSHS 2015-16 was declared.

PSHS general body and members congratulate all the new cabinet members for taking up the charge and wish them a very good luck!



Launch of PSHS Media

PSHS cabinet is quick to work. Soon after the announcement of the Cabinet 2015-2016, Society launched its own media group for coverage of events. Credits go to the devoted IT Secretary, Mubashar Zahid and Convener Press and Publication, Muhammad Tariq. Yeah, now the society will have its events and achievements clicked by professionals.

Let's Décor IHS!

Beginning of winter was marked with Rabi Kissan Mela and Annual Chrysanthemum & Autumn Flower Show in the University. Pakistan Society of Horticultural Sciences or more precisely pioneer and trend setter society of the university, stepped ahead to welcome the growers and other stakeholders to the Institute of Horticultural Sciences via colorful illustrations and innovative ideas for institute decoration. The idea of "Flowers make friends" was promoted by placement of chrysanthemum planters along the corridors. As PSHS believes in activity based learning, the concept of reduce, recycle and reuse waste was also endorsed in décor in order to create awareness about environment protection among the individuals. PSHS reduced the plastic waste of the institute and reused it for bottle gardening. Painted plastic bottles embellished with different houseplants were arranged in an artistic way to create bottle garden in the institute as well as a beautiful display of hanging baskets added color to the institute. The idea as well as the décor was appreciated well by everyone.



Welcome Ceremony

Pakistan Society of Horticultural Sciences arranged a welcome ceremony for all the new comers to Institute of Horticultural Sciences. November 4th, 2015 was tagged with goodwill and greeting all the young horticulturists to the Horticulture family. Old Senate Hall, the venue of the ceremony beautifully adorned by attractive colorful posters made by Irslan Ali depicted sparkle in Horticulture not mere a subject but an exceptional profession. Vibrant colors of the posters motivated the interest of the



new comers. Moreover, the ceremony was dominated by a welcome address from Prof. Dr. Muhammad Amjad (Director, Institute of Horticultural Sciences and Chairman, PSHS) followed by greetings from Dr. Iftikhar Ahmad (Coordinator PSHS). The event also comprised of a funny skit and a humorous debate. Skit which was more like a short play comprised of interesting personifications of fruits, flowers and vegetables. Audience enjoyed the play to its utmost. Irslan Ali, Samra Zaghuim, Asna Syed, Shahzina Shafi, Mehak Shehzad, Kinza Habib, Aqsa Zafar and Maliha Mukhtar participated in the play enthusiastically. However, comic debate by Zafar Iqbal made the audience laugh out their guts. At the end, all the participants were served with refreshments.

UAF Floriculture Team Participates in PHA, FSD, Autumn Flower Show

Young floriculturists don't miss any flower exhibition. Shortly after the ending of UAF Flower Show, Parks and Horticulture Authority, Faisalabad, impressed by Annual Chrysanthemum and Autumn Flower Show (Phool Mela) 2015 arranged a flower exhibition. Responding positively to the call of invitation from PHA, FSD, UAF Floriculture team under the leadership of Dr. Iftikhar Ahmad actively participated in their flower show and adorned PHA show full of artistic professional displays. Well, participation is an understatement because they not merely participated but also won twenty prizes in different categories of fresh and dry flower arrangement & special displays.



Annual Chrysanthemum and Autumn Flower Show (Phool Mela) 2015 December 10-12, 2015

Autumn has its own spectacular beauty of gold colored foliage, vibrant autumn flowers and the elegant mums. Institute of Horticultural Sciences celebrates this beauty every year by arranging flower show. This year Pakistan Society of Horticultural Sciences stepped ahead for organizing this annual grand event under the convenership of Dr. Iftikhar Ahmad (Asstt. Prof., Floriculture and Landscape/ Coordinator, PSHS) Worthy Vice Chancellor Prof. Dr. Iqrar Ahmad Khan inaugurated the show accompanied with Spanish Ambassador and delegates from European Union.



Dr. Iftikhar Ahmad, P.I./Convener of Annual Chrysanthemum and Autumn Flower Show (Phool Mela 2015) led them a visit of the entire show which ended with praise and compliments from all distinguished guests. With lots of new introductions including the various categories of cut flowers of roses and mums, foliage beauty and the commercial floriculture stalls nailed the event with great triumph.



Dr. Iftikhar Ahmad expressed his devotion for floriculture by keen planning of the event, which directly involved promotion of floriculture industry and creating awareness about environment among people. As it was the best opportunity for



hundreds of thousands of local citizens and flower lovers to relish the company of flowers as well as to share their experiences in flower production, handling and arrangement, so it was inevitable that people miss it. Students from different schools, colleges and universities, teachers, researchers, growers, amateurs, entrepreneurs and civil society, considering the importance of the show for interactive learning, participated enthusiastically from various cities of Punjab. Students of PMAS Arid Agriculture University Rawalpindi and Institute of Agri. Sciences, Punjab University, Lahore, especially visited the show and also participated in fresh flower arrangement. Zeal n zest of the participants with their hard work was undoubtedly conferred by distribution of trophies, shields, cash prizes and certificates among the winners of the contests in Prize Distribution Ceremony which was held on the last day of the show in Old Senate Hall, UAF. Prof. Dr. Iqrar Ahmad Khan, S.I. (Vice Chancellor), Prof. Dr. Muhammad Amjad (Director IHS), Prof. (Retd.) Dr. M. Aslam Khan and Mr. Raheel Sultan (Owner, Best Garden Nursery, FSD) were the Chief Guests at the prize distribution ceremony who distributed the prizes. PAEC, Divisional Public School, Laboratory

girls high school and Faisalabad Grammar Scool were the dominating winners in the category of schools. NIBGE, PHA and AARI were the government organizations that stood first, second and third, respectively. However, Sitara Chemical Industries, Ltd. And "Best Garden Nursery, FSD" were the undisputed winners among Private Industries and nurseries, respectively. In floral arrangements, Irslan Ali from IHS, UAF was distinctive winner and students of PMAS Arid Agriculture University, RWP, also won distinguished positions. Apart from shields and certificates, cash prizes were also distributed to the workers of NIBGE, PHA, AARI, NIAB, Sitara Chemical Industries, Best Garden Nursery and UAF.



Display of marvelous houseplants and autumn flowers, lavish exhibition of

chrysanthemums, artistic floral and foliage arrangements and beautiful landscape displays made their toil worthwhile. Painting and photography contests held at the same spot added up to the creative activities going there. A mini plant sale mela accompanied with sale of value added products including rosewater, essential oils of rose, jasmine and citrus by courtesy of Rose Project Area was also arranged by the society. A Lahore based gardening tool manufacturing company also participated in the show for first time

and displayed/marketed their innovative products. As the saying is: people, food and music go together so unavoidably the show encompassed Food Street endorsed with delicious food and the musical touch in the show provided a source of joy to the visitors. Summing up it all the Chrysanthemum and Autumn Flower Show (Phool Mela) 2015 marked a high tide for the Institute and the society. Team work pays off. Organizing and Management teams keep up the good work! Reverend organizer of the show acknowledged the

efforts of all team members at the end of show.



One Week Training Course on Mushroom Cultivation

Pakistan Society of Horticultural Sciences organized a demand led training course on mushroom cultivation. Thirty five participants participated in the course. Prof. Dr. Asif Ali, Dr. Muzammil Jahangir and Dr. M. Shahid delivered lectures as well as led the practical sessions. A visit of mushroom labs. at UAF was also conducted during which the participants were demonstrated the practices involved in mushroom cultivation and spawn production

technologies. A visit to Sindhu Mushroom farm in the vicinity of the city was also conducted. Participants enjoyed the course well with the interesting videos regarding mushroom cultivation shown during the lectures. Taqdees, Aqsa Zafar, Sahar Bari, M. Tariq, Mubashar Zahid, Mubashar, and Muhmmad Fiaz worked hard in organizing the training course under the supervision of president PSHS and coordinator PSHS. At the end of the course in the closing ceremony, certificates were distributed to the successful candidates by Dr. M. Amjad (Director, IHS), Dr. A.S. Khan (Convener, PSHS) and Dr. Iftikhar Ahmad (Coordinator, PSHS).

Training Workshop on Horticultural Nursery Production and Management

A training workshop on horticultural nursery production and management aimed at training of Baluchistan's Govt. officials in the field of nursery management was organized by Institute of Horticultural Sciences in collaboration with ORIC and generous funding by Baluchistan government. Director IHS, Prof. Dr. Muhammad Amjad, welcomed the participants who were 20 in number from Baluchistan Agriculture College, during the inaugural session of the workshop. The workshop which lasted 4 days was split into modules having lunch and tea breaks in between to fresh up the participants. Each module comprised of lecture and practical training session. The Fruit Plant Nursery section was effectively delivered by Prof. Dr. M. Jafar Jaskani, Dr. Saeed Ahmad, Dr. M. Usman and Dr. Summar Abbas Naqvi. A mini trip to PARS campus UAF led by Dr. Summar Abbas Naqvi regarding date palm nursery added up enthusiasm among the participants. Dr. Muzammil Jahangir delivered lecture and headed

practical regarding Vegetable nursery raising techniques. Ornamental Nursery section was very well delivered by transferring first-hand knowledge from the growers which was managed by conducting a trip to Pattoki Nurseries led by Dr. Iftikhar Ahmad. Pest management is an important issue in nursery management, which wasn't left undealt in the workshop. For appropriate pest management, Dr. Jam Nazir Ahmad and Dr. M. Ateeq conducted lectures and practicals in the last module accompanied by lectures of Dr. M. Jafar Jaskani and Dr. M. Usman regarding innovations in nursery production. Considering the importance of plant growth regulators in nursery establishment, Dr. Muhammad Usman led a practical on plant growth regulators and solutions preparation. The workshop was ensured to be a comprehensive one, a visit to plant tissue culture lab and model certified nursery system of UAF marked the successful end of the workshop. After getting the feedback questionnaire filled by the participants, certificates were distributed among the participants in the closing ceremony by the Chief Guest, Prof. Dr. M. Amjad (Director IHS).

Mehfil-e-Naat-e-Rasool (SAW)

Keeping in mind the sacred month of Rabi-ul Awal, Pakistan Society of Horticultural Sciences® organized Mehfil-e-Naat-Rasool (SAW) on 21st December, 2015 (9th Rabi-ul-Awal) at Farmer's Syndicate Hall. Prof. Dr. Tahir Siddique (Deputy Senior Tutor and Foreign Student Advisor), Miss Samreen Rasool (Asstt. Prof. Faisalabad University) and Dr. Iftikhar Ahmad (Cordinator, PSHS) were the chief guests. Ms. Saba Sattar (Secretary Qiraat and Naat, PSHS) was the core person in organizing the event, while Ghulam Ayesha and Samra Zaghuim were the comperes of the day. After recitation of Holy Verses of Quran, a Humd followed by series of

Naats were recited by Saba Sattar, Shahzina Shafi, Samra Zaighum, Naima Razzaq, Mehak Shehzad and Munazza Hafeez. A speech on moral and ethical values, with reference to Prophet (PBUH) the ultimate role model in all spheres of life, was delivered by Ms. Laiba Gohar. Chief guests also contributed in the event. Dr. Tahir Siddiqi delivered a short lecture on morality and congratulated the society for conducting the sacred event. Ms. Samreen also contributed and recited a Naat as well as terminated the event by Prayers for the wellbeing of people, country and the wider world. In the end, guests were presented flowers and confectioneries were also distributed among the devotees of Holy Prophet (PBUH) present there.

Internship Orientation Workshop

Undergraduate students about to opt for internship disciplines and their relevant stations heaved a sigh putting aside all the confusions, they made up their minds with crystal clear goals. Credits go to PSHS for organizing the internship orientation workshop for them in Landscape Studio on December 22, 2015. Coordinator PSHS and Member of Internship Program Supervisory Committee, Dr. Iftikhar Ahmad led the informative and interactive session about the upcoming Internship Program for the partial fulfillment of the B.Sc. (Hons.) degree. The diversely experienced speaker not only conveyed the information about internship but also shared the experiences of former internship programs in order to avoid loop holes in the future. Students were also informed about the expectations of the internship committee and what to do and what not during their internship. Students took great interest in the session and were glad to hear that society is so concerned about the young horticulturists. At the end of the session clearer visions of the students rendered the Internship Orientation fruitful. Loads of good wishes for the young internees!



Salient Research Projects Won by Faculty IHS

- Establishing production protocols for potential bulbous crops for cut flowers by Higher Education Commission worth 7.4 million rupees.
- Meadow Orcharding system in Guava (*Psidium guajava* L.) funded by Endowment Fund Secretariat, UAF, worth 2.1 million rupees.
- Canopy management and multiplication of promising ber cultivar funded by Agriculture Innovation Programme. U.C., Davis, worth \$19,000.
- Postharvest storage life and quality management of Litchi funded by HEC worth 5.89 million rupees.
- Mango ripening in the postgenomic era funded by LUMS.
- Agricultural innovation program (AIP) for Pakistan aimed to provide technical assistance to establish postharvest lab & capacity building in Postharvest management at Agricultural training institute, Sarkand and skill development of field assistants for a sustainable postharvest system in Sindh, Pakistan generously funded by University of California worth 2 million rupees.

New Faces in the Institute

Welcome to Dr. M. Awais Ghani in the institute and congrats for being appointed as Assistant Prof. (TTS) in Olericulture.

Congratulations to Mr. Faisal Shehzad [Silver Medalist in



B.Sc. (Hons.) from IHS, UAF] for being appointed as lecturer in the Institute of Horticultural Sciences. He is teaching as well as continuing his M.Sc. (Hons.) and has also won Faculty Development Scholarship to continue his Ph.D. studies from USA.

Break Time!

Everyone needs a break, even the teachers who work tirelessly in planning, organizing, teaching of the courses and research projects. To break the monotonous tedious routine, all the teachers together went on a recreational trip to Changa Manga. Shots while playing cricket and playing cards set up a zestful atmosphere. Fun was doubled when they cooked for themselves by arranging a Barbeque. The trip was a dose of entertainment for the teachers to combat their tough working routines with a renewed vigor. Moreover, this also helped to develop good social and work relations. The day ended with joy and all smiles.



Faculty Dinner, IHS

Faculty of IHS gathered at one of the renowned restaurants in town, Silver Spoon, to enjoy dining and relish togetherness. Prof. Dr. Mumtaz Khan also joined the buzzy gathering, specially from Oman. Clatter of the tea cups and mood lightening chat of the colleagues after yummy dinner lightened everyone's mood from the buzzy work routines.

You Make Us Proud

Cheers to all horticulturists who have been selected Agriculture Research Officers (AROs) and good wishes for them. You all make the Institute proud.

Hafsa Zubair, Ghulam Ayesha, Fraz Davis, Nabeela Bashir, Umar Aziz and Bilal Qadri.

Congrats to Mr. M. Abdul Salam Khan, Senior Vice President, PSHS and Ph.D. Scholar in floriculture on being selected as instructor in Punjab Directorate of Floriculture (T&R).

Undergraduate and Postgraduate Study Trips During Winter Semester 2015-2016



Postgraduate floriculture students led by Mr. Mohsin Bashir (Lecturer IHS) visited **Best Garden Nursery Farm** located in Faisalabad. The visit was aimed for making the young floriculturists identify diverse variety of plants. Being a floriculturist it is a pre-requisite to know about different plants, their growth patterns and their behaviors in different environments. This was fulfilled by the nursery visit. Students returned with their minds filled with scenic views of exuberant plants including the most fascinating mechanically engineered ones and the unique bonsais.

Sun shone like a golden coin peeping out from the clouds, cool breeze blew and all the shiny faces settled in the bus to set off for a joyful long journey to Rawalpindi and Islamabad. Yes! Another trip of postgraduate floriculturists. Floriculturists seem lucky enough to enjoy another one. This trip was headed by Dr. Iftikhar Ahmad (Asstt. Prof. Floriculture and landscape/Coordinator PSHS). First stop was **National Cleaner Production Centre Foundation** followed by **Morghah Biodiversity Park** where students were given awareness about recycling and strategies for protecting and conserving natural habitats. Next along with gaining first-hand knowledge about golf courses by the experts, students also enjoyed the extravagance of lush green **Garden City Golf and Country Club, Bahria Town, Rawalpindi**. An informative lecture on account of environmental issues and their possible solutions at **Environmental Protection Agency, Islamabad**, or more precisely Central Laboratory for Environment Analysis and Networking ended the trip with students exhausted yet enlightened. The full day exhaustive program did not let students free for

lunch even and after ending up study, they rushed to Food Street, Rawalpindi and after dining came back.

Voices echo there, the place is Soon Valley, Khushab. Dr. Ahmad Sattar Khan, Convener PSHS headed a trip of undergraduate horticulturists to **Fruit Research Station** in the valley where they were demonstrated different fruits growing there along with their production technologies including peaches, apricots, plums, grapes, olives, almonds and many more. To visit such a place in addition to entertainment with the value added products of the local fruits there like olive pickle and olive juice was a delight in itself.



Dr. Raheel Anwar (Asstt. Prof., IHS) led a trip of the undergrad horticulturists to **"Sidhar Mandi"** (Local Fruit & Vegetable Market of FSD) where the students worked in groups and interviewed the wholesalers and retailers about harvest and handling of fruits and vegetables locally practiced. The trip was fruitful as the students got direct knowledge about the harvest and handling of horticultural crops.

Flower land, **Pattoki**, a lovely place worth seeing was visited by undergrad horticulturists steered by Dr. Iftikhar Ahmad (Asstt. Prof. Floriculture and Landscape/Coordinator, PSHS). Students were led to different flower farms and nurseries where they were instructed about production technologies for various flowers including roses, gladioli, mums, gerberas and tuberose being employed at commercial level. Excitement of young undergrads knew no bounds to see abundant of flowers around them

stretching along the horizon. During the same trip they also visited **Flower Markets in Lahore** where they got info. About flower handling, marketing and arrangements. The local flower shops as well as the shops having imported flowers were equally amazing. However, a comparison of practices done at both type of shops was quite clear and distinctive. At the end, the students visited **Chrysanthemum Show at Racecourse Park, Lhr** organized by PHA Lahore and then whole class of 93 enjoyed a delicious dinner together at Food Street, Lahore. Junior horticulturists enjoyed the trip to its full.

Postgraduate pomologists were led a trip to **Ayub Agriculture Research Station** by Dr. Ahmad Sattar Khan (Associate Prof./Convener, PSHS) where the students were demonstrated different specialized labs regarding Advances in Fruit Crops. Terse but really informative trip was enthusiastically appreciated by the pomology students.

Training on Capacity Building of Professionals from Baluchistan University on Tissue Culture

Institute of Horticultural Sciences, ORIC and Baluchistan government jointly arranged a training on capacity building of professionals from Baluchistan on Tissue Culture. A sum of 19 professors and researchers were warmly greeted by the Institute at the inaugural session of the training. The training was aimed to provide basic and advanced knowledge about commercial application of micro propagation so the professionals could get a better understanding of the subject and encounter the problems rising mainly due to climate changes particularly droughts. In adverse scenario of food shortage, tissue culture is a good rescue. Prof. Dr. Muhammad Jafar Jaskani, Dr. Muhammad Usman (Assistant Prof.) and Dr. Fatima Usman (Assistant Prof.) from IHS, while Dr. Bushra Sadia (Assoc. Prof.) from

CABB led the lectures and practicals during the training. Enthusiasm of the participants during the workshop which lasted eleven days (February 1, 2016 to February 11, 2016) was evident from their active participation in practical sessions to

set a clearer vision of basic as well as advanced techniques of tissue culture. At the end in a closing ceremony, certificates were awarded to the participants by honorable Vice Chancellor, Prof. Dr. Iqar Ahmad Khan (S.I.). Additional Secretary of

the Baluchistan government also attended the closing ceremony of the training and greatly appreciated the efforts of the university, IHS and ORIC for the training.

Cut Foliage: A Neglected but Potential Floriculture Enterprise

Iftikhar Ahmad¹, Atyab Amjad², Munazza Hafeez¹ and M. Qasim¹

¹Institute of Horticultural Sciences, University of Agriculture, Faisalabad

²Floriculture Training Institute, Orchard Scheme, Murree Road, Islamabad

Pakistan, being an agro based economy, has best agro ecological zones for production of floriculture crops in different regions at different times of the year or year round. However, due to lack of infrastructure (greenhouse technology, reefer vans, etc.), and modern innovative techniques of quality ornamentals, so far floriculture has not been yet explored to its potential. Currently, some floral crops are being produced but they do not meet international standards and most of the produce is consumed in local markets. Moreover, Pakistan's floriculture production is dominated by nursery production of ornamentals and cut flower production of limited number of species. So far, no efforts have been put forth to grow cut foliage crops commercially in the country and florists have to use either parthenium weed which is poisonous, containing allergens and is wildly grown, available at no cost or a few locally available shrub branches. There is also no information about the production and postharvest handling of any cut foliage crop being grown locally for longest vase life.

The floral crops are highly delicate and perishable and need special care from harvest till marketing to end user. Blast chillers for field heat removal after harvest and reefer containers for shipping/transportation of cut foliage crops are of esteem importance. But our growers are lacking in these vital facilities due to their high initial and running cost.

In this scenario, to boost up local floriculture industry and to provide better options to florists and event managers for making arrangements, cut foliage crops are an important intervention at commercial scale. In global markets only in European Union floriculture markets, cut foliage crops had a value of 33 million pounds during 2012 which were imported only in southern Europe. Moreover, 81% of total cut foliage production in world is imported by Netherlands. Most of the cut foliage production is carried out in developing countries and exported to Europe. During 2012, main exporters of cut foliage crops to Europe from developing countries were Kenya, Ecuador, Ethiopia, Columbia, Costa Rica and Uganda having major volume of export upto 73%. (CBITradewatch for Cut Flowers and Foliage, 2012)

For cut foliage production fully automatic greenhouses are not required. Simple tunnel structures covered by green net during summer and polythene in winter serve the purpose. In Punjab region, climate is suitable for cut foliage production at comparatively low cost of production. In upper Punjab and KPK

heavy rainfall during summer also provide high humidity required for the production of some tropical foliage crops. Moreover Karachi region is also suitable for year round cut foliage production. Due to hardiness and longer vase life, less postharvest treatments are required for handling cut foliage crops.

Many ornamental plants locally available in Pakistan such as Dracaena, Murva, Thuja Orientalis, Syngonium, Philodendron, Monstera, Diffenbachia, Cyperus, Asparagus, Alpinium, Aspidistra, Croton, Schefflera, Caladium, Ficus, etc. have great potential to be used as cut foliage for local use and export. These crops tend to have greater longevity in the vases that is why they are increasingly being used by florists internationally and locally as well at a limited scale. Different sizes, shapes and forms of foliage add up to the variety in floral arrangements. These attributes particularly motivate florists' to demand for these cut foliage crops.



For fulfilling the demand of local market and export, cut foliage crops offer better and cheaper option with less requirements for good quality production and longer vase life than cut flowers. Important requirements in accessing this market include regular supply, good quality along with required specifications and sale prices of different foliage crops. Potential cut foliage crops for export are Anthurium, Aralia, Asparagus, Cycas revoluta, Cyperus, Dracaena, Eucalyptus, Hedera, Monstera, Philodendron, Pittosporum, Ruscus, etc. Select such cut foliage crops which are capable of rapid regeneration after harvest and are resistant against insect pest and diseases. Due to hardiness of cut foliage crops, they also have less postharvest losses during transportation as compared to cut foliage crops. These also serve as source of daily income by year round production. Limitation of cut foliage

products at commercial scale will not only meet the requirements of local floriculture market, but will also be a good addition for floriculture business to chance growers share and profitability. Therefore, it is the time to optimize production and postharvest handling protocols for these potential crops in order to flourish cut

foliage production in the country. At University of Agriculture, Faisalabad, experiments are being conducted for developing protocols for quality production of selected cut foliage crops in order to promote cut foliage production in the country for local consumption and export.

Warm Weather Strains of Button Mushroom (*Agaricus bitorquis*)

Prof. Dr. Muhammad Asif Ali, Muhammad Rizwan Liaqat & Muhammad Uzair Asif

In Pakistan, commercial cultivation of *Agaricus* and *Pleurotus* spp., is existent on a small scale with a few private farms. Button Mushroom, *Agaricus bisporus* has become the most popular mushroom produced worldwide today. However, the fruiting ability *A. bisporus* at a temperature of 16-19°C limits its growth in winter in most part of Pakistan which hinders regular supply to the market. Therefore, due to seasonal production and low volume of produce, consumers have to rely on imported canned button mushroom. Other wild species of *Agaricus* are found both in temperate regions and in the tropics. *Agaricus bitorquis* and related species, which can tolerate a higher temperature can be cultivated on similar substrate to those used in the cultivation of *A. bisporus*. Therefore *Agaricus* species have potential types as cultivable and can be a source of characters of agronomic value.

Agaricus bitorquis also known as the "hot mushroom", offers an acceptable alternative of low temperature button mushroom, *A. bisporus*. Investigations at Mushroom Laboratory, Institute of Horticultural Sciences, University of Agriculture, Faisalabad have shown that two tropical isolates of *Agaricus* (W20 and AS65), with characteristics similar to *A. bitorquis*, were distinct and have growth optima at a much higher temperature (27-30°C) than temperate strains. These two isolates can produce much higher yields than the existing commercial strains of *A. bitorquis*. These strains might be cultivated in during summer months in the plains, low hilly and coastal areas without any major investment in environmental control. By choosing the low temperature button mushroom (*A. bisporus*) during winter and hot weather button mushroom (*A. bitorquis*) during summer months in the plains, cost of production can be minimized. This strategy will also helps to regularize the supply of mushrooms to the markets round the year. The seasonal supply of mushrooms to the markets is one of the major drawbacks in mushroom farming in Pakistan.

Strain W20 was introduced first time in Pakistan in 1998. Whereas, strain AS65 is a wild isolate from Faisalabad, Pakistan. Spawn of both these strains was prepared on sorghum grains. During incubation at 27-30°C, strain W20 showed very light mycelial growth, due to which spawn was usually attacked by competitive fungi and bacteria. However, this problem didn't appear when spawn was incubated at 25°C. Strain AS65 showed very thick mycelial strands, which was less susceptible to fungal and bacterial attack.

Both the strains of this species have been found genetically incompatible with European commercial strains of *A. bitorquis*. These have many of favorable characteristics and few of its advantages. The harvested mushrooms are intensely white in

color with caps that are generally smooth and silky and they are resistant to bruising, less likely to become brown, and have a pleasing flavor and a good storage qualities.

An air temperature of 27°-28°C has been found ideal during spawn running to provide a compost temperature 30°-32°C, although temperature as high as 35°C can be tolerated for short periods. Normally compost colonization takes 14-16 days. Mycelial growth in strain W20 is light in color as compared to strain AS65. This strain produces thick strands of mycelia which are less susceptible to mold attack. On the other hand strain W20 initiate at the compost/casing interface but this can be partly overcome by covering the beds with damp paper for the first week after casing. These strains initiate and produces normal shaped mushrooms at carbon dioxide levels between 1500-2000 ppm, the growing environment requires fewer fresh air changes and consequently the energy necessary to maintain growing temperatures of 28°C is less than would be expected. An air temperature between 27°-28°C with a relative humidity between 85-90% produces 5 distinct



One day International Seminar on Future Perspectives of Potato Biodiversity and Food Security

Keeping in view the global food security issues, a seminar on potato biodiversity and food security was organized at IHS which started with the name of Allah. Prof. Dr. Muhammad Amjad greeted the audience in his welcome address, while Prof. Dr. Iqar Ahmad Khan (S.I.) (Vice Chancellor, UAF) inaugurated the seminar with his inaugural address. Afterwards, international speakers Ms. Renate Pors (Counsellor/ Deputy Head of mission) from the Embassy of the Kingdom of the Netherlands, Mr. Romoke Wustman (Director/Owner-Wustman Potato Consultancy) from Wageningen University & Research centre, Netherland, and Dr. Khalid Naveed from Dept. of Plant pathology, UAF and Dr. Syed Ejaz ul Hassan (Director/Potato Research Institute, Sahiwal) delivered their lectures. Like the speakers, the audience was also diverse from around the country which included students, researchers, growers and stakeholders, which collectively gave a sum of 100 participants who attended the seminar with great enthusiasm. At the end, certificates and refreshments were served.

ANTHRACNOSE OF GUAVA (A threat for guava growers)

Dr. Saeed Ahmad

Institute of Horticultural Sciences, UAF, Pakistan.

Guava is one among the most favorite fruits of Pakistan. It is being cultivated in Indo-Pak since 17th century and is grown in almost all regions of the world. It is excessively being grown in Bahawalpur, Multan, Sargodha, Sharqpur, Sheikhpura, Faisalabad, Lahore. Karachi and Kherpur districts of Pakistan. Guava is also known as "Apple of Poor" because nutritionally it is a cheap and major source of vitamin C. Its vitamin C contents ranges from 91 to 270 mg/100g of edible pulp of the fruit, while it ranges from 30 to 60 mg/100g in citrus.

Normally guava bears fruit twice a year, a summer crop (July-August) and a winter crop (Jan-Feb). Summer crop is very susceptible to fruit fly, which reduces its attraction towards farmers. They give preference to winter crop. However, considerable benefit can be taken from summer crop, if managed carefully. An optimum pesticide spray can prevent fruit fly damage.

Since last few years, in few regions of Punjab province especially at Faisalabad (Postgraduate Agriculture Research Station, University of Agriculture), anthracnose (a mango disease) is observed in guava. The attacks of this disease completely destroy the quality of fruit and heavy losses occur. It appears to be a matter of attention so this article is presented to give detailed information about anthracnose and its possible control.

Causes and Symptoms:

It is a fungal disease and its causal organism is *Colletotrichum gloeosporioides*. High humidity and rainfall provide favorable conditions for its incidence. Its symptoms appear on leaves, twigs and branches but this disease severely affects the guava fruits. Oval shape brown to black spots of different sizes appears on fruit surface which contain brown powders (fungus spores). Mostly, these spots start from the upper portion of the fruit, then extends and cover the whole fruit. Humid weather like rainy season encourages its attack and this disease prevails in whole orchard, within few days. Whole fruit becomes brownish and give rotten appearance. With the passage of time, disease attack and fruit drop increases. Fruit becomes non marketable and farmer has to bear heavy losses. Black spots also become visible on branches. This disease can be transmitted from one plant to another in favorable conditions and whole plant dries out gradually in 2-3 years. This problem can become a source of economical loss to farmers, if not addressed immediately.

Control/remedy:

It is necessary to collect all disease affected fruits and dump it off in pits. Also spray the recommended dose of pesticides, i.e. Topsin-M @ 1.5 g/L of water or Score @ 2g/L of water. Repeat this practice after fortnight. It is advisable not to use fruit in these days but to dump it off.

Besides it, bordeaux mixture, which is a combination of calcium

carbonate, calcium sulfate and water, in the ratio of 50: 3: 3, can be used with irrigation. This disease is more prevalent in weak plants so it can be prevented by using recommended doses of fertilizers. If this disease appears in orchards, farmer should spray above mentioned pesticides, thrice in next year as a preventive measure. By adopting above mentioned measures farmers can save their plants from this disease but also can get maximum economic returns.



Different stages of disease development

Training of Trainer's Program on "Postharvest Management of Fruits and Vegetables"

A training programme under the Agriculture Innovation Programme was organized at IHS, in which 11 participants participated from Agricultural Training Institute, Sarkand, Sindh and Extension department of Naushero Feroz. The Training programme started with the recitation of Holy Quran followed by the introduction of the programme by Dr. Raheel Anwar. Mr. Abdul Raheem Khan highlighted its objectives and Prof. Dr. M. Amjad (Director IHS) remarked greetings to all the participants. Dr. Amanullah Malik, Dr. Ahmad Sattar Khan, Dr. M. Usman, Prof. Dr. Asif Ali, Dr. M. Muzammil Jahangir, Dr. Rashad Waseem Khan, Dr. Iftikhar Ahmad, Dr. Muhammad Amin, Mr. Muhammad Fiaz, Mr. Allah Rakha Keerio, Mr. Hamid Solangi, Mr. M. Shakeel Hanif, Mr. Muhammad Javed, Mr. Fakhar Zaman, Mr. Abdul Raheem Khan, Mr. Zahid Ghouri and Mr. Rafaqat Ali were the speakers/instructors.

The training programme marked a high tide as it comprised of so much interesting activities/tasks which included distribution of ber plants from AIP project, visit to Agri. Expo. At Expo. Centre, UAF, visit of postharvest lab (AIP Project), Citrus research Institute, Sargodha, In-service ATI (Sargodha), Zahid Kinnow processing facilities at Bhalwal, visit of NIFSAT laboratories (UAF), Postharvest Research Centre (AARI, FSD) and Zahid Guava farms at Jhang Road, Faisalabad. The training as a whole was a complete package in itself which encountered all the possible aspects of Postharvest management of fruits and vegetables. At the end of the programme, certificates and souvenirs were distributed.

Welcome Back

- Prof. Dr. A.U. Malik is back after completing his postdoc at UC, Davis, USA
- Dr. Adnan Younis, Assistant Professor, is back after completing his postdoc at Kyungpook National Univ., Korea

One Week Training Course on Tunnel Farming



PSHS organized a one week training course on tunnel farming. Students as well as stakeholders keenly participated in the very informative demand led course based on techniques of off season vegetable production in the tunnels for increasing yield and profitability. The course was well organized with lectures and practical training sessions. Dr. Rashad Waseem Khan, Dr. M. Irfan Ashraf, Dr. Shoaib ur Rehman, Dr. Muzammil Jahangir, Dr. Awaiz Ghani and Dr. Sajid Aleem delivered their lectures as well as lead the practicals. Growers and stakeholders participated from around the country particularly Samundri, Layyah, Karachi and Shakargarh making a total of 120 participants including the students & faculty from different departments of the university.

In the inaugural ceremony, all participants were welcomed and introduced about the course by Prof. Dr. Amanullah Malik and Dr. Iftikhar Ahmad (Asst. Prof. and Coordinator PSHS). A short trip within the university was arranged as well as a test was conducted at the end of the course. Participants successful in the test were awarded with certificates by Prof. Dr. M. Amjad Aulakh, Prof. Dr. Ahmad Sattar Khan and Dr. Iftikhar Ahmad, in the closing ceremony, which was scheduled on the last day of the course. A Hi-tea was also cordially served. All the faculty members appreciated it and credit goes to PSHS team especially Mubashir Zahid, M. Fiaz, M. Tariq, Aqsa Zafar, Sahar Bari, Taqdees Ali and Asna Syed who worked dedicatedly to make the things work.



2nd International Conference on Horticultural Sciences at Inst. of Hort. Sciences, UAF



Finally the day of deliverance arrived. The long awaited 2nd International Conference on Horticultural Sciences was on the doorstep. Organizing and management teams, despite their exhaustion of last few weeks were still working to make the both ends meet. Preparations were complete and repeatedly scrutinized by the director IHS and the hardworking organizing team. On a sunny morn on February 18th, all the devoted members of PSHS were settling their hair down to serve their duties at the inaugural session, which was destined at the grand venue of Iqbal Auditorium. Reception and protocol team warmly greeted the distinguished guests and participants, who were given complementary bags of the conference which contained necessary stationary, name tags, programme and abstract book of the 2nd ICHS and were directed to inauguration hall of Iqbal Auditorium.

There in Iqbal Auditorium, inauguration ceremony of ICHS began with the recitation of Holy Quran by Hafiz Kashif followed by recitation of Naat by Shahzaib. Director IHS, Dr. M. Amjad delivered the welcome address followed by keynote address on horticultural industry in Pakistan by Dr. Muhammad Saeed. Audience was enthralled at the inaugural address by honorable Vice Chancellor Dr. Iqrar Ahmad Khan (S.I.) who declared the begun of the conference. Dr. Abdus Salam Khan, Dean, Faculty of Agriculture, thanked everybody particularly the organizing committee and the audience was directed to the main library lawn for the group photo of 2nd ICHS 2016, which was clicked by official photographers of the university and PSHS.

After a refreshing hi-tea, the poster and oral presentations began. A total of 87 oral presentations were given by the participants from around the globe on the first and second day of the conference. Each day oral sessions were broken for refreshments at specific intervals so that the participants didn't yawn out of boredom. Out of these oral presentations which were simultaneously being presented at three venues (Landscape Studio, Distance Learning Centre 2 and Distance Learning Centre 3), there were five

presentations from international delegates from India, South Korea and United States, including three online presentations from the USA.

During the conference, posters were also displayed at the postharvest research and training centre which were then evaluated by judgement team. First day of the conference was really a hectic one both for the participants who travelled hundreds of miles to attend the conference and the organizing and management teams who were working tirelessly to make 2nd ICHS a success story. Despite the hectic schedule, PSHS organized a cultural show to entertain the guests on the clear night of February 18, 2016.

The function began with recitation of Holy Quran and Naat. A welcome address by Prof. Dr. Amanullah Malik greeted everyone. He also discussed proposal to take on PSHS to National level. Afterwards, a series of versatile performances were started including welcome performance, traditional songs, bhangra performance and humorous poetry. Audience was amused by the show which ended with a delicious dinner.

The next day was a red letter day because after the presentation sessions closing ceremony of the conference was scheduled.

Closing ceremony began inevitably by recitation of the Holy Quran. In an informative address by Dr. A. U. Malik, conference recommendations were also presented. PSHS was also launched at National Level in the ceremony in which all the representatives of the universities from all over Pakistan and Horticultural Research Institute led by Dr. M. Amjad (Director IHS) solemnly presented the banner of 3rd ICHS to Prof. Dr. Naeem Akhtar Abbasi (Chairman, Dept. of Horticulture, PMAS Arid Agri. Univ., Rawalpindi) with the declaration of 3rd ICHS to be held in PMAS Arid Agri. Uni. Rawalpindi in April 2017.

Poster winners were awarded with certificates and complementary PSHS gift hampers by Dr. M. Amjad and Prof. Dr. M. Saeed. Dr. M. Saeed delivered his concluding address followed by vote of thanks by Dr. M. Amjad in which he thanked everyone who helped in successful organization of the conference. He particularly thanked Prof. Dr. M. Jafar Jaskani, Dr. Iftikhar Ahmad and Dr. Raheel Anwar for their efforts to make this conference a success story!

After the Hi-tea, certificates were distributed among all participants, presenters and organizers.

UAF Spring Flower Show 2016

On the eve of 23rd Convocation, PSHS under the umbrella of IHS, stepped forward to cordially greet the distinguished guests, Mr. Malik Muhammad Rafique Rajwana (Governor Punjab) the Chief Guest, and Prof. Dr. Iqar Ahmad Khan (S.I.) (Vice Chancellor, UAF), Guest of Honors and the enthusiastic graduates by arranging Annual Spring Flower Show 2016. Convocation Venue, University D-Ground, was purposely encompassed by the flower show with keen planning of IHS management team. Beautiful displays of flowers and the artistically adorned site by the flower show management team under the leadership of Coordinator Flower show, Dr. Iftikhar Ahmad, doubled the zeal and zest of the brightly dressed graduates. Before the convocation, the grand flower show was inaugurated by the honorable Chancellor (Governor Punjab) and vice chancellor (Prof. Dr. Iqar Ahmad Khan (S.I.)). Bouquets prepared with a diverse variety of UAF grown flowers were presented to the chief guests and were led a visit of the flower show. The visit ended with kind words and great appreciation by the distinguished guests. The guests particularly liked and appreciated the new introductions in this flower show especially lawns competition and photo booth for graduating students to make their convocation photos memorable. Graduates excitedly clicked the photos of their big day in the photo booth made with amazing combination of flowers and cut foliage. Rangolis were also made by the students which added more color to the venue. Private and government organizations, landscape companies,

participated in the flower show. Efforts of all were acknowledged and shields and trophies were distributed among the winners as well as the cash prizes were distributed among the hard working laborers in the prize distribution ceremony which was scheduled on March 18, 2016 at New Senate Hall.

PHA Jashn-e-Baharan Festival 2016

The Success story isn't over yet, shortly after the UAF flower show, Parks and Horticulture Authority, Faisalabad, also organized a flower show and invited UAF to participate in the show. UAF floriculture team steered by Dr. Iftikhar Ahmad not only participated in the show but also won over 20 prizes in different categories and proved that talent finds its way. Theme garden displays by UAF, viz. Butterfly garden, biodiversity garden, Water resort, Waterfall and Welcome Display won 3rd, 2nd, 1st, 1st and 3rd positions, respectively. Moreover, floral wreath, Colors of life arrangement, Peace arrangement and Basket arrangement all won 3rd position individually. Kinza Habib, Irslan Ali and Fraz Davis won 1st, 2nd and 3rd positions in Basket arrangement of flowers, 2nd position in theme 'hope' and 'dream' flower arrangement, 1st and 2nd in floral wreath, 1st, 2nd and 3rd in 'peace' with single flower arrangement and 1st, 2nd and 3rd position in colors of life. Kainat Ilyas and Saira Mushtaq also won two 1st positions, one in theme 'hope' and second in special display.

It feels so good when our university students or more precisely students of IHS are repeatedly called on the stage of any forum, to receive the prizes of their efforts and the credit goes to Students-Teachers Coordination and their endeavors as a team. This surely makes us proud being students of IHS, UAF. Wishing good luck to the talented UAF floriculture team and hoping for countless novel things in future, PSHS and faculty of the Institute would remark UAF floriculture team you make us proud!



PSHS Glimpses 2015-16

News Alert !

PSHS has broadened its horizons by going nationwide. The society has been upgraded to National Level. A person with a degree in Horticultural Sciences is eligible to hold membership of the society. Amateurs, students enrolled in Horticultural degree programs and entrepreneurs involved Hort. businesses can also become associate or corporate members.

Your suggestions are welcome about PSHS. Please contact Dr. Iftikhar Ahmad at 041-9201086 or 0334-7416664 for your precious feedback.



Attention Horticulturists!

Floral Feast will be on May 07, 2016 at Hort. Technology Park, UAF

Queries/Comments

Dr. Iftikhar Ahmad (Coordinator PSHS)
Institute of Horticultural Sciences
University of Agriculture Faisalabad

Off. +92 (41) 9201086
Mob. +92 (334) 741 6664
E-mail: iahmad@uaf.edu.pk