

RESUME

MUHAMMAD USMAN RANA

Ph.D. Horticulture (Plastid Biotechnology)

Post-Docs (Molecular Physiology)

Commonwealth & HEC Post-Doc Fellow (JHI, UK)

Professor



PERSONEL INFORMATION

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AD Sci. Index ID 441501

HEC approved PhD supervisor ID 44520



ACADEMIC QUALIFICATIONS

Degree/Class	Year	University/Board	Major Subjects
Post-Docs	2012-13	The James Hutton Institute,	Plant Molecular Physiology
<i>HEC Fellowship</i>		Dundee, Scotland-UK	
<i>Commonwealth</i>	2010-11	Scottish Crop Research Institute,	Plant Molecular Physiology
<i>Fellowship</i>		Dundee, Scotland-UK	
Ph.D.	2007	Uni. of Agriculture, Faisalabad	Plant Biotechnology (Plastid transgenics)
M.Sc. (Hons.)	1998	-do-	Plant Tissue Culture
Agri.			
B.Sc. (Hons.) Agri.	1996	-do-	Horticulture

** First Class throughout the Academic Career*

EMPLOYMENT PROFILE

2024 to date Professor (BPS), Institute of Horticultural Sciences (IHS), Uni. of Agriculture, Faisalabad (UAF).

2019 to 2024 Tenured Associate Professor, IHS, UAF.

2014 to 2019 Tenured Assistant Professor, IHS, UAF.

2008 to 2014 Assistant Professor (TTS), IHS, UAF.

2007 to 2008 Assistant Professor (BPS), IHS, UAF.

2003-2007 Lecturer (BPS), IHS, UAF.

Impact Factor:	65.862
Competitive Research Funding Earned:	109.58 million

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		2023-2028	GSCRI, Guangxi, China
		2024-2029	ZFRI, Zhenzhou, China
		2024-2029	CATAS, China
<i>National</i>		2017-2020	DM Agri. Farm Hyderabad, Pakistan
		2012-2015	MAK Green World Nursery, Sadiqabad, Pakistan
<i>Others</i>	HEC Approved Supervisor (2007)		
	Productive Scientist PCST, Islamabad (2007)		

RESEARCH INTERESTS

To exploit plant molecular biology and chloroplast transformation tools for crop improvement

- Gene expression profiling and development of transgenic crops resistant to different biotic and abiotic stresses
- Genetic characterization of existing gene pool of horticultural crops particularly Guava and Grapefruit
- Using plant breeding and tissue culture techniques for crop improvement
- Establish germplasm units of major native and exotic fruit crops

SALIENT R&D ACHIEVEMENTS

- Established nursery sanitation technology in Guava and Citrus
- Established in vitro clonal propagation technology in Guava
- Developed first prototype potting media sterilization unit and steam sterilization technology for potting media
- Developed Germplasm Units of Indigenous and Exotic Guava and Citrus Varieties
- Developed Mutant Germplasm of Guava and Grapefruit
- Conserved and enriched Citrus Genetic Resources
- Identified and published gene families responsible for drought stress tolerance in Pakistani guava varieties: First report
- Published gene sequences of Fusarium species at NCBI database causing Wilt Disease in Guava: First report
- Established exotic fruit crop plantations/blocks including fruit crops and medicinal crops in fruit gardens of IHS
- Developed a green house and upgraded plant tissue culture lab with better research facilities and new equipment
- Started genetic characterization of fruit and vegetable crops germplasm using molecular markers at plant tissue culture cell

PUBLICATIONS

A. Summary of Publications in Peer Reviewed Journals, Proceedings, Books.

Research Publications					Book chapters		Books & Manuals	Total	*Others	RG Citations	H Index
Gene Seq.	IF	HEC Rec.	Other Jour.	Proc.	Int.	Local					
10	40	27	2	3	10	4	10	100	106	1416	21

***D. Oral/Poster presentations** **91**

*E. Extension Articles & brochures	15
F. Research project reports	14

A. RESEARCH PUBLICATIONS, PATENTS & GENE SEQUENCES

INTERNATIONAL PATENT FILED:

Taylor, M. L. Ducreaux, W. Morris, **M. Usman** and R. Hancock. 2015. Enhancing tuber yield at elevated temperatures. UK Patent WO2015044678 A1. Issued 2nd April, 2015.

GENE SEQUENCES (10) - First Report from Pakistan

Fusarium oxysporum strains causing Guava Wilt Disease (GWD)

1. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. *Fusarium oxysporum*. **Genbank Accession # MH368295.1**
2. **Usman, M.**, Shah, M.H., Nawaz-ul-Rehman, M.S., Akhtar, K.P. and Fatima, B. 2018. B5 *Fusarium oxysporum*. **Genbank Accession # MH368297.1**
3. **Usman, M.**, Shah, M.H., Rehman, S.N., Fatima, B. and Akhtar, K.P. 2018. L1Fo *Fusarium oxysporum*. **Genbank Accession # MH378770.1**
4. **Usman, M.**, Shah, M.H., Rehman, S.N., Fatima, B. and Akhtar, K.P. 2018. L1FoR *Fusarium oxysporum*. **Genbank Accession # MH392745.1**

Fusarium solani strains causing GWD

5. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. B7Fs *Fusarium solani*. **Genbank Accession # MH368298**
6. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. F5FsR *Fusarium solani*. **Genbank Accession # MH392748**
7. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. F5Fs *Fusarium solani*. **Genbank Accession # MH392747.1**
8. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. F4Fs *Fusarium solani*. **Genbank Accession # MH392746.1**
9. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. M2Fs *Fusarium solani*. **Genbank Accession # MH368351**
10. **Usman, M.**, Shah, M.H., Rehman, S.N., Akhtar, K.P. and Fatima, B. 2018. M2FsR *Fusarium solani*. **Genbank Accession # MH368352**

IMPACT FACTOR (40) & HEC RECOGNIZED JOURNALS (27)

Sr. No.	Publications	Category	IF
1.	Joyia, W., M. Usman , B. Fatima, N.N. Memon, M. Shahid, S.A.M. Bokhari and M.A. Rana. 2025. Physico-chemical diversity in Guava (<i>Psidium guajava</i> L.) germplasm of Sindh-Pakistan.	W	0.600
2.	Rana, M.A., M. Usman , B. Fatima, I.A. Rana and B. Rashid. 2025. Sexual Compatibility, Fruit Attributes and Seed Development in Grapefruit Varieties Pollinated with Gamma-Ray-Irradiated Pollen. PJAS (in review).	X	0.700
3.	Naseer, M., M. Usman , B. Fatima, S.A.M. Bokhari, M.A. Rana, M. Shahid. 2025. Morpho-chemical profiling and correlations of guava germplasm. SABRAO J. Breed and Genetics 57(2): xxxx (accepted)	X	1.600
4.	Khadija, F., B. Fatima, M. Usman and M.S. Khan. 2024. Effect of floral bud size and culture conditions on embryogenesis in anther derived calli of cucumber cultivars. SABRAO J. Breed and Genetics 56(5): 2079-2089 http://doi.org/10.54910/sabrao2024.56.5 .	X	1.600
5.	Awan, B.A., M. Usman , B. Fatima, Faiz-ur-Rahman and O. Masood. 2024. Efficient clonal propagation of guava cultivars by mini softwood cuttings. JAPS 34(3): 689-695.	X	0.600

6.	Rahman, F., M. Usman , K.P. Akhtar, B. Fatima and M.H. Shah. 2023. Effectiveness of potting media steaming in constraining growth of soil borne pathogenic fungi. <i>PJAS</i> 60(4): 547-554. DOI:10.21162/PAKJAS/23.115	X	0.700
7.	Bokhari, S.A.M., B. Fatima , M. Usman, M.S. Khan and B. Rashid. 2023. Embryogenic responses in anther derived calli of white and pink flesh guava cultivars. <i>PJAS</i> 60(4): 537-546.	X	0.700
8.	Aslam, M.M., M. Usman , B. Fatima, M.A. Rana and M. Shahid. 2023. Impact of gamma irradiated pollens on sexual compatibility, seed setting and fruit attributes in guava (<i>Psidium guajava</i> L.) cultivars. <i>Pak. J. Botany</i> 55(4): 1335-1345.	X	0.900
9.	Usman, M. , S.A.M. Bokhari, B. Fatima, B. Rashid, F. Nadeem, M.B. Sarwar, M.S. Nawaz-ul-Rehman, M. Shahid and C.M. Ayub. 2022. Drought mitigating morphological, physiological, biochemical and molecular responses of guava (<i>Psidium guajava</i> L.) cultivars. <i>Frontiers in Plant Science</i> , doi: 10.3389/fpls.2022.878616	W	5.300
10.	Usman, M. , M. S. Khan, M.M. Khan, M. J. Jaskani and A.S. Khan. 2022. Development of an efficient and reproducible <i>in vitro</i> regeneration system in carrot (T-29). <i>Pak. J. Bot.</i> , 54(3): 943-951	X	0.900
11.	Sabir, M. Z. Naseem, K.R. Hakeem, W. Ahmad, M. Usman , F. Nadeem, M. Zia-ur Rehman. 2021. Alleviation of adverse effects of nickel on growth and concentration of copper and manganese in wheat through foliation application of ascorbic acid. <i>Int. J. of Phytoremediation</i> , DOI: 10.1080/15226514.2021.1962801.	W	3.400
12.	Usman, M. , M.H. Shah, B. Fatima and Z. Ahmad. 2021. Genotypic and Seasonal Variability in Guava Fruit Quality and Implications for Breeding. <i>Pak. J. Agri. Sci.</i> 58(3): 937-944.	X	0.700
13.	Usman, M., B. Fatima, M. Usman , I.A. Rana. 2021. Morphological and stomatal diversity in colchiploid germplasm of grapefruit. <i>Pak. J. Agri. Sci.</i> 58(2): 555-560.	X	0.700
14.	Ali, A., A. Ghafoor, M. Usman , M. Usman, M.K. Bashir, M.I. Javed and M. Arsalan. 2021. Valuation of cost and returns of strawberry in Punjab, Pakistan. <i>Pak. J. Agri. Sci.</i> 58(1): 283-290.	X	0.700
15.	Shah, M.H., Riaz-Ur-Rahman, A. Mahmood, M. Usman and S. Bibi. 2021. Morphological characterization, multivariate analysis and clonal propagation of hybrid rose (<i>Rosa indica</i> L.) germplasm. <i>Pak. J. Agri. Sci.</i> 58(1): 51-59.	X	0.700
16.	Khalid, M.F., S. Hussain, M.A. Anjum, M.A. Ali, S. Ahmad, S. Ejaz, S. Ali, M. Usman and R. Morillon. 2020. Efficient compartmentalization and translocation of toxic minerals lead tolerance in volkamer lemon tetraploids more than diploids under moderate and high salt stress. <i>Fruits</i> 75(5):204-215.	X	0.400
17.	Iqbal, S., X. Ni., M.S. Bilal., T. Shi., M. Khalil-ur-Rehman, P. Zhenpeng and M. Usman . 2020. Identification and expression profiling of sugar transporter genes during sugar accumulation at different stages of fruit development in apricot. <i>Gene</i> , 742: 144584.	W	2.800
18.	Usman, M. , W. Rehman, B. Fatima, M. Shahid, A.H. Saggu, M.A. Rana and A. Fatima. 2020. Fruit quality assessment in pigmented grapefruit (<i>Citrus paradisi</i> Macf.) for varietal diversification. <i>Pak. J. Agri. Sci.</i> 57(4): 1029-1034.	W	0.700
19.	Usman, M. , Q. Zaman, B. Fatima, Iqrar A. Rana and F.S. Awan. 2020. Morpho-chemical diversity and RAPD fingerprinting in white flesh guava cultivars. <i>JAPS</i> , 30(2): 398-409.	Y	0.600
20.	Morris, W.L., L.J.M. Ducreux, J. Morris, R. Campbell, M. Usman , P.E. Hedley, S. Prat, M.A. Taylor. 2019. Identification of TIMING OF CAB EXPRESSION 1 as an environmentally sensitive negative regulator of tuberisation in potato. <i>J. Exp. Bot.</i> 70(20): 5703-5714.	W	5.600
21.	Shah, M.H., M. Usman , B. Fatima, M.S. Rehman. 2019. Assessment of Guava Wilt Disease (GWD) and Varietal Susceptibility in Punjab-Pakistan. <i>Pak. J. Agri. Sci.</i> 56(2): 393-399.	X	0.700
22.	Pereira, F.M., M. Usman , J.C. Nachtigal, N.A. Mayer and O.M. Maphanga. 2017. Advances in Guava Propagation in Brazil and the World. <i>Rev. Bras. Frutic.</i> , v. 39, n.4: (e-358). DOI 10.1590/0100-29452017 358.	X	0.900
23.	Yaqoob, M.S., I.A. Khan, M. Usman and I.A. Rana. 2017. Molecular detection of <i>Candidatus liberibacter asiaticus</i> , the causal organism of huanglongbing (Citrus greening) in Faisalabad, Pakistan for huanglongbing management. <i>Pak J. Agri Sci.</i> 54(1): 21-26.	X	0.700

24.	Fatima B. M. Usman , IA Khan, M.S Khan and M.M. Khan. 2015. Identification of citrus polyploids using chromosome count, morphological and SSR markers. Pak J. Agri Sci. 52(1): 107-114.	X	0.700
25.	Usman, M. K. Bakhsh and B. Fatima. 2015. Exploring embryogenic competence in anthers of bitter melon (<i>Momordica charantia</i> L.) cultivar Faisalabad long. JAPS, 25(1): 181-188. (ISSN: 1018-7081)	Y	0.600
26.	Usman, M. , M. H. Shah, A. Badar, B. Fatima, M. Sabir and Q. Zaman. 2014. Media steaming and Coco-coir enhance growth of Rough lemon (<i>Citrus jambhiri</i> L.) stock. Pak J. Agri Sci. 51(3): 615-623. (ISSN: 0552-9034)	X	0.700
27.	Bashir K.M.I., FS Awan, IA Khan. A. Iqbal and M. Usman . 2014. Identification and authentication of Rosa Sp. through specie-specific SCAR marker (s) development. Genet. Mol. Res. 13 (2): 4130-4139	X	0.700
28.	Usman, M. , S. Noureen, B. Fatima and Q. Zaman. 2014. Long days foster callogenesis in spinach and lettuce cultivars. JAPS 24(2): 585-591.	Y	0.600
29.	Hancock RD, Morris WL, Ducreux LJ, Morris JA, Usman M. , Verrall SR, ... & Taylor M A. 2013. Physiological, biochemical and molecular responses of the potato (<i>Solanum tuberosum</i> L.) plant to moderately elevated temperature. Plant, Cell & Environment. 37(2): 439-450.	W	6.000
30.	Morris WL, Hancock RD, Ducreux LJ, Morris JA, Usman M. , Verrall SR, & Taylor MA. 2013. Day length dependent re-structuring of the leaf transcriptome and metabolome in potato genotypes with contrasting tuberisation phenotypes. Plant, Cell & Environment. 37(6): 1351-1363.	W	6.000
31.	Usman, M., WA. Samad, B. Fatima and MH. Shah. 2013. Pollen parent enhances fruit size and quality in intervarietal crosses in guava (Psidium guajava). Int. J. Agri. Biol. 15(1): 125-129.	Y	0.802
32.	Usman, M. , B. Fatima, M. Usman, W.A. Samad, K. Bakhsh. 2012. Embryo culture to enhance efficiency of induced polyploidization in grapefruit. Pak. J. Bot., 44(SI-1): 399-405.	X	0.900
33.	Usman, M. , Z. Hussain and B. Fatima. 2011. Somatic embryogenesis and shoot regeneration induced in cucumber leaves. Pak. J. Bot., 43(2): 1283-1293.	X	0.900
34.	Fatima, B., M. Usman , I.A. Khan, M.S. Khan and M.M. Khan. 2010. Exploring Citrus cultivars for underdeveloped and shriveled seeds: A valuable resource for spontaneous polyploidy. Pak. J. Bot., 42(1): 189-200.	X	0.900
35.	Usman, M. , B. Fatima, K.A. Gillani, M.S. Khan and M.M. Khan. 2008. Exploitation of potential target tissues to develop polyploids in citrus. Pak. J. Bot., 40(4): 1755-1766.	X	0.900
36.	Fatima, B., M. Usman , T. Ashraf, R.Waseem and M.A. Ali. 2007. <i>In vitro</i> shoot regeneration from cotyledon leaf and hypocotyls explants in Dahlia cultivars. Pak. J. Agri. Sci. 44(2): 312-316.	X	0.700
37.	Khan, M.S., M. Usman , M.I. Lilla. 2006. Facile plant regeneration from tomato leaves induced with spectinomycin. Pak. J. Bot., 38(4): 947-952.	X	0.900
38.	Usman, M. , T. Saeed, M.M. Khan and B. Fatima. 2006. Occurrence of spontaneous polyploids in Citrus. Horticulture Science, 33 (3): 124-129.	X	1.200
39.	Fatima, B., M. Usman , I. Ahmad and I.A. Khan. 2005. Effect of explant and sucrose on Microtuber induction in potato cultivars. Int. J. Agri. Biol. 7(1): 63-66.	Y	0.802
40.	Saeed, R., M. Usman , B. Fatima, and I.A. Khan. 2004. <i>In vitro</i> regeneration and multiple shoot induction in upland cotton (<i>Gossypium hirsutum</i> L.). Int. J. Agri. Biol. 6(4): 704-707.	Y	0.802
41.	Ishaq, M., M. Usman , M. Asif, and I.A. Khan. 2004. Integrated Pest Management of Mango against Mealy Bug and Fruit fly. Int. J. Agri. Biol. 6(3): 452-454.	Y	0.802
42.	Usman, M. , S. Muhammad and B. Fatima. 2005. <i>In vitro</i> multiple shoot induction from nodal explants of Citrus cultivars. J. Cen. European Agriculture, 6(4): 441-448. ISSN: 1332-9094.	X	0.700
43.	Shah, M. H., R. ur Rehman, R.A. Shah, F. Batool, R. Rafique, M. Usman , S. Bibi, S. Yasin and S. Qamar. 2023. Growth and flowering responses of elite varieties of Tulip (<i>Tulipa gesneriana</i> L.) in Rawalpindi climate zone. Sarhad J. Agri., 39(2): 552-557.	Y	-
44.	Shah, M. H., R. Rafique, M. Almas, M. Usman , S. Yasin and S. Bibi. 2022. A Review: Fruit production industry of Pakistan: trends, issues and way forward. Pak. J. Agri.	Y	-

- Res., 35(3): 523-532.
45. Khadija, F., B. Fatima and **M. Usman**. 2022. Evaluation of cucumber germplasm for yield and its contributing attributes. Journal of Agri. and Food 3(1): 1-9. ISSN 2709-3662 Y -
 46. Shah, M.H., R. ur Rehman, R.A. Shah, R. Rafique, M. Usman, S. Bibi and S. Yaseen. 2021. Effect of Substrate for Extending Post-Harvest Sustainability and Freshness in Commercial Varieties of Gerbera (*Gerbera jamesonii*). Biologia (Pakistan), 67(II):141-150. ISSN 2313-206X Y -
 47. Fatima, B., Z. Nazir, **M. Usman**, S.A.M Bokhari, Shumaila. 2021. Enhanced Micropropagation in Stevia (*Stevia rebaudiana* Bertoni). Biologia (Paksitan): 67(1): 33-39. Y -
 48. Safdar, A., A. Afzal and **M. Usman**. 2015. Micropropagation and clonal propagation in *Jatropha quccus* L. Int. J. Biol. & Biotech. 12 (1): 29-38. Y -
 49. Altaf, S., M. M. Khan, M. J. Jaskani, I. A. Khan, M. Usman, B. Sadia, F. S. Awan, A. Ali, A.I. Khan. 2014. Morphogenetic characterization of seeded and seedless varieties of Kinnow Mandarin (*Citrus reticulata* Blanco). Aust. J. Crop Science 8(11): 1542-1549. Y -
 50. Fatima, B. F. Khadija, M.H. Shah and **M. Usman**. 2014. Indirect Shoot Induction Responses in Elite Chillli (*Capsicum annum* L.) Cultivars. Biologia (Pakistan) 60(2): 277-280. Y -
 51. Butt, M. **M., Usman** and B. Fatima. 2013. Enhanced seed germination and callogenesis under long days in leaf disc in Guava cultivars. Biologia (Pakistan) 59(2): 293-298. Y -
 52. **Usman, M., M. Butt, B. Fatima**. 2012. Enhanced in vitro multiple shoot induction in elite Pakistani Guava cultivars for efficient clonal plant multiplication. Afric. J. Biotech. 11(44): 19182-19187. Y 0.560
 53. Anjum, N., **Usman, M., B. Fatima** and M.H. Shah. 2012. Genotype dependent direct and indirect *in vitro* regeneration in elite tomato cultivars. Int. J. Biol. & Biotech. 9(4): 347-351. ISSN 1810-2719 Y -
 54. **Usman, M., M.J. Jaskani, M.Y. Rehman, B. Fatima** and I.A. Khan. 2005. *In vitro* regeneration of monoembryonic mango cultivars. Int. J. Biol. & Biotech. 2(1): 23-28. Y -
 55. Khan, R.W., M.M. Khan, M.J. Iqbal, **M. Usman** and M.J. Jaskani. 2003. Microtuber induction in Indigenous Potato Variety PARS-70. Pak. J. Arid. Agri. 6(2): 19-24. X -
 56. - Khan, M.M., M.J. Iqbal, M. Abbas and **M. Usman**. 2003. Effect of ageing on viability, vigour and chromosomal damage in pea (*Pisum sativum* L.) seeds. Pak. J. Agri. Sci. 40(1-2): 50-54. X -
 57. **Usman, M. B. Fatima, M. M. Khan** and M.I. Chaudhary. 2003. Mango in Pakistan: A Chronological Review. Pak. J. Agri. Sci., 40(3-4): 151-154. X -
 58. **Usman, M., B. Fatima, M.M. Khan** and I.A. Khan. 2002. Response of reproductive organs of papaya to callogenesis. Pak. J. Agri. Sci., 39(3): 210-216. X -
 59. **Usman, M., B. Fatima, M.J. Jaskani, M.M. Khan** and I.A. Khan. 2002. Somatic embryogenesis in papaya. Pak. J. Agri. Sci., 39(3): 217-223. X -
 60. Fatima, B., **M. Usman, M. Ramzan, M.M. Khan** and I.A. Khan. 2002. Interploid Hybridization of Kinnow Mandarin and Sweet Lime. Pak. J. Agri. Sci., 39(2): 132-134. X -
 61. Asif, M., **M. Usman, B. Fatima, M.A. Ali** and M.M. Khan. 2002. Fruit Set and Drop Behaviour of Three Commercial Cultivars of Mango. Pak. J. Agri. Sci., 39(2): 129-131. X -
 62. Khan, M.M., **M. Usman, R. Waseem**. 2002. Role of Gibberellic Acid (GA₃) on Citrus Seed Germination and Study of Some Morphological Characteristics. Pak. J. Agri. Sci. 39(2): 113-118. X -
 63. Khan, M.M., Thompson, K. and **M. Usman**. 2002. Correlation of Seed unsaturated X -

- fatty acids with seed persistence in the soil. Pak. J. Agri. Sci. 39(4):300-306.
64. Asif, M., **M. Usman**, M.J. Jaskani, and M.M. Khan. 2002. Comparative Study of Flower Sex Ratio in Different Cultivars of Mango (*Mangifera indica* L.). Int. J. Agri. Biol. 4(2): 220-222. Y -
 65. **Usman**, M., B. Fatima, M.J. Jaskani and M.M. Khan. 2002. Development of a Callogenic protocol in Papaya (*Carica papaya* L.): 1. In Vivo Grown Vegetative Explants. Int. J. Agri. & Biol. 4(1): 95-98. Y -
 66. **Usman**, M., B. Fatima, M.J. Jaskani and M.A. Iqbal. 2002. Development of a Callogenic protocol in Papaya (*Carica papaya* L.): 2. In Vitro Grown Vegetative Explants. Int. J. Agri. Biol. 4(1): 99-102. Y -
 67. **Usman**, M., M. Ramzan, B. Fatima, M.J. Jaskani, and M.M. Khan. 2002. Citrus Germplasm Enhancement by Interploid Hybridization 1: Reciprocal Crosses of Kinnow & Succari. Int. J. Agri. Biol. 4(2): 208-210. Y -
 68. Khan, M. M., G. F. Hendry and **M. Usman**. 2002. Light promotes free radical processes in citrus (*Citrus paradisi* Macf.) seeds. Int. J. Agri. Biol., 4(2): 199-203. Y -
 69. Khan, M.M., K. Thompson, **M. Usman** and B. Fatima. 2002. Role of Moisture Content and Controlled Atmosphere in *Citrus* Seed Storage. Int. J. Agri. Biol. 4(2): 259-266. Y -
 70. **Usman**, M., B. Fatima and M.J. Jaskani. 2001. *Breeding in Mango*. Int. J. Agri. & Biol, 3(4): 522-526. Y -
 71. Rana, M.A. **M. Usman**, B. Fatima, A. Fatima, I.A. Rana, W. Rehman and D. Shoukat. 2020. Prospects of Mutation Breeding in Grapefruit (*Citrus paradisi* Macf.). J. Hort. Science and Technology 3(2): 31-35. ISSN 2664-9489 - -
 72. Rafique, R., B. Fatima, **M. Usman**, M.S. Iqbal, S. Zia-ul-Hassan, K. Shabiir, M. Rasheed, M. Iqbal, S. Mushtaq and M. Rasheed. 2013. Effect of sucrose on in vitro callogenesis and organogenesis of *Dendrobium sabin* H. Int. J. Modern Agri; 2(1): 43.47. - -

Proceedings (3)

1. Bokhari, S.A.M., **M. Usman**, M. Jehangir, R. Arif, B. Fatima and M. Naseer. 2019. Potential of mutation breeding in guava crop improvement. In: I.A. Hafiz, T. Ahmad, A.A. Qureshi and S.Z. Hasan [eds.], Proc. of Int. Hort. Conf. Pakistan, April 25-27, 2018; pp. 191-199. ISBN 978-969-8374-26-5
2. **M. Usman**, B. Fatima and M.M. Khan. 2007. Application of molecular techniques in Citrus crop improvement. Proc. of workshop on “*Production of Disease-Free Citrus Nursery Plants (Production, Certification and Challenges)*” Sept. 12-17. p. 117-123. held by Inst. of Hort. Sciences, Uni. of Agri., Faisalabad. ISBN 978-969-8237-39-4.
3. Saeed, T., M. M. Khan, M. Aslam, **M. Usman** and K. Ziaf. 2007. Effect of Benzyl Adenine on callus formation in apple. Proc. Int. Symp. on prospects of Hort. Industry in Pakistan held by Inst. of Hort. Sciences, Uni. of Agri., Faisalabad, March 28-30, pp. 139-142.

BOOKS, BOOK CHAPTERS AND PRACTICAL MANUALS (23)

EDITED BOOKS (2), ABSTRACT BOOKS (2) & PROCEEDINGS

- Abstract Book*. 2023. Editors: A.S. Khan, **M. Usman**. R. Anwar and I. Ahmad, The 4th BRI Sino-Pak Agriculture Forum organized by Inst. Hort. Sciences, Uni. of Agriculture, Faisalabad-Pakistan in Nov., 9-10, 2023.
- Abstract Book*. 2021. Editors: A.S. Khan and **M. Usman**., *Int. Horticulture E-Conference* organized by Pakistan Society of Hort. Science and Inst. Hort. Sciences, Uni. of Agriculture, Faisalabad-Pakistan in Feb., 22-23, 2021. <https://www.pshsciences.org/event/ihc2021/>
- Citrus and Guava Nursery Raising: A practical approach*. 2013. **M. Usman** and B. Fatima. Sponsored by EFS-USDA, Uni. of Agri. Faisalabad-Pakistan. Pak TM Printers, Faisalabad. ISBN 978-969-8237-64-6.
- Citrus Nursery Raising: Principles and Practices*. 2005. M. Mumtaz Khan, **M. Usman** and Mazhar Abbas (Eds.). Sponsored by MoST, Islamabad-Pakistan. MAS Publishers, Faisalabad.

BOOK CHAPTERS (14)

International (10)

- Faisal, M., **M. Usman**, M.S. Khan, B. Fatima and F. Rehman. 2025. **Biotechnological Approaches in Mango Breeding**. In: *Handbook of Research on Mango Production: Post-harvest Science, Production, Nutrition and Processing Technology*. (Eds. S. Hussain, Nahar, K., Rajwana, I.A., Ercisli, S. and S. Ahmad) Pub. **CRC Press, Taylor and Francis Group**, pp. xxx
- Rehman, F., **M. Usman**, A. Fatima and B. Fatima. 2025. **Mango Germplasm Resources: Characterization, Climate Resilience and Conservation Approaches**. In: *Handbook of Research on Mango Production: Post-harvest Science, Production, Nutrition and Processing Technology*. (Eds. S. Hussain, Nahar, K., Rajwana, I.A., Ercisli, S. and S. Ahmad) Pub. **CRC Press, Taylor and Francis Group**, pp. xxx
- Nafees, M. S. Hussain, **M. Usman** and M. J. Jaskani. 2023. **Pomegranate: Production, Environment and Future Prospects**. In: *Cultivation of Fruit Trees for Enhanced Climate Change Resilience*, Vol. 2 (Ed. A.A. Abul Soad and J.M. Al-Khayri). Pub. **CRC Press, Taylor and Francis Group**, pp. 205-224. [Ebook ISBN 9781003351153]
- Usman, M.**, Safdar A. Mirza and B. Fatima. 2023. **Climate Resilience in Indian Jujube (*Ziziphus mauritiana* L.) and other Jujube species**. In: *Cultivation of Fruit Trees for Enhanced Climate Change Resilience*, Vol. 1 (Ed. A.A. Abul Soad and J.M. Al-Khayri). Pub. **CRC Press, Taylor and Francis Group**, pp. 241-271. [ISBN 9780367151898]
- Usman, M.** 2023. **Enhancing Climate Change Resilience in Guava (*Psidium* Species)**. In: *Cultivation of Fruit Trees for Enhanced Climate Change Resilience*, Vol. 1 (Ed. A.A. Abul Soad and J.M. Al-Khayri). Pub. **CRC Press, Taylor and Francis Group**, pp. 191-226. [ISBN 9780367151898] [ISBN 9780367151898]
- Usman, M.**, I.A. Rana, M.S. Rehman, B. Fatima and M. Sarwar Khan. 2022. **Citrus Genetic Resources: Molecular Characterization, Omics and Conservation Approaches**. In: *Citrus Production: Technological Advancements and Adaptation to Changing Climate* (Eds. S. Hussain, M.F. Khalid, M. A. Ali, N. Ahmad, M. Hassunzaman and S. Ahmad) Pub. **CRC Press, Taylor and Francis Group**, pp. 73-94. [ISBN: 9780367634742 hbk; 9781003119852 ebk]
- Mustafa, G., **M. Usman**, M.F. Joyia and M.S. Khan. 2021. **Citrus Biotechnology: Current Innovations and Future Prospects**. In: *Citrus* (Ed. M.S. Khan and I.A. Khan); **IntechOpen: London, UK**, DOI: 10.5772/intechopen.100258. [ISBN: 978-1-83968-724-2]
- Usman, M.**, M. M. Khan, R. Al-Yahyai and B. Fatima. 2019. **Lime Breeding: a way forward**. In: *Achieving Sustainable Cultivation of Tropical Fruits* (Ed. Prof. Elhadi Yahia). Pub. **Burleigh Dodds Science Publishing**, pp. 1-45. <http://dx.doi.org/10.19103/AS.2019.0054.09> [ISBN: 978042926638]
- Usman, M.** and B. Fatima. 2018. **Mandarin (*Citrus reticulata* Blanco) Breeding**. In: J. M. Al-Khayri et al. (eds.), *Advances in Plant Breeding Strategies: Fruits*. **Springer, Cham** Pp. 465-533. [ISBN: 9783319919447]
- Usman, M.** and M. M. Khan, 2017. **Planning and Orchard Management**. In: *The Lime: Botany, Production and Uses*. Publishers **CABI**. pp. 79-90. DOI 10.1079/9781780647845.0000 [ISBN: 9781780647845]

National (4)

- Usman, M.**, K. Ziaf and Z. Ye. 2018. **Breeding of Horticultural Crops**. In: A.S. Khan and K. Ziaf (Eds.), *Horticultural Science and Technology*. Pp. 25-65. ISBN 9781780647845
- Usman, M.** and B. Fatima. 2013. **Nursery sanitation in Citrus and Guava: A way forward**. In: *Citrus and Guava Nursery Raising: A practical approach*. M. Usman and B. Fatima (Eds.). ISBN 978-969-8237-64-6. Sponsored by Endowment Fund Secretariat (EFS-USDA) Uni. Of Agriculture, Faisalabad, Pakistan. Pp. 1-22.

Usman, M., M.H. Shah and Q. Zaman. 2013. **SOPs for raising containerized Citrus and Guava Nursery.** In: *Citrus and Guava Nursery Raising: A practical approach.* M. Usman and B. Fatima (Eds.). ISBN 978-969-8237-64-6. Sponsored by Endowment Fund Secretariat (EFS-USDA) Uni. Of Agriculture, Faisalabad, Pakistan. Pp. 23-47.

Usman, M. 2005. **Plant Propagation and Improvement.** In: *Citrus Nursery Raising: Principles and Practices.* M.M. Khan, M. Usman and Mazhar Abbas (Eds.). ISBN Sponsored by Ministry of Science and Technology (MoST), Islamabad-Pakistan. pp: 23-66.

PRACTICAL MANUALS (6)

Post-grad (4)

Usman, M. and B. Fatima. 2022. Fruit Breeding. Ed. A.U. Malik. Manual ID 36; 1st Ed. University of Agriculture, Press publishers. pp: 1-44. ISBN: 978-969-2277-20-4 [Print]; 978-969-2277-21-1 [e-book]

B. Fatima and **M. Usman.** 2022. Rootstocks for Fruit Crops. Ed. A.U. Malik. Manual ID 32; 1st Ed. University of Agriculture, Press publishers. pp: 1-58. ISBN 978-969-2277-56-3 [Print]; 978-969-2277-57-0 [e-book]

Usman, M. A. Sattar and S. Ahmad. 2022. Advances in Fruit Production. Ed. A.U. Malik. Manual ID 39; 1st Ed. University of Agriculture, Press publishers. pp: 1-26. ISBN: 978-969-2277-24-2 [Print]; 978-969-2277-25-9 [e-book]

Fatima, B. M. J. Jaskani and **M. Usman.** 2022. Plant Tissue Culture. Ed. A.U. Malik. Manual ID 39; 1st Ed. University of Agriculture, Press publishers. pp: 1-44. ISBN: 978-969-2277-24-2 [Print]; 978-969-2277-25-9 [e-book]

Under-grad (2)

Fatima, B. and **M. Usman** 2022. Basics of Plant Tissue Culture. Ed. A.U. Malik. Manual ID 13; 1st Ed. ISBN 978-969-2277-12-9 [Print]; 978-969-2277-13-6 [e-book] University of Agriculture, Press publishers. pp: 1-33.

Usman, M. B. Fatima and M. Awais Ghani. 2022. Breeding of Horticultural Crops. Ed. A.U. Malik. Manual ID 23; 1st Ed. ISBN 978-969-2277-42-6 [Print]; 978-969-2277-43-3 [e-book] University of Agriculture, Press publishers. pp: 1-24.

COMPETITIVE RESEARCH GRANTS/TECHNOLOGY TRANSFER PROJECTS

In progress: (2)

Sr. No.	Project Titles	Years	Amount (Millions)	PI/ Co-PI	Funding agencies
1.	Import of High Value Germplasm and Technologies of Elite Exotic Fruits, Vegetables and Medicinal Crops for Diversification and Sustainable Production in Punjab	2022-2027	83.218 M	PM	PARB, Lahore
2.	Establishing Phenological and Genetic Responses to Seasonal Shifts in Guava (Psidium guajava L.) Germplasm	2021-2024	3.10	PI	PSF, Islamabad

Successfully completed: (07)

Sr. No.	Project Titles	Years	Amount (Millions)	PI/ Co-PI	Funding agencies
1.	Development and genetic characterization of polyploid germplasm for hybridization in elite guava strains.	2017-2020	6.92	PI	ALP-PARC, Isd.

2.	Development and genetic characterization of polyploids and mutants in Grapefruit for hybridization and germplasm enhancement.	2016-2020	8.96	PI	HEC, Isd.
3.	Demonstration of <i>In Vitro</i> Clonal Propagation System in Elite Guava Cultivars.	2014-2017	1.92	PI	USDA-EFS, UAF
4.	Establishment of a Model Fruit Plant Nursery for Demonstration of Container Grown Plant Production in Citrus and Guava.	2011-2013	3.02	PI	-do-
5.	Polyploidization and morphogenetic characterization in acid lime cultivars for germplasm enhancement	2018-2021	2.41	Co-PI	HEC, Isd.
6.	Policy Paper on High Value crops (Guava and Strawberry): Constraints and opportunities	2017-2018	1.00	Co PI	USPCAS, AFS, UAF
7.	Establishment of a Modern Citrus Nursery of Certified Plants through Sanitation Techniques	2007	30.0	PD	MoST, Isd.

Post-Doc Fellowships

1. **Usman, M.** and M. Taylor. 2012-2013. **The molecular physiology of potato under abiotic stress.** The James Hutton Institute, Dundee. UK. Funded by HEC under Post-Doc fellowship scheme.
2. **Usman, M.** and M. Taylor. 2011-2012. **The role of Carotenoid Cleavage Products and Circadian Clock gene in controlling potato tuberization under heat stress.** The James Hutton Institute, Dundee. UK. Funded by British Council UK under Commonwealth Scholarships.

Research Officer

3. **National Co-ordinated Research Project on Mango Crisis: First Annual Report. 1996.** Dr. Iqbal Ahmad Khan. P.I/Professor, Dept. of Horticulture, Uni. of Agriculture, Faisalabad.

ABSTRACTS IN INTERNATIONAL CONFERENCES/SYMPOSIA/WORKSHOPS

International			National		
Events	Oral	Poster	Events	Oral	Poster
9	8	8	26	39	58

Sr. No.	Events	Authors	Years	Titles	Ref.	Oral/Poster
International (18)						
1.			2024			
2.	Symp. On Sci. & Tech. Innovations in Pummelo/grapefruit industry (19-20 Nov), Shangrao-CHINA	Usman et al.	2024	Mutation breeding program for germplasm diversification in Grapefruit: An overview.	O-11	O
3.	Int. Conf. on the Cooperation of Industry, Education, Research and Application Office of Hong Kong, Macao, and Taiwan Affairs, Hainan Uni., CHINA	Usman	2022	Germplasm development and characterization: a guava and citrus perspective		O
4.	VII International Symp., on Tropical and Subtropical Fruits. ISHS (Aug. 2018),	Usman et al.,	2017	Physicochemical characterization of Pink and Red Fleshed grapefruit (Citrus paradisi Macf.) varieties in Pakistan		O

Turkey.						
5.		Usman et al.,	2017	Morphological and physicochemical characterization of Falsa (<i>Grewia asiatica</i>): A native nutraceutical crop		P
6.		Usman et al.,	2017	Screening of 'Round' Guava Strains for Physico-chemical Attributes		P
7.		Usman et al.,	2017	Assessment of Plant Growth in Guava Cultivars under Water Stress		P
8.	IV Int. Symp. on Guava and Other Myrtaceae. ISHS (Nov. 20-25, 2016), Australia.	Usman et al.,	2016	Assessment of variation for physico-chemical properties in elite Pakistani Guava cultivars and validation using RAPD fingerprinting		O
9.	1st South African Guava and Other Myrtaceae Symp. (25-28 May 2015), Kruger National Park, South Africa (ISHS)	Usman et al.,	2015	Seasonal & geographic variability alter fruit quality in guava cultivars	-	O
10.		Usman et al.,	2015	Impact of environmental components on plant growth responses in guava cultivars"	-	O
11.	UK Plant Sci 2013, UK Plant Sci. Fed. (16-17th April 2013), Uni. of Dundee, UK	Taylor et al.,	2013	A physiological, biochemical and transcriptomic approach to understanding the response of potato to elevated temperature.	P13	P
12.	11 th Int. POG Conf. Reactive Oxygen and Nitrogen Sp. In plants Warsaw, Poland	Rob et al.,	2013	High Temperature Inhibition of Potato Tuberisation is Associated with Altered Redox Status and Associated Transcript Profiles	Biotechnologia 94, 176	P
13.	7th Int. Symp. on <i>In Vitro</i> Culture and Hort. Breeding Belgium , Ghent, 18-22 Sept., 2011	Usman et al.,	2011	Selection and <i>in vitro</i> clonal propagation for guava crop improvement.	IVB 21, p. 110.	P
14.		Usman et al.,	2011	Response of PGRs for direct and indirect organogenesis in economically important leafy vegetables	MP 45, p. 151.	P
15.	2 nd Int. Citrus Biotech Symp., ISHS and ISC in Univ. of Catania, Italy (Nov. 30 th to Dec. 2, 2009)	Usman et al.,	2009	Colchicine induced polyploidy in grapefruit cultivars	p. 130	O
16.		Usman and Fatima	2009	In vitro culture: A potential tool in Citrus propagation and crop improvement	p. 131	P
17.	7th Int. Cong. Citrus Nurserymen, Cairo- Egypt , Int. Soc. of Citrus Nurserymen (ISCN), Sept. 17-21, 2005.	Usman et al.,	2005	Occurrence of spontaneous polyploids in Citrus.	p. 43	O
18.		Fatima et al.,	2005	Cultivar response to solar direction for seed development: A preliminary study to explore spontaneous polyploidy in <i>Citrus</i> .	p. 44	O
National (91)						
19.						
20.	PBS Conf. BZU, Multan	Atiq et al.	2025	Anthocyanins and Carotenoids Production by Cell Suspension Cultures in Carrot Cultivars	-	P
21.	Int. Conf. on Plant Biodiversity and Biosafety, UAF 27-29 May 2024	Usman et al.	2024	Introducing exotic fruit and spice crops for germplasm diversification	p-62	P (2 nd Posit.)
22.		Waris et al.	2024	Disclosing the potential of exogenous jasmonic acid application for sustaining wheat growth and antioxidant potential under aphid infestation	P 54	P
23.	Int. Symp. On Medicinal Plants and Natural Products March 7-8 2024	Abasi et al.	2024	Effect of organic mulches on growth and yield of Garlic (<i>Allium sativum</i>)	p. 37	P
24.		Shareef et al.	2024	Morphological and anatomical variations in phytoplasma infected Fenugreek plants	p. 65	P
25.		Siddiq et al.	2024	Effect of proline on Quinoa under salt stress	p. 77	P
26.	Int. Hort. Conf. and Expo, Islamia Uni Bahawalpur (Feb, 26-28 2024),	Arooge et al.	2024	Physicochemical Diversity in Acid Lime Cultivars and Hybrids	p. 159	P
27.		Anum et al.	2024	Cytological, biochemical and physiological responses of colchiploid germplasm in guava	p.161	P

28.		Khadija et al.	2024	Establishment of Micropropagation in Cucumber Cultivars	p. 166	P
29.		Abbasi et al.	2024	Effect of Moringa Leaf Extract on Seed Germination, Seedling Growth and Yield in Cumin	p. 83	P
30.		Anum et al.	2024	Exploring Ploidy Manipulation in Potato for Improved Yield and Quality	p. 71	O
31.		Ziaf et al.	2024	Effect of Different Drying Methods on Tomato Flakes Production	p. 134	P
32.	BRI 4 th Sino-Pak Agri. Forum: “Sustainable Agri. For economic prosperity & food security” (9-10 Nov., 2023) IHS_UAF.	Usman et al.	2023	Introduction of Elite Exotic Horticultural Crops for Germplasm Diversification and Mitigating Climate Change	p. 36	P
33.		Arooge et al.	2023	Fruit quality attributes in White and Pink Grapefruit germplasm	p. 30	P
34.		Arooge et al.	2023	Estimation of Phenotypic Variability in Gamma Irradiated Germplasm of Acid Lime Cultivars	p. 36	P
35.		Latif et al.	2023	Effect of Growth Stimulants on Plant Growth and Yield of Cauliflower	p. 41	P
36.		Awan et al.	2023	Estimating yearly variability in phenological attributes of guava germplasm	p. 59	P
37.		Irfan et al.	2023	Effect of Mulching Materials on Growth and Yield of Cuminum cyminum L.	p. 44	P
38.		Shakeel et al.	2023	Effect of GA3 and NAA on Growth and Yield of Cumin (Cuminum cyminum L.)	p. 45	P
39.	7 th Int. Horticulture Conference (16-18 Feb. 2023), Dept. of Hort., MNSUA, Multan .	Usman et al.	2023	Prospects of mutation breeding in crop improvement: A citrus outlook.	xii	O
40.		Anum et al.	2023	Androgenic responses in Guava (Psidium guajava L.) cultivars	P 26	P
41.		Arooge et al.	2023	Physiological and Biochemical Responses of Colchiploid Germplasm in Acid Limes	P 81	P
42.		Awais et al.	2023	Impact of gamma irradiation on leaf biochemical traits of grapefruit germplasm	P 78	P
43.		Awan et al.	2023	Phenochemical Diversity in Selected Guava Germplasm Across Seasons	P 207	P
44.		Qurat-ul-Ain et al.	2023	Assessment of Genetic Diversity in Guava Cultivars using SSR Markers	P 208	P
45.		Din et al.	2023	Optimizing micropropagation and regeneration protocols for mass propagation of Gerbera jamesonii	P 23	P
46.	Int. Conf. on “Climate Change: Impacts and Solutions” (7-9 Nov. 2022), UAF.	Awan et al.,	2022	Estimation of variability in phenological responses of guava germplasm across seasons	CCIS-1133	P
47.	7 th Int. Conf. on Climate Smart Agriculture: Innovations and Adaptations (15-17 June 2022), Uni. of Poonch Rawlakot .	Awan et al.,	2022	Screening of guava (Psidium guajava L.) germplasm for plant growth and phenology	CAMH-26 P 214	O
48.	PSHS Int. Horticulture Conference (17-19 May 2022), Dept. of Hort., Gomal Uni., DI Khan .	Shah et al.,	2022	Micropropagation in Cyclamen: Multiple shoot induction through corms	P23	P
49.		Fatima et al.,	2022	In vitro Regeneration and Characterization of Colchiploid Germplasm in Acid Lime Cultivars	P25	O
50.		Bokhari et al.,	2022	Impact of Irradiated Pollens on Compatibility and Fruit Traits in Intervarietal Crosses of Guava	P39	P
51.		Rana et al.,	2022	Morphological Variability in Gamma Irradiated Germplasm of Grapefruit	P81	P
52.		Bokhari et al.,	2022	Guava wilt disease: A silent pandemic	P87	P
53.	Int. Horticulture E-conference (22-23 Feb.	Joyia et al.	2021	Physicochemical characterization of Guava (Psidium guajava L.) germplasm of Sindh	p. 12	P

54.	2021), Inst. of Hort. Sciences, Uni. of Agriculture, Faisalabad.	Riaz et al.	2021	Physicochemical diversity in white flesh guava germplasm of Punjab and KPK regions	p. 12	O
55.		Ahmad et al.	2021	Potato Germplasm Characterization for Phenotypic Diversity and Tuber Yield	p. 15	P
56.		Bokhari et al.	2021	Callus induction and embryogenesis responses in anthers of Guava (<i>Psidium guajava</i> L.) Cultivars	p. 21	O
57.		Fatima et al.	2021	Phenotypic characterization of colchipsoid germplasm of <i>Eustis limequat</i>	p. 21	O
58.		Rana et al.	2021	Morphological and stomatal diversity in colchipsoid germplasm of 'Foster Pink' Grapefruit (<i>Citrus paradisi</i> Macf.)	p.22	O
59.		Arooge et al.	2021	In Vitro Regeneration Responses in Acid Limes	p. 22	O
60.		Khadija et al.	2021	Effect of 6-Benzylaminopurine on Micropropagation of Selected Cucumber Germplasm	p. 29	P
61.		Awan et al.	2021	Effect of pruning on plant growth, reproductive behavior and fruit production in guava varieties	p. 44	P
62.	5 th Int. Conf. of Hort. Sci., Inst. of Agri. Sciences, University of Punjab, Lahore (26-28 Feb 2020)	Shah et al.	2020	Micropropagation in <i>Gerbera</i> (<i>Gerbera jamsonii</i> L.)	p. 13	P
63.		Usman et al.	2020	Plant responses to water stress in Guava (<i>Psidium guajava</i> L.)	p. 21-22	O
64.		Rana et al.	2020	Effect of pollen sources on fruit size and quality attributes in pink flesh grapefruit	p.92	P
65.		Mirbaz et al.	2020	Micropropagation in Potato cultivars	p. 119	P
66.		Shah et al.	2020	Morphogenetic characterization of local/desi and hybrid rose (<i>Rosa indica</i> L.) cultivars	p. 144	P
67.		Fatima et al.	2020	Phenotypic characterization of colchipsoid germplasm in Mexican Lime (<i>C. aurantifolia</i> L.)	p. 152	P
68.		Nazir et al.	2020	Enhance micropropagation in <i>Stevia</i>	p. 156	P
69.		Tahir et al.	2020	Morphological characterization of Gamma irradiated germplasm in Phalsa	p. 156	P
70.		Awan et al.	2020	Enhanced clonal multiplication using minicuttings of Guava	p. 157	P
71.		Usman et al.	2020	Morphogenetic diversity in irradiated germplasm of white and pink flesh grapefruit (<i>C. paradisi</i> L.) varieties	p. 168	P
72.		Bokhari et al.	2020	Stability of metaxenial effects in intervarietal crosses of Guava (<i>Psidium guajava</i> L.)	p. 168	P
73.	1st Int. Conf. on Hort. Crop Prod. & Protec. 19 th -20 th Sept. 2019, Uni. of Sarg., Sargodha.	Muzammil et al.	2019	Compatibility and Metaxenial Effects on Fruit Physico-Chemical Attributes in Intervaretial Crosses in Guava (<i>P. guajava</i> L.)	p. 2	O
74.		Fatima et al.	2019	Morphological and Biochemical Characterization of Acid Lime Species	p. 3	O
75.		Usman et al.	2019	Phenotypic Variability in Gamma Irradiated Germplasm of Grapefruit (<i>C. paradisi</i> Macf.)	p. 9	P
76.		Khadija et al.	2019	Establishment of Efficient Micro-propagation Protocols for Selected Cucumber Germplasms with Different PGRs	p. 10	P
77.	4 th Int. Conf. of Hort. Sci., Dept. of Hort. BZU, Multan (26-28 Feb 2019)	Usman et al.,	2019	Cytological characterization of novel fungal species isolated from wilting guava trees	pp. 40-41	O
78.		Usman et al.,	2019	Ploidy manipulations in guava for germplasm enhancement	pp. 157	O
79.		Usman et al.,	2019	Screening of "Pyriform" guava strains for physico-chemical attributes	pp. 180	P
80.	Conf. on "Innovations in Agri." ISES, Uni of Agri. Fsd and Pak. Agri. Sci. Forum, (Feb. 13-15, 2019)	Usman et al.,	2019	Plant Growth and Fruit Quality Estimates in Guava under Deficit Irrigation	pp. 217	P
81.	1 st annual post-grad students Research	Awais et al.	2018	Effect of pollen parents on fruit size and quality in Guava hybridization	PSRS-06, p 8	O
82.	Symposium (4 Dec. 2018)	Arooge et al.	2018	Physico-chemical characterization of grapefruit genotypes	PSRS-P21, p48	P

83.		Anum et al.	2018	Physiological Changes in Guava under Water Deficit and Recovery	PSRS-P22, p49	P
84.	2 nd Int. Conf. on Plant Sciences, GCU, Lahore, Pakistan (Dec. 5-7).	Usman, M.	2018	Mutation breeding in fruit crop improvement: A citrus and guava perspective.	O (Keynote Speaker)	
85.		Usman et al.	2018	Screening of 'Round' guava strains for physico-chemical traits	ID: 190-Or-ICPS2018 pp. 102	O
86.		Jahangir et al.	2018	Assessment of Foliage Diversity in Seedlings of Elite Strains of Guava Cultivars	ID: 139-Or-ICPS2018 pp. 82	O
87.		Fatima et al.	2018	Screening of guava cultivars for tolerance under water deficit	ID: 317-P-ICPS2018 pp.131	P
88.		Usman et al.	2018	Morphological and physicochemical characterization of Falsa (<i>Grewia asiatica</i>): A native nutraceutical crop	ID: 352-P-ICPS2018 pp.142	P
89.	National conf. on "Recent trends and opportunities to enhance citrus prod. & export" during May 03-04, 2018	Usman, M.	2018	Prospects of Mutation Breeding in Citrus	O (Invited Speaker)	
90.	3 rd Int. Conf. of Hort. Sci., Dept. of Hort. PMAS-Arid Uni., Rawalpindi (25-27 April, 2018)	Usman	2018	Prospects of Mutation Breeding in Grapefruit (<i>C. paradisi</i> Macf.).	p. 29	O
91.		Usman	2018	Potential of mutation breeding in guava crop improvement	p. 28	O
92.		Usman et al.	2018	In vitro clonal propagation technology in guava: An overview	p. 42	P
93.		Fatima et al.	2018	Effect of GA3 and Salicylic acid in "Round" guava	p. 90-91	P
94.		Bokhari et al.	2018	Morpho-physiological responses of guava cultivars to water deficit	p. 45	P
95.	National Conf. Challenges & opportunities to boost Agri. In changing climate, BZU , sub campus Layyah (29-30 March 2017)	Shah et al.	2017	In vitro response in elite cultivars of Rose (<i>Rosa indica</i> L.)	p. 192	P
96.		Shah et al.	2017	Effect of different growth regulators on in vitro rooting response of <i>Bougainvillea glabera</i>	p. 212	P
97.		Shah et al.	2017	Morphological characterization of Elite Rose cultivars	p. 213	P
98.	2 nd . Int. Conf. of Hort. Sci., Inst. of Hort. Sci., UAF (18-20 Feb. 2016)	Usman et al.	2016	Impact of environmental components on plant growth in guava cultivars during summer season	p. 48	O
99.		Raza et al.	2016	Geographical variability in biochemical attributes of guava cv. Round leaf extract	p. 55	P
100.		Munawar et al.	2016	Plant growth enhancement using nitrogenous fertilizers in guava cv. Round trees	p. 167	P
101.		Usman et al.	2016	Influence of pollen resources on fruit size and quality in intervarietal crosses in mango	p. 139	P
102.		Shafqat et al.	2016	Effect of rootstock types on leaf mineral composition and physiology in elite citrus scion varieties	p. 96	P
103.	Annual Review Workshop, USDA Endo. Fund Sec. UAF.	Usman	2018	Progress of project: "Demonstration of in vitro clonal propagation system in elite guava cultivars"	Pp. 14-15	O
104.		Usman	2016	Progress of project: "Demonstration of in vitro clonal propagation system in elite guava cultivars"	Pp. 14-15	O
105.		Usman	2015	Progress of project: "Demonstration of in vitro clonal propagation system in elite guava cultivars"	Pp. 18	O
106.	Int. Conf. on Soil Sustain. for food security, Inst. Of Soil and Env. Sciences, UAF (15-17, Nov. 2015)	Usman et al.,	2015	Growth Response of Guava (cv. White Fleshed Round) under Salt Stress	p. 130	P
107.	Int. Conf. on Plant Sciences held at Botany Dept., GC Uni., Lahore-Pakistan (22-	Usman et al.,	2014	Effect of Season and Localities on Fruit Quality in Guava Cultivars	p.	O
108.		Usman et al.,	2014	Musambi orange pollen parent enhanced fruit quality in Feutrell's Early mandarin	p.	O

109.	24 Sep 2014).	Usman et al.,	2014	Exploring androgenic competence in elite indigenous root crops	p. 108	P
110.		Usman et al.,	2014	Prospects of in vitro clonal propagation in guava	p. 109	P
111.	Int. Conf. Stress Biol. & Biotech. Challenges & Management held at IAGS, Uni. of Punjab, Lahore-Pakistan (21 st -23 rd May 2014).	Usman et al.,	2014	Guava Decline: An alarming menace to the local fruit industry.	p. 67	O
112.	Int. Conf. on Applied Genetics and Biotech. held by CABB, UAF , 8-10 Dec. 2011	Usman and Taylor	2011	The role of CCD family in potato tuberization under heat stress.	p. 30	O
113.		Shah et al.,	2011	The role of selection and hybridization in guava crop improvement.	p. 99	O
114.		Samad et al.,	2011	The potential of polyploidy in guava crop improvement.	p. 108	P
115.		Bashir et al.,	2011	Molecular characterization of Rosa Sp., through SCAR markers	p. 109	P
116.	Int. Conf. On Pros. & Challenges to Sustainable Agri.: Uni. AJK , Rawlakot (14-16 July 2011)	Azam et al.,	2011	Response of PGRs on in vitro multiple shoot induction in Zinnia.	p. 318	O
117.		Zawar et al.,	2011	Phenotypic characterization of Mango genotypes at Faisalabad.	p. 306	O
118.	2 nd Int. Conf. of Plant Sci. and 11 th National Meeting of Plant Scientists, GC Uni. Lahore, Pakistan . (22-24 th February 2011)	Usman et al.,	2011	Embryo culture to enhance efficiency of induced polyploidization in grapefruit.	PTC 10 p. 70	O
119.		Usman et al.,	2011	Anther derived calli induced on NAA and BAP in Bitter Gourd.	PTC109 p. 162	O
120.	Int. Conf. on Adv. in Agri.: Pros. & Potentials of Natural Resources in Food Security. Uni. AJK , Rawalakot (11-12 Aug 2009)	Usman	2009	Doubled Haploidy: A potential track for efficient development of inbred lines in horticultural crops	p. 74	O
121.	Int. Conf. Plant Sci. (10 th Nat. meet. of plant sci.) held by Pak. Bot. Soc., Dept. of Botany, Uni. of Agri., Faisalabad . (21 st -24 th April, 2008)	Usman et al.,	2008	Exploitation of potential target tissues to develop polyploids in Citrus	ICPS 442, p. 191	P
122.		Usman et al.,	2008	Somatic embryogenesis and plant regeneration in cucumber cultivars.	ICPS 462, pp. 199	P
123.		Khan et al.,	2008	Chloroplast biotechnology for overexpression and transgene containment	ICPS	P
124.		Fatima et al.,	2008	<i>In vitro</i> regeneration studies in Capsicum cultivars.	ICPS 457, pp. 197.	P

EXTENSION ARTICLES/BROCHURS (28)

Sr. No.	Titles	References
English/Urdu articles (23)		
		HortiMag Pak. Soc. Hort. Sci.

1.	From Lychee to Longan: Expanding exotic fruit farming in Pakistan	2025 14(1): xx
2.	Prospects of Avocado "Makhan Phal" Cultivation in Pakistan	2024 13(1): 23-24
3.	Prospects of Dragon Fruit cultivation in Pakistan	2023 12(2): 5-6
4.	Zeera ki Kasht	2023 12(1):11-12
5.	Jackfruit: A potential nutraceutical fruit crop	2023 12(1):8-9
6.	Guava wilt disease (GWD) in Punjab: status, causes and future prospects	2019 pp. 14-15
7.	Potential of in vitro clonal multiplication in Guava.	2015 pp. 12-13
8.	Doubled haploidization: A shortcut technology to develop pure lines for hybridization and other crop improvement programs.	2010 pp. 9
9.	Horticultural Biotechnology: A Potential Horizon Future Horizon in Pakistan	2008 pp. 8
10.	A futuristic approach to establishing healthy orchards. http://www.dailytimes.com.pk/default.asp?page=2013\01\20\story_20-1-2013_pg5_5	Daily Times Sunday, Jan. 20, 2013.
11.	Citrus development still a far cry. Economic and Business Review.	Dawn , March 14, 2005.
12.	Enhancing Mango Production.	The Nation, Feb. 17, 2002.
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13.	Gharelo baghbani, aik fun aik zaroorat	Zarai Digest, UAF. 2024, p. 32-33
14.	Pakistan main aam ki kasht: Aik jaiza.	2005, p. 49-52.
15.	Turshawa nursery ki kasht key liyey beej ki tiyari aur rootstock ki ahmiyat.	Sept. 2005, p.57-8
16.	Bimarion sey pak podon ki afzaish.	Sept. 2005, p.59-60
17.	Double Haploidy: Podon mein giniati yaksaniat key jald hasool ka mozonon tariqa	Dec. 2008, vol. 43(3-4) p.57-8
18.	Limon ka tuaraf, afadiat aur afzaish e nasal bazaria baft kari	April to June 2020 p. 40
19.	Gama rays ki tabkari sey citrus paidawari sulahiyyat mein behtri	April to June 2021 p. 47
20.	Gamma Irradiation: A Tool to Improve Citrus Genome	P. 3-4
21.	Khita Potohar mein Gul-e-Kaghaz ki pedawar	P. 38-40
22.	Pakistan mein Gerbera ki rawaiti pedawar	July to Sept 2021 p. 25-27
23.	Gulbahar aik khushnuma poda	April-June 2022 p. 61
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Urdu/English Broachers and Extension Articles (5)		Funded by different Agencies
24.	Germplasm Resources and Harvest Window (Citrus, Mango, Grapes and Peach)	PARB Project 2024
25.	Punjab mein Papita ki kasht aur dekhbhal	Papaya project 2019
26.	Amrood ki tissue culture nursery: Afaadiat aur Tariqa kar.	Guava Propagation project. 2016
27.	Turshawa phalon aur amrood ki sehatmand nursery uganey key liyey modle nursery ka kiam.	Citrus & Guava nursery project. 2014
28.	Amrood ki bimariyon sey pak nursery uganey key jadid tariquey.	-do- 2013

Research Ventures

Sr. No.	Post-Docs/ Degrees	Titles	Place	Year
1	HEC Fellowship	The molecular physiology of abiotic stress in potato	The James Hutton Inst., UK	2012-13
2	Commonwealth Fellowship	The role of Carotenoid Cleavage Products and Circadian Clock gene in controlling potato tuberization under heat stress	-do-	2010-11
3	Ph.D	<i>In vitro</i> regeneration and plastid transformation of high value crop plants	Nat. Inst. Biotech & Genetic Eng. (NIBGE), Fsd. & UAF.	2001-2007
4	M.Sc. (Hons.)	Somatic embryogenesis from vegetative & reproductive tissues of papaya (<i>Carica papaya</i> L.)	Inst. of Hort. Sci., UAF.	1996-98

NATIONAL & INTERNATIONAL TRAINING

COURSES/WORKSHOPS/CONFERENCES/SYMPOSIA/SEMINARS

Resource Person/Invited Speaker/Keynote Speaker (32)

Sr. No.	Year	Month	Title/ Role	Events	Organized by
1.	2025	Feb	Orientation	“Preparation of presentations” to B.Sc. (Hons.) Internship students	IHS-UAF
2.	2024	Jan	Invited Speaker	Seminar on “Mutation Breeding for Germplasm Diversification in Fruit Crops”	Dept of Agri. & Agribui. Manag. Karachi Uni. Karachi
3.		Feb	Orientation	“Preparation of presentations” to B.Sc. (Hons.) Internship students	IHS-UAF
4.		March	Resource Person	Seminar on “Breeding in Vegetable and Medicinal Crops for Germplasm Diversification and Sustainable Production”	IHS-UAF
5.		March	Resource Person	Int. webinar on “Advances in Breeding, Orchard Management and Certification Programs for Sustainable Citrus Production in Italy”	IHS-UAF and CREA-Italy.
6.		May	Resource Person	Major Selection Seminar	DFA, UAF.
7.		Nov	Invited Speaker	Symp. On Sci. & Tech. Innovations in Pummelo/grapefruit industry (19-20 Nov).	China
8.		Nov.	Guest Speaker	Int. Symposium on Henan Joint Int. Research Lab of South Asian Fruits and Cucurbits	China
9.	2023	Feb.	Oral Pres	7 th Int. Hort. Conf. Sustainable Horticulture: Challenges, Innovations and Adaptations	Dept. of Hort., MNSUA, Multan
10.		May	Resource Person	Major Selection Seminar	DFA, UAF.
11.	2022	Dec.	Invited Speaker	Int. Conf. on the Cooperation of Industry, Education, Research and Application	Office of Hong Kong, Macao, and Taiwan Affairs, Hainan Uni., CHINA
12.		Sept	Resource Person	The brief research status of Fruit Crops in IHS-UAF	Zhengzhou Fruit Research Institute (ZFRI), Zhengzhou CHINA and IHS-UAF
13.		Nov.	Resource Person	Overview of Horticultural Crops Germplasm Project (PARB 20-36) & Potential Areas of Collaborations	Guangxi Subtropical Crops Research Institute (GSCRI), Guangxi, CHINA and IHS-UAF
14.		Nov	Invited Speaker	Int. webinar on “New Approaches in Fruit Tree Breeding”	Hort. Dept. MNSUA, Multan
15.		June	Oral Pres.	7 th Int. Conf. on Climate Smart Agriculture: Innovations and Adaptations (15-17 June 2022),	Uni. of Poonch Rawalakot .
16.		March		“High Value Horticulture” in National Dialogue on Agri. Research -exploring the challenges, recent trends and novel technologies	NARC, Islamabad.
17.	2021	June	Resource Person	Hands on Training of Agricultural Scientists from Sindh on “Plant Tissue Culture”	ORIC and IHS, UAF & Govt. of Sindh
18.		Feb.	Oral Pres.	“Overview of the Conference and Recommendations” in Int. Hort. E-Conference	IHS, UAF.
19.		Aug	Resource Person	Online certificate course on “ Basic Plant Tissue Culture Techniques ”	Int. Centre for Chemical & Biol. Sci. (ICCBS) & Pak. Biotech. Info. Centre (PABIC), Karachi under OIC program
20.	2020	Feb.	Oral Pres.	“Plant responses to water stress in Guava (Psidium guajava L.)” in 5th Int. Conf. of Hort. Sci. Lahore.	Inst. of Agri. Sciences, Univ. of Punjab, Lahore (26-28 Feb, 2020)
21.	2019	March	Resource	Training on “Orchard Establishment and	IHS UAF, ORIC,

			Person	Management” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan, Faisalabad.</i>	UAF and Govt. of Baluchistan
22.	2018	Dec.	Resource Person	Training on “Value addition in Horticultural Crops” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan.</i>	IHS UAF, ORIC, UAF and Govt. of Baluchistan
23.		Dec.	Resource Person	Training on “Horticultural Nurseries” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan.</i>	IHS UAF, ORIC, UAF and Govt. of Baluchistan
24.		Dec.	Keynote Speaker	2 nd Int. Conf. on Plant Sciences	GCU, Lahore, Pakistan
25.		July	Oral Pres.	Project “Development and genetic characterization of haploid lines and polyploid germplasm for hybridization in elite guava strains”	ALP-PARC, Islamabad
26.		May	Invited Speaker	National Conf. on “Recent trends and opportunities to enhance citrus production & export”	Dept. of Hort. Sargodha Uni & HEC, Islamabad.
27.	2018	May	Resource Person & Trainer	Two weeks training on “Plant Tissue Culture” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan</i> ’	PTCC, IHS UAF, ORIC, UAF and Govt. of Baluchistan
28.	2014-2018	May	Oral Pres.	Project “Demonstration of in vitro clonal propagation system in elite guava cultivars”. In: <i>Annual Project Review Workshop</i>	USDA-Endowment Fund Sec., UAF.
29.	2017-2018	Jan	Orientation	Lecture on “Preparation of presentations” to B.Sc. (Hons.) Internship students	Inst. Of Hort., UAF
30.	2017	March	Master Trainer	Training workshop on “Internship and Career Development”	UCDAVIS & CAS UAF.
31.		March	Guava Expert	Agricultural Congress	UAF & Agri. Dept. Govt. of Punjab
32.		March	Resource Person	“Horticultural Nurseries” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan</i>	IHS UAF, ORIC, UAF and Govt. of Baluchistan
33.		Aug	Invited Speaker	“Role of potting media sterilization and managing a modern nursery” in one day Citrus Seminar	Citrus Res. Station (CRI) Sargodha under AIP- USAID.
34.	2016	March	Resource Person	“Horticultural Nurseries” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan</i>	IHS UAF, ORIC, UAF and Govt. of Baluchistan
35.		March	Resource Person & Trainer	Two weeks training on “Plant Tissue Culture” under ‘ <i>Capacity building of Agriculture Scientists from Baluchistan</i> ’	PTCC, IHS UAF, ORIC, UAF and Govt. of Baluchistan
36.	2013-2017, 2023-2024	March	Rep., IHS	Orientation to B.Sc. (Hons) Agri. students for awareness about <i>Major subject/degree program Selection</i>	Faculty of Agri., UAF
37.	2014	Jan	Resource Person	“Molecular techniques for improvement in horticultural crops” in two days training workshop “Molecular Approaches in Crop Improvement”	IHS & CABB, UAF.
38.	2012	Feb	Resource Person & Trainer	One-week training course for <i>Citrus Nurserymen.</i>	IHS, UAF & Benazir Income Sup. Prog. (BISP), Islamabad
39.		Feb	Resource Person	One-day training course for <i>Citrus Nurserymen</i>	IHS, UAF & Punjab Agri. & Meat Co. (PAMCO), Lahore
40.	2010	Jan	Presenter	“Germplasm development and crop improvement program at IHS, UAF- Pakistan”	Univ. deglie Studi di Palermo- Italy.
41.	2008	Nov	Invited Speaker	“In vitro culture: A promising track towards horticultural crop improvement” in “ <i>National Training Workshop on Role of Biotech. in Economic Dev. of Pakistan</i> ”	Govt. College of Agri. Sargodha Uni., Sargodha
42.		Nov	Resource Person	“Prospects of micropropagation in Nursery production” in <i>Premier Course on “Nursery Management”</i>	Pak. Soc of Hort. Sci., Inst. of Hort. Sciences, UAF
43.		April	Invited	“Role of plant tissue culture and biotechnology in	Hort. Foundation of

			Speaker	banana crop improvement' In: <i>National Conf. on Streamlining production and export of Banana</i>	Pakistan, Nat. Agri. Res. Council, Islamabad.
44.	2007	Sept	Resource Person	“Applications of Molecular techniques in Citrus crop improvement” National Training Workshop on “ <i>Production of Disease-Free Citrus Nursery Plants (Production, Certification and Challenges)</i> ”	IHS, UAF and MoST, Islamabad
45.	2005	Feb	Resource Person	“Plant Tissue Culture Techniques” In: National training course on <i>Integration of Modern Biotech. Tools with Conventional System of Crop Genetic Improvement</i>	Centre of Agri. Biochem. & Biotech. (CABB), U.A.F.

Participation in Conferences/Symposia/Webinars/Expos (52)

Sr. No.	Year	Month	Title	Held By
1.				
2.				
3.	2024			
4.				
5.		Oct	Commonwealth Networking Reception Globalization	British Council, Lahore
6.		June	Seminar on " Quality Assurance in Teaching and Research "	QEC-UAF
7.		April	National Conf. on Agri. Innovations towards Food Security: Challenges and Opportunities "	MNSUA, Multan
8.		April	2 nd Int. Conf. on Soil, Plant and Environmental Health under Changing Climate	MNSUA, Multan
9.		March	National Citrus Conf. on " Challenges in Citrus Production "	College of Agri., UA Sargodha
10.		March	Flower and Landscape Expo. 2024	IHS, UAF
11.		Feb	Int. Conf. on " Emerging Technologies for Crop Improvement in Pakistan"	PBG and CAS-UAF
12.		Feb	Int. Congress of soil science on " Soil Health: A key to Food Security "	PMAS Arid Agri. Uni. Rawalpindi
13.		Jan	Int. Seminar on "Potential and Opportunities in Sapte Irrigation "	MNSUA, Multan
14.			Int. Conf. on Cucurbits	ZFRI, China
15.	2023	March	Flower and Landscape Expo. 2023	IHS, UAF
16.		March	Int. Symp. on "Antimicrobial resistance crisis in COVID-19 landscape"	Inst. of Microbiology, GC Uni, Fsd.
17.		Feb	National Symposium on "Advances in Biotechnology: Towards circular Bioeconomy"	GCU, Fsd
18.		May	Int. training workshop on "In-silico Genomics of Soybean"	CABB-UAF
19.	2022	March	One day seminar and field day on " Propagation, Canopy Management Techniques and Ber Plant Distribution "	IHS, UAF
20.		Aug 22-23	Int. Conf. on Date palm and pomegranate: Current challenges, opportunities, and way forward	PSHS and Hort. Dept. MNSUA, Multan
21.		Oct.	Int. Webinar on " Fruit Breeding for Food Security: A Dire Need of Time "	Dept. of Hort., MNSUA, Multan
22.		Dec.	Annual Chrysanthemum Day	IHS, UAF
23.		Dec.	1 st Int. Webinar on " Italian Fruit Production Industry "	IHS-UAF and Res. Inst. Pomology, CAAS, China.
24.		Dec.	2 nd Int. Webinar on " Biology, epidemiology and control of Post-Harvest Diseases of Pome Fruits "	IHS-UAF and Res. Inst. Pomology, CAAS, China.
25.	2021	Feb.	Two days "Int. Horticulture e-Conference"	IHS, UAF
26.		June	Two days Int. seminar on "Recent Challenges & Prospects of Horticulture in Pakistan".	PMAS-Arid Agri. Univ., Rawalpindi
27.		June	Int. Webinar on " Greenhouse Horticulture: Current Status and Future Prospects "	Dept. of Hort., MNSUA, Multan
28.		July	Int. webinar " Strengthening potato industry through indigenous breeding program: Opportunities and Challenges "	IUB, UAF.
29.		Sept	One day seminar " Vegetable Grafting: A step towards organic production. "	IHS, UAF
30.		Oct.	World Food Day Webinar: Our actions are our future	COMSTECH, Islamabad and SAWIE
31.		Nov	Int. Conf. on " Phytopathology: Current scenario and future prospects A focused strategy for food safety and security "	Pak. Phytopath. Soc.

32.	Dec.	Two days' " Citrus Exhibition "	IHS, UAF
33. 2020	Feb.	One day seminar on " Organic Farming-Future Prospects and Challenges "	IHS, UAF.
34.	Oct	Citrus Genetics-Seedlessness and Greening Disease	Pak. Acad. of Sciences (PAS), Islamabad; Uni. of California , Riverside USA; Pak. Inst. of Dev. Economics, Islamabad; MNSUA, Multan; Huazhong Agri. Uni. China; PMAS Arid Uni, Rawalpindi, UAF.
35.	Nov.	Pakistan Academy of Sciences Agriculture Policy Debate on " Global impact of GM crops "	Pak. Acad. of Sciences (PAS), Islamabad; Forman Christian Coll. Uni; Pak. Biotech Info. Center (PBIC), Islamabad.
36.	Nov.	Pakistan Academy of Sciences Agriculture Policy Debate on " Vegetable seed production and supply chain "	Pak. Acad. of Sci. (PAS), Islamabad; Chinese Acad. of Agri. Sci. (CAAS), China; Chinese Acad. of Tropical Agri. Sci., China; Pak. Acad. Of Develop. Econ. (PIDE), Islamabad.
37.	Nov.	Potential of CRISPR/Cas Technology for improving agricultural productivity	Penn Stat Uni, USA; CAAS, China; Karlsruhe Inst. of Tech, Germany; Pak. Acad. of Sciences, Pakistan; UAF, Pakistan
38. 2019	July	One day Int. Seminar on Next Generation Chromatography and Flow Cytometry	Agri., Biotech, AARI, Faisalabad. Dept. of Forestry and USDA, EFS, UAF. PBG, UAF and PARB, Lahore IHS, UAF and USDA-EFS, UAF.
39.	June	Annual Programme of Research Work (2019-20) meeting	
40.	March	Seminar on Agroforestry on Problematic Soils in Faisalabad and Adjoining Districts	
41.		Int. Seminar on "Fodder Cultivation under the Scenario of Climate Change"	
42.	April	Conference on " Sustainable Urban Landscape "	
43. 2018	April	International Horticultural Conference , Pakistan	Dept. of Hort. PMAS Arid Agri. Uni. Rawalpindi.
44. 2017	Dec	"Annual Chrysanthemum and Autumn Flower Show 2017 "	AARI, Faisalabad. Revista Brasileira de Fruiticultura, BRAZIL. UCDAVIS-CAS, UAF. IHS, UAF.
45.	Oct	Seminar on " Role of HEC in promoting horticulture "	
46.	Oct	Annual Programme of Research Work (2017-18), Agri., Biotech Res. Inst.	
47.	Sept	'SIMPROFUITI' Int. Sym. on Advances in Fruit Propagation	
48.	Sept	Int. Seminar on " CRISPR/Cas based Genome Editing "	
49.	Sept	Seminar on " Recent research and developments in mango technologies in the world "	IHS, UAF.
50.	Aug	Int. seminar on " Coconut Palm Research in China "	
51.	March	Int. seminar on " Strawberry industry in Pakistan "	
52. 2016	Dec	One-day seminar on " Guava clonal propagation through soft-wood cuttings "	IHS, UAF.
53.	Dec	One-day seminar on " Establishment of Date palm germplasm unit "	IHS, UAF and USDA Endowment Fund Sec. UAF.
54.	Aug	Seminar on " Dissemination of Seed Production Technology of Vegetable Crops "	
55. 2015	May	One Day Seminar on " Capacity Enhancement in Biosafety Evaluation of GM crops ",	NIBGE, Faisalabad in collabo. with USDA.
56. 2014	May	Int. conference on Stress Biology: Challenges and Management	-do-

57.	2013	Nov	Seminar on Research and Developments in Mango Value Chains	IHS, UAF
58.	2012	May	Conference for Citrus Orchard Growers	NARC and IHS, UAF funded by HEC, AusAID and USDA.
59.	2011	Jan	The Redox Switch : cellular redox controls post-translational protein modification in plant immunity	Dr Steven Spoel, Univ. of Edinburgh, UK
60.		March	Discovering the complexities of plant cell wall biosynthesis: implications for biorefining and bioenergy	Prof. Paul Dupree, Univ. of Cambridge, UK
61.		Oct.	Initiation of activity for changing the mindset and capacity building regarding commercialization.	ORIC, UAF
62.	2010	Nov	Evolutionary diversification of phytoalexins of the Solanaceae	Dr Paul O'Maille, Inst. of Food Research, UK
63.	2008	Oct	Int. Symp. on ' Modern Approaches & Techniques in Agriculture to ensure food security ' in Pakistan	Faculty of Agri., UAF & HEC, Islamabad.
64.	2000	Nov	Int. Seminar on " New Horizons in the DNA Technology "	CABB, UAF

Participation in Training Courses/Workshops (55)

Sr. No.	Year	Month	Title	Held By
1.	2024	Jan	Training Workshop for "NAEAC Program Evaluators"	NAEAC, HEC, Islamabad.
2.		June	Training workshop on "Demonstration of Vegetable Seed Production Technology to Stakeholders"	MoST-Islamabad and IHS-UAF
3.		Oct	Int. Training workshop on Citrus, "Prospects of Citrus Production: Challenges and opportunities"	IHS-UAF and HEC, Islamabad
4.				
5.				
6.	2023	Oct	Two days workshop on "Molecular Biology in Forensic Science: From sampling to data processing"	CABB-UAF
7.		Oct	Networking reception "Navigating the Mind: Exploring mental health and well being commonwealth alumni and scholars, Pakistan"	British Council, Pakistan.
8.		May	One Day Workshop on "Post-harvest management strategies for Better shelf life of papaya"	IHS, UAF and HEC, Islamabad
9.		May	One Day Workshop on "Pre-harvest management guidelines for papaya"	IHS, UAF and HEC, Islamabad
10.		April	"Fundamentals of Flow Cytometry Course 1: Flow Cytometry Basics	Bio-Rad Academy.
11.		March	Training workshop for Good Agricultural Practices for Citrus	College of Agri. Sargodha and PHDEC, Islamabad.
12.		March	Training on capacity building for papaya promotion and cultivation in Punjab.	Hort. Res. Inst. AARI, Fsd.
13.		March	" Roundtable on Climate Change "	British Council , Islamabad.
14.	2022	March 24-25	Int. workshop on " Diversification, value addition and supply chain management of floriculture industry"	IHS, UAF
15.		May 23-27	2 nd National Hands-on Training on CRISPR/Cas-mediated Genome Editing	CAS, UAF
16.		Aug 16-17	Training on "3D landscapes Designing"	IHS, UAF
17.		Dec.	One day training workshop on " Aflatoxin Biocontrol : An innovative approach"	CABI, USDA, USAID & ENTO UAF
18.		Dec.	One day Int. workshop on " Climate change adaptation in Agriculture "	D8 Turkey & CAS-AFS, UAF
19.	2021	Sept.	CATAS-UAF workshop on Tropical Agriculture S&T Co-operation	Coconut Res. Inst. CATAS China and IHS, UAF
20.		Oct.	First national date palm stakeholder meeting and date festival	IHS, UAF
21.		Dec.	Two days' " Citrus Exhibition "	IHS, UAF
22.		Feb.	One day workshop on " Establishment of Papaya Nursery "	USDA, EFS, UAF.
23.		Oct.	Training course on " HEC digital library collections for your next scholarly research "	Proquest Education and HEC, Islamabad
24.		Oct.	How to manage your references using RefWorks	ProQuest Education and HEC, Islamabad
25.	2019	Dec.	One day workshop on " Establishment of Papaya Orchard "	USDA, EFS, UAF.

26.	July	Three days' workshop on "PEEDA Act 2006" for Officers of Punjab Government held at MPDD, Lahore	MPDD, GOP Lahore
27.	March	Training on "Olives and High Value Crops"	BARI, Chakwal
28.	April	Two days' workshop on "CRISPR/Cas genome editing technology"	CEMB, Lahore
29.	Feb	One day workshop on "Meadow Orchard System in Guava"	IHS, UAF and USDA-EFS, UAF.
30.	Feb	One day workshop on "Papaya Production Technology"	IHS, UAF and USDA-EFS, UAF.
31. 2018	Oct	Best orchard management practices to improve Kinnow fruit quality	IHS, UAF.
32.	June	Two Days Training of Presiding Officers and Sr. Assistant Presiding Officers-GE 2018	UNDP, Pakistan
33.	April	One day Workshop on "Fruit Tree Value Assessment"	IHS, UAF, Hort. Res Inst. AARI, Fsd. and USDA-EFS, UAF.
34.	March	Training on "Bioassays for exploration of bioactives"	Dept. of Biochem., UAF.
35.	Jan	Int. Workshop on "Developing Vegetable Seed Industry"	IHS, UAF.
36. 2017	Oct	Best orchard management practices to improve Kinnow fruit quality	UCDAVIS-CAS, UAF. IHS, UAF.
37.	Sept	Int. Training Workshop on "CRISPR/Cas based Genome Editing"	
38.	March	Int. workshop on "Value Addition of Floriculture"	
39.	March	Seminar on "Career preparation Workshop"	UCDAVIS-CAS, UAF. ORIC, UAF.
40.	Feb	Two days Capacity building workshop on "Biosafety Measures in Agriculture"	
41. 2016	Oct	One-day workshop on "Strategic use of digital Technology in University Instruction"	US-PCAS and UCDAVIS faculty at UAF.
42. 2015	Sept	Two-day workshop on "Applications of Bioinformatics in Genomics"	US-PCAS and UCDAVIS faculty at UAF.
43.	March	One-day workshop on "Use of Bioinformatics in High Throughput Sequencing, Genomics, Proteomics and Transcriptomics"	
44. 2014	April	Int. Training Workshop on "Microarray for Gene Expression"	Centre of Excellence in Mol. Biology (CEMB), Lahore.
45. 2013	Oct	Workshop on Biotechnology in Horticultural Crops	IHS, UAF
46. 2012	May	One-day Workshop on 'Pre-harvest and post-harvest technology of selected fruits in Horticulture' held by EFS, UAF.	IHS and EFS, UAF
47. 2011	March	Training course on Using Reference Manager	ADEPT, Scientific, Dundee, UK
48. 2010	Jan	Training on "Cytofluorimetry, Microspore Isolation and Male gamete development for ploidy analysis"	Dipartimento S.EN.FI.MI.ZO., Facolta di Agraria, University degli Studi di Palermo-Italy.
49. 2008	Nov	National workshop on 'Role of Biotechnology in economic development of Pakistan'	Govt. College of Agri. Sargodha Uni.
50.	May	Workshop on 'Role of Medicinal plants in poverty alleviation' under University –Industry-Interaction Project of Higher Education Commission	IHS, UAF.
51.	April	National training course on 'Integration of Biotechnology and Conventional Techniques for Crop Improvement'	Centre of Agri. Biochem. & Biotech (CABB), UAF.
52. 2002	Dec	Teacher's Training workshop	Faculty of Agriculture, U.A.F.
53. 2002	Jan	National Training Course on 'Integration of Biotechnology and Conventional Techniques for Crop Improvement'	CABB, UAF
54. 2002	Jan	One Month English language course for GRE preparation	Division of Education and Extension, U.A.F.
55. 2001-2002		One Month Training Instructions in Effective Teaching	-do-
56. 1998	Dec	Applications of Biotechnology in Agriculture	CABB, UAF

57.	1996	Sept	Two weeks TOEFL Preparation Course	Faculty of Agriculture, UAF.
58.	1996	Sept	Two weeks English Creative Writing Course	-do-
59.	2018	July	Two days training as Presiding officer , Election	Election Commission of Pakistan
60.	2008	July	Two days training as Presiding officer , Election	-
61.	1988-1990	-	Two years training course by National Cadet Corps , Pakistan.	-

ORGANIZATION OF CONFERENCES/WORKSHOPS/SEMINARS/SYMPOSIA/EXPOS/CURRICULA AND COMMUNITY SERVICES (77)

Sr. No.	Date	Role	Event
1.	2025		
2.			
3.	2024 Jan	Convenor	Exhibition Committee, Citrus Growers Workshop at Chak No. 332 Jhakra, Pir Mahal.
4.	Feb	Co-Chair	Technical Session III: Int. Hort. Conf. & Expo, IU Bahawalpur (Feb 26, 2024).
5.		Member	Date palm pollination committee, IHS-UAF.
6.		Member	Auction committee Kinnow firewood, Inst. of Hort. Sciences, UAF.
7.		Convenor	Display of Hort. technologies at Agri. Expo 2024 UAF.
8.	March	Convenor	Int. Webinar on “Advances in breeding, orchard management and certification programs for sustainable citrus production in Italy ”
9.		Convenor	National Seminar on “Breeding in vegetable and medicinal crops for germplasm diversification and sustainable production”
10.	May	Member	Poster presentation committee, Int. Conf. on Biodiversity and Biosafety, Faculty of Agriculture, UAF.
11.		Convenor	Student internship evaluation committee, IHS-UAF
12.	June	Member	Technical evaluation committee, UAF for framework contract for the procurement of chemicals, glassware, plasticware etc.
13.		Convenor	Departmental QEC committee, IHS-UAF.
14.	Oct	Convenor	2 nd National seminar on “Introduction of exotic fruit crops for germplasm diversification and sustainable production”, IHS-UAF and Collaborators (MRI, Multan; CRI, Sargodha; BARI, Chakwal; MNSUA, Multan; VRI, Faisalabad)
15.		Convenor	
16.	2023 Feb	Co-chair	Technical Session-VIII: Horticulture Marketing, Entrepreneurship and Digitalization in 7 th Int. Hort. Conf. held by Dept of Hort. MNSUA, Multan.
17.	Feb	Focal Person	Faculty of Agriculture Stall at Spring Festival, 2023.
18.	Feb	Member	Date palm pollination committee, IHS-UAF
19.	Feb	Convenor	IHS Stall at Spring Festival, 2023.
20.	March	Member	Comments on National Horticulture Policy of Pakistan developed by PHDEC, Islamabad.
21.	April	Member	Planning to develop uniform rates of the analytical labs of UAF held by ORIC-UAF.
22.	May	Member	Meeting committee with Precision Agriculture and Analytical lab. (PAAL), Tissue Culture Labs. Gen. Tahir Aslam MD (FonGrow), Multan.
23.	May	Convenor	“Annual project review workshop” under PARB project # 20-36 “Import of high value germplasm and technologies of elite exotic fruits, vegetables and medicinal crops for diversification and sustainable production in Punjab” held by IHS, UAF.
24.	June	Coordinator	Internship certificate courses Inst. of Hort. Sciences, UAF.
25.	Nov	Convenor	Review Committee, 4 th BRI Sino-Pak Agri. Forum 2023 “Sustainable Agriculture for Economic Prosperity and Food Security” (Nov. 09-10, 2023)
26.	Nov.	Focal Person	Technical Session Horticulture, 4 th BRI Sino-Pak Agri. Forum 2023 “Sustainable Agriculture for Economic Prosperity and Food Security” (Nov. 09-10, 2023)
27.	Dec	Convenor	Int. online workshop on Germplasm Resources of Mango and Other Fruit Crops in Hainan-China and Punjab-Pakistan
28.	2022 Dec.	Member	Organizing committee for three days Int. Training Workshop on “ Modern Fruit Production Techniques ”
29.	Dec.	Member	Organizing committee One day Int. Webinar on “ Biology, epidemiology, and control of orchard diseases of Pome fruits ” in collaboration with Research Inst. of Pomology (RIS), CAAS, China .

30	Dec.	Convenor	Organizing committee International Meeting with Chinese collaborators on “Opportunities for Collaboration in Horticulture” of Zhengzhou Fruit Research Institute, Zhengzhou, China held by IHS, UAF under PARB project 20-36.
31	Dec.	Convenor	Organizing committee National Seminar on “ Germplasm Diversification of Fruit Crops ” held by IHS, UAF under PARB project 20-36.
32	Nov.	Convenor	Organizing committee International Meeting with Chinese collaborators on “ Germplasm Resources of Sub-tropical Fruit Crops in Punjab-Pakistan and Guangxi-China ” of Guangxi Subtropical Crops Research Institute (GSCRI), Guangxi, China held by IHS, UAF under PARB project 20-36.
33	Nov.	Member	Organizing committee One day Int. Collaborative Workshop on Opening Ceremony of “ China-Pakistan Horticulture Research and Demonstration Centre (CPHRDC) ” with Huazhong Agri. Univ., Huazhong, China.
34	Nov	Member	Tender committee
35	Nov	Convenor	Second Online meeting with national collaborators for project progress under PARB # 20-36.
36	Oct	Member	Organizing committee One day Int. Collaborative Seminar on “Opportunities for Collaboration in Horticulture Research” with Huazhong Agri. Univ. , Huazhong, China.
37	Sep	Member	Organizing committee training workshop on “ Watermelon and Chilli grafting and locally developed media for nursery raising of cucurbits and chilli ” held by IHS, UAF.
38	March	Convenor	Horticulture Stall, IHS, UAF at Spring Festival , Expo Centre held by UAF.
39	2021	Feb.	Convenor Promotion and Publication Committee, Int. Hort. E-Conference held by IHS, UAF.
40	March	Member	Organizing committee One day training course on “ Red Palm Weevil control in Date Palm ” held by IHS, UAF.
41	June	Focal Person	Hands on Training of Agricultural Scientists from Sindh on “ Plant Tissue Culture, Poly Tunnel Farming and Value Addition of Horticultural Crops ” organized by ORIC and IHS, UAF.
42	Aug	Member	Training workshop on “ Watermelon and chilli grafting and locally developed media for nursery raising of cucurbits and chilli ” held by IHS, UAF
43	Nov	Member	IHS stall, Guava Festival 2021 at Sharqpur, Lahore held by TDCP,
44	Dec.	Member	Two days’ workshop on “ Citrus Exhibition Workshop ” IHS, UAF.
45	Dec.	Focal Person	Int. Webinar on “ Plant Biotechnology in Horticulture ”, IHS, UAF
46	2020	Jan	Convenor Horticulture Stall, IHS, UAF in Pak. Hort. Expo 2020 to be held by Agri. Dept. Govt. of Punjab, Lahore (Jan. 22-23).
47	Jan	Member	IHS stall, Guava Festival 2020 at Sharqpur, Lahore
48	April	Member	Experts committee on Quick Decline Disease in Guava formulated by DG Agri. Research, Punjab.
49	2019	Sept	Co-Chair Technical Session 1, 1st Int. Conf. on Hort. Crop Production and Protection 19 th -20 th Sept. 2018 held by Uni. of Sargodha , Sargodha.
50	Sept	Convenor	Paper setting committee for Ph. D Entry Test
51	Dec	Member	Horticulture MCQs Booklet Committee , IHS, UAF.
52	July	Member	
53	June	Focal Person	
54	June	Convenor	Punjab Agri. Expo. 2019 , Expo centre Lahore.
55	April	Convenor	Internship Report Evaluation Committee , IHS, UAF.
56	March	Organizer	Training on “ Orchard Establishment and Management ” under ‘Capacity building of Agriculture Scientists from Baluchistan, held by IHS and ORIC, UAF.
57	Jan	Member	IHS stall, Guava Festival 2020 at Sharqpur, Lahore
58	Feb	Member	Organizing committee for One day workshop on “ Papaya Production Technology ” held by IHS, UAF and USDA-EFS.
59	2018	Dec	Convenor IHS, UAF stall, Guava Festival 2019 at Sharqpur, Lahore
60	Dec	Co-Chair	Technical Session, National Conf. on “ Recent trends and opportunities to enhance citrus production & export ” Dept. of Hort. Sargodha Uni & HEC, Islamabad.
61	Nov	Member	Organizing and accommodation committees, Training on “ Horticulture Nursery Production and Management ” under ‘Capacity building of Agriculture Scientists from Baluchistan, held by IHS and ORIC, UAF.
62	Nov	Convenor	Organizing and Poster committee, First Annual IHS Post-grad students Research Symposium , 2018.
63	Sept	Convenor	Paper setting committee for Ph.D. Entry Test

63	2015-2018	July	Member	Student internship evaluation committee
64		April	Member	Organizing committee for One day Workshop on “Fruit Tree Value Assessment” held by IHS, UAF in collaboration with Research Inst. (AARI, CRI, MRI)
65		Feb	Member & Secretary,	Organizing Committee in training workshop on “Plant Tissue Culture” under the project ‘Capacity building of Agriculture Scientists’ from Baluchistan held by ORIC, UAF.
66		Jan	Member	Organizing committee for Int. Hort. Conference: “Pak Horticulture: Strategies for sustainable production and export” organized by IHS, UAF and Dept. of Agri., Punjab.
67	2017	Sept	Member	Organizing committee for Seminar and Exhibition on HEC 15-year Celebrations at IHS, UAF.
68		Sept	Member	Organizing committee for Seminar on Recent Research and Development in Mango technologies in the World held in the IHS, UAF.
69	2011-2017	March	Convener	Organizing Committee Spring Kissan Mela , University of Agriculture, Faisalabad.
70	2016	Dec	Member	Organizing committee for Seminar on Clonal propagation of guava through softwood cuttings funded by PARB held in the IHS, UAF.
71		Dec	Member	Organizing committee for Seminar on Date palm germplasm collection funded by EFS held in the IHS, UAF.
72		Oct	Member	Organizing tender committee to organize video documentary and construct mist unit for PARB funded project on Clonal propagation of guava through softwood cuttings.
73	2011-2016	Oct	Convener	Organizing Committee Rabi Kissan Mela , University of Agriculture, Faisalabad.
74		April	Coordinator	Arrangement of stalls for Pak. Scientific & Tech. Information Centre (PASTIC) for literature and online databases.
75		Feb	Member & Secretary	Organizing Committee in training workshop on “Plant Tissue Culture” under the project ‘Capacity building of Agriculture Scientists’ from Baluchistan held by ORIC, UAF.
76		Feb	Member	Hall Management and Printing and Publication Committees, in training workshop on “Plant Tissue Culture” under the project ‘Capacity building of Agriculture Scientists’ from Baluchistan held by ORIC, UAF.
77		Feb	Convener	Banner Committee in 2nd Int. Conference on Horticultural Sciences , UAF.
78		Feb	Member	Member, Fund Raising and Exhibition/Expo Committees in 2nd Int. Conference on Horticultural Sciences , UAF.
79	2014	Jan	Member & Secretary	Organizing Committee in workshop on “Molecular Approaches in Crop Improvement” held by IHS and CABB, UAF.
80	2012	Sept	Member	Member, Annual Program of Research Work Plan 2012-2013 , Ayub Agri. Research Institute (AARI), Faisalabad.
81		July	Member	Member, student internship evaluation committee
82		June	Convenor	Advertisement and Communication committee of seminar entitled: “Controlled and Modified Atmosphere Technology for Fruits and Vegetables” held by Inst. Of Horticultural Sciences, UAF.
83		June	Dept. Rep.	Represented Horticulture Institute in workshop on Option for Branding of Kinnow through use of Intellectual Property (IP) Instruments held by Industries, Commerce and Investment Department, Govt. Of Punjab.
84		June	Member	Curriculum development committee for the initiation of Multidisciplinary Ph.D. degree in Ecology.
85		May	Member	One day Workshop on Pre-harvest and post-harvest technology of selected fruits in Horticulture held by EFS, UAF.
86			Member	Accommodation Committees, conference for Citrus Orchard Growers held by NARC and IHS, UAF funded by HEC, AusAID and USDA.
87			Member	Team for Trouble Shooting Citrus Decline for Vehari, Khanewal and Multan.
88		April	Member	Workshop on “Developing Annual Work plan of Punjab Agriculture and Meat Company (PAMCO) for year 2012-13.
89			Member	Experimental Fruit Gardens Auction Committee , Inst. of Hort. Sciences, UAF.
90		March		Convener, Organizing Committee Spring Festival stall, University of Agriculture, Faisalabad.
91	2011	Dec	Member	Workshop on Intellectual Property Rights (IPRs) management in Pakistan and Establishment of IPR Office at UAF Held by ORIC, UAF.
92		Oct	Member	National workshop on “Sea-Freight Technology” under national initiative on mango sea-freighting (NIMS), held by IHS, UAF funded by MoST, Islamabad.
93	2007	Sept	Member	National Training Workshop on “Production of Disease-Free Citrus Nursery Plants (Production, Certification and Challenges)” held by IHS, UAF funded

94	2004	April	Member	by MoST, Islamabad. Int. Conf. on Citriculture held by Hort. Foundation of Pakistan, Islamabad in coll. with IHS, UAF and Hort. Res. Inst. (HRI), AARI, Fsd.
95	2002	May	Member	First National Citrus Seminar of STED Project on “Establishment of a Modern Citrus Nursery of Certified Plants through Sanitation Technique” held by Dept. of Hort., UAF and Min. of Sci. & Tech. (MoST), Islamabad.

AWARDS AND APPRECIATION LETTERS/CERTIFICATES (21)

- 2024 2nd Position in Poster Presentation in Int. Conf. on Biodiversity and Biosafety held by Faculty of Agriculture, UAF in collaboration with MoST, Islamabad, USDA and PKNC, UAF.
- 2024 Active participation in Int. Hort. Conference and Horti-Expo South Punjab at Islamia Uni. Bahawalpur.
- 2018 Participation as “**Keynote Speaker**” in 2nd Int. Conf. on Plant Sciences 5th-7th Dec. 2018 held by GC Uni. Lahore.
- 2018 Certificate of appreciation by **ORIC, UAF** on winning ALP 2018 project.
- 2017 Appreciation letter on contribution in 101-Innovations catalogue: Technologies for Commercialization, by **ORIC, UAF**.
- 2015 Appreciation certificate for significant participation in Kissan Mela by Dean, Faculty of Agri., UAF.
- 2014 Appreciation and feedback letter on the USDA-UAF endowment funded Citrus and Guava Nursery Project theme, progress and published book and other literature by **Director, Citrus Research Institute, Sargodha**.
- 2014 Appreciation and feedback letter on the USDA-UAF endowment funded Citrus and Guava Nursery Project theme, progress and published book and other literature by **Director, Horticulture Research Institute, AARI, Faisalabad**.
- 2014 Appreciation and feedback letter on the USDA-UAF endowment funded Citrus and Guava Nursery Project theme, progress and published book and other literature by **Director, MAK-Green Nursery, Sadiqabad**
- 2013 Dr. Mark Taylor (Group Leader, Cell and Molecular Sciences-CMS Department) for excellent contributions in research during Higher Education Commission (HEC), funded post-doctoral studies in The James Hutton Research Institute (JHI), **Dundee, UK**
- 2011 Dr. Mark Taylor (Group Leader, Plant Products and Food Quality-PPFQ Department) in recognition of excellent contributions in research work conducted during Commonwealth Post-Doc fellowship studies in JHI, **Dundee, UK**
- 2010 For delivering a lecture and getting training in plant ploidy analysis and microspore isolation and *in vitro* cultures by Dr. Germana, Associate Professor, Dipartimento S.EN.FI.MI.ZO. Sezione Frutticoltura Mediterranea, Tropicale e Subtropicale, Facolta di Agraria, University degli Studi di Palermo-**Italy**.
- 2009-2010 Appreciation certificate for services as Advisor Printing and Publication Committee, Pakistan Soc. of Hort. Sciences, UAF.
- 2007 For excellence in research by Principal Scientist/Accredited Ph.D. Supervisor, Biotech Interdisciplinary Division (BID), **National Inst. Biotech. & Genetic Eng. (NIBGE), Faisalabad**.
- 2007 Associate Prof. & In-charge, Plant Tissue Culture and Biotechnology Lab., HEJ Research Center, **Karachi University, Karachi**.
- 2007 **Project Director**, Citrus Sanitation Project, for excellence in work as Co. Project Director funded by Min. of Science and Tech. (MoST), Islamabad.
- 2007 **Dean, Faculty of Agriculture, UAF** on successful completion of Ph.D. in Horticulture-Plant Biotechnology
- 2007 **Controller Examinations, UAF** on successful completion of Ph.D. in Horticulture-Plant Biotechnology
- 2005 Appreciation certificate for rendering excellent **services in establishment of sub-campus/Technology transfer/on-farm research**, UAF sub-campus Toba Tek Singh.
- 2002-2004 Appreciation of letter for **excellence in review** of national and international research papers from Editor in Chief, Int. J. of Agriculture and Biology (IJAB), UAF.
- 2002 **Directorate of Research, UAF**, for the article entitled: ‘*Enhancing Mango Production*’ published in Daily *the Nation* dated: Feb. 17, 2002
- 1996 **Merit Certificate** for achievement in Creative English Writing Course held by Dean Faculty of Agriculture, Instructor Luana Nelson Warner (USA)
- 1996 **Merit Certificate** for achievement in TOEFL preparation course held by Dean Faculty of Agriculture,

Instructor Dr. L. Lamar Adams (USA)

POST GRADUATE STUDENT SUPERVISION

Role	Ph.D.		M.Sc. (Hons) Agri./M.Phil.	
	Current	Produced	Current	Produced
Major Supervisor	2	3	9	75
Co-Supervisor/ Committee member	5	3	18	85
Supervised Research	-	-	-	10
Total	7	6	27	170
Grand Total				210

Ph.D Students Produced:

Sr. No.	Name	Reg. No.	Thesis Title	Supervisor/ Member Committee	Sup.	Year
1	Monis Hussain Shah	2009-ag-509	Morphogenetic Characterization of Guava (Psidium guajava L.) cultivars against Fungal Wilt.	Supervisor		2019
2	M. Awais Rana	2011-ag-4026	Morpho-physiological, biochemical and genetic characterization of mutant germplasm in grapefruit (Citrus paradisi Macf.)	-do-		2024
3	Arooge Fatima	2011-ag-3352	Pheno-physiological, biochemical and genetic characterization of mutant germplasm in Acid Limes	-do-		2024
4	M. Sarwar Yaqub	89-ag-1265	Molecular diagnosis, control and identification of tolerance in Citrus against greening (Huanglongbing)	Member		2016
5	M. Usman	2003-ag-1857	Morphogenetic Characterization of Mutants and Polyploids of Grapefruit	-do-		2021
6	Fahim Khadija	2001-ag-2582	Morphological and genetic characterization in cucumber polyploids	-do-		2024
7	S. Anum M. Bokhari	2015-ag-428	Morpho-physiological, biochemical and genetic characterization of polyploid germplasm in guava (Psidium guajava L.)	-do-		2023
8	Iqra Summan	2009-ag-3010	Developing Optimal Propagation and Vernalization Protocols for LA hybrid Lilium Using Various Propagules	-do-		2024

ADMINISTRATIVE/ADVISORY AND CO-CURRICULAR ASSINMENTSDec 2024 **Director**, Directorate of Outreach, UAF.**Technology Transfer and R&D Projects****Principal Investigator/Project Manager**

May 2022	Import of High Value Germplasm and Technologies of Elite Exotic Fruits, Vegetables and Medicinal Crops for Diversification and Sustainable Production in Punjab (PARB 20-36)
July 2021 to date	Establishing Phenological and Genetic Responses to Seasonal Shifts in Guava (Psidium guajava L.) Germplasm
2017-2020	Morphological and genetic characterization of haploids and polyploids for hybridization in Elite Guava strains
2016-2020	Morphological and genetic characterization of Grapefruit haploids, polyploids and mutants for germplasm enhancement.
2013-2017	Guava Clonal Propagation Project funded by USDA, Endowment Fund Sec., UAF.

- 2011-2013 Citrus and Guava Nursery Project funded by USDA, Endowment Fund Sec., UAF.
Co-Principal Investigator/Director/Team Scientist
- July 2018 Polyploidization and Morphogenetic Characterization in Acid Lime (*C. aurantifolia* L.)”
- Jan-2017 Policy Paper on High Value crops (Guava and Strawberry): Constraints and opportunities funded by USPCAS and PARB.
- 2005-2006 “Establishment of a Modern Citrus Nursery of Certified Plants through Sanitation Techniques” funded by Ministry of Sci. & Tech. (MoST), Islamabad-Pakistan

Officer Incharge Labs. and Experimental Research Areas

- 2024 Plant Tissue Culture Cell, IHS-UAF.
- 2016 to 2023 Co-Incharge, Plant Tissue Culture Cell, IHS, UAF.
- 2003, 2007 Plant Tissue Culture Cell, IHS, UAF.
- 2022 IHS Rotational Officer (18-10-2021 to 24-10-2021)
- 2011 to date Guava nursery sanitation project, IHS, UAF.
- 2013 to 2024 Experimental Fruit Garden, Sq. 9, IHS, UAF.
- 2002-05, 09-10 Fruit Plant Nursery, IHS, UAF.
- 2011-12 Citrus Nursery Sanitation Lab. & Project, Inst. of Hort. Sci, UAF.

Other Administrative and Advisory Assignments

- 2024 Deputy Superintendent, First and second entry tests (July-Aug, 2024), BATI Rawalpindi.
- 2023 Annual Program of Research Work (2023-2024) of Agri-Biotech Research Inst. (ABRI), AARI, Fsd.
- 2023 Feedback on **National Horticulture Policy of Pakistan** developed by PHDEC, Islamabad.
- 2022 **Member** QEC committee, Univ. of Agriculture, Faisalabad.
- 2022-25 **Convenor**, OBE-QEC committee, Faculty of Agriculture, UAF.
- 2022-25 **Convenor**, Quality Enhancement and Evaluation Committee, IHS, UAF.
- 2022-25 **Advisor**, B.Sc. (Hons) Agri. students of Faculty of Agriculture, UAF.
- 2022-23 Evaluation of program SAR of IHS by QEC assessment team.
- 2021-23 Dean’s nominee for PEEF, PEF, HEC Need and other Master students’ scholarships, 2021-2023.
- 2023 **Chairman**, board of examiners Ph.D comprehensive examination Oral-Part.
- 2022-23 Member, Technical Evaluation Committee for “**Framework contract** for Purchase of Chemicals, Glassware and Plasticware etc.” UAF
- 2023 **Convenor**, dead stock auction committee IHS-UAF.
- 2018-2023 Member, fruit orchards auction committee, IHS-UAF
- 2021-2024 Member, annual **physical verification** committee for stock and stores directorate of CABB, UAF.
- 2021 **Supervisor**, written test for Election Officer (BPS-17), held by Regional Election Commissioner/Chief Superintendent Fsd. Division, Faisalabad at UAF (07-03-2021).
- 2021 Course development for SINO-PAK Diploma on Plant Tissue Culture
- 2018 Member **Interview Committee**, PEEF Master Students scholarships (2017-18)
- 2018, 2019 **Focal Person-Horticulture**, Punjab Agri. Expo. 2019, Expo Centre Lahore.
- 2016 to date **Officer Incharge Exhibition/Stalls**, Inst. of Hort. Sciences, UAF.
- 2016 **Coordinator**, outreach and industry linkage, pomology section, IHS, UAF.
- 2012-17 Member different **Procurement committees** for different projects funded by PARB, HEC and different departments (IHS, PBG, SST)
- 2015-16 Member **Procurement committees** and installations of teaching equipment funded by UAF in IHS.
- 2015-16, 2023-2024 **Deputy Superintendent & Invigilator** entry test exam for 1st degree program admissions.

2002-04; **Officer Incharge Short courses:** Advanced Mali class
 2011, 2019
 2009 Member **Registration committee** 56th Alumni Meet
 2015-16
 2000 to date **Tutor**, Mega Tutorial Group, Rashad Minhas II/Group 120, UAF.

Community/Outreach Services

Nov. 2022-23 Ten days **Wheat Campaign** in Distt. Faisalabad.
 2021-2022 **Convener, First and Second Guava Festival, Sharaqpur**, held by TDCP-Pakistan under Agri-Tourism project.
 2018 Recorded Educational **TV Program** on “**Basics of Plant Tissue Culture Technology**” for Allama Iqbal Open Univ., Islamabad.

Internal/External Examiner

2020-23 MCQs preparation **GAT/GRE** regarding M.Sc. and PhD program
 2020-23 MCQs preparation **GAT** regarding M.Sc. (Hons)
 2020 **External Examiner**, Post-grad thesis, College of Agri., Univ. of Sargodha.
 2021-23 **External Examiner** M.Sc. (Hons) Hort. Thesis Sargodha Uni, Sargodha (1) and Islamia Uni. Bahawalpur (7)
 2024 **VC nominee** for 04 Ph.D students Oral Exams
 2023 **VC nominee** for 04 Ph.D students Oral Exams
 2021 **VC nominee** for 01 Ph.D student Oral Exam. NIFSAT, UAF.
 2023 Member, board of examiners of 01 Ph.D student written and oral exams
 2016-2024 Examiner, **Ph.D. Comprehensive Examinations**
 2023-2024 Convenor Postgraduate **Seminar Evaluation Committee**
 2008, 2021/23 Member Postgraduate **Seminar Evaluation Committee**
 2023-2025 Convenor Undergrad **Student Internship Presentation Committee**
 2008, 13, 2022 Member Undergrad **Student Internship Committee**

Reviewer/Member DTRC & SAR Review Committees

2022 **Reviewer**, Final Technical Reports of IHS projects under M&E system of ORIC, UAF.

Member Departmental Tenure Review Committee (DTRC) & SAR for evaluation of Faculty

Members of different Universities
 2024 03 Assoc. Professors SAR on TTS in Dept. of Horticulture, **MNSUA, Multan.**
 2023 02 Assoc. Professors SAR on TTS in **IHS-UAF.**
 2023 01 Assistant Prof. on TTS in Dept. of Horticulture, **MNSUA, Multan.**
 2022-23 04 Assistant Prof. on TTS in Dept. of Horticulture, **MNSUA, Multan.**
 2021 02 Assistant Prof. on TTS in Dept. of Horticulture, **BZU, Multan.**
 2020-21 **NRPU and TDF Research Project** Proposals HEC, Islamabad-Pakistan.
 2019 **R&D and Technology Transfer Project proposals** Agri. Linkage Program (ALP), Pakistan Agri. Research Council, Islamabad.
 2018 **Reviewer**, Practical Manuals (Hort-702 Citriculture, Hort-302, Production of Fruits)
 2017,
 2016 **Monograph proposals** for Post-grad students, **Higher Education Commission** (HEC), Islamabad.
 2015 to date **R&D and Technology Transfer Project proposals** USDA Endowment Fund Secretariat, UAF.

Referee/Editor

2024	Section Editor, Journal of Agriculture and Food
2023	Journal of Plant and Soil Open Journal of Plant Science
2022	Journal of Applied Research on Medicinal and Aromatic Plants
2021	HortScience Genetic Resources and Crop Evolution
2019-2022	Journal of Hort. Science and Biotechnology (JHSB)
2019-2022	InTech Open
2019	Journal of Animal and Plant Sciences (JAPS)
2016	Science Int. Journal
2012	Turkish Journal of Botany (TJB)
2012 to date	Biologia
2011	Journal of Plant Breeding and Crop Science (JPBCS)
2004 to date	<i>Pakistan J. Agri. Sciences (PJAS)</i>
2004 to date	<i>Int. J. Biol. & Biotech. (IJBB)</i>
2002 to date	<i>Int. J. Agri & Biol. (IJAB)</i>

ADVISORY SERVICES

2011	Uni. representative Society of Experimental Biology, UK.
2011	Commonwealth Fellows, Punjab Chapter, British Council, Pakistan.
2011	Member interdepartmental post-graduate course revision committee.
2009-2010	Advisor Printing and Publication Committee Pakistan Soc. of Horticultural Sciences (PSHS), IHS, University of Agriculture, Faisalabad.
2004 to 2006	Citrus Orchard Management, <i>Technology Transfer Program of University of Agriculture</i> , Faisalabad for Toba Tek Singh.
2004 to date	Member advisory board for Citrus growers, Pakkissan.com
2003-2004	Member, organizing committee for Internship Tours of Foreign Delegates from <i>Sultan Qaboos University, Oman</i> .
2000 to date	Fruit and vegetable growers of Punjab regarding layout of the commercial orchards, production, pest and disease management.

TEACHING AND ADVISING**Courses Offered****Postgraduate**

Plant Tissue Culture (Hort-708), Fruit Breeding (Hort-705), Advances in Fruit Production (Hort-703), Vegetable Breeding, Horticulture Seed Science, Citriculture, Rootstocks (Hort-701), Nursery Management of Horticultural Crops (**SST-705**)

Undergraduate

Basics of Plant Tissue Culture (Hort-308/508), Breeding of Horticultural Crops (Hort-403/603), Vegetable and Flower Seed Production, Plant Propagation and Nursery Management, Principles of Fruit Production, Principal Horticultural Practices and Introductory Horticulture

Courses Developed

2022 SINO-PAK Agriculture Diploma Course developed: "Plant Tissue Culture & Techniques" for UAF and Bailie Vocational College Vocational Technical Joint Education Program Cooperation.

MEMBERSHIPS

Learned Societies

2011 to date	Society of Experimental Biology (SEB), Glasgow, UK
2009 to date	International Society of Hort. Sciences (ISHS), Belgium
2005-2009	International Society of Citrus Nurserymen (ISCN), USA
2002 to date	Horticulture Foundation of Pakistan
2000 to date	Pakistan Society of Horticultural Sciences
2007-08	Pakistan Botanical Society
2003-2004	Pakistan Association for Advancement of Science

Academic, Social and Grower Associations

2011 to date	Association of Commonwealth Universities, UK.
2011 to date	British Council Alumni Association, Punjab Chapter, Pakistan
2012 to date	Pakistan Agriculture and Dairy Farms Association (PADFA), Pakistan
1998 to date	Gardener's Club, Faisalabad.
2019 to date	Academic Council, UAF.
1999 to date	Academic Staff Association and Alumni Association, UAF.
1999 to date	Board of Academic Studies, Institute of Horticultural Sciences, UAF.
1999 to date	Staff Club, UAF.
2001 to date	Agrarian Society, Faculty of Agriculture, UAF.

REFEREES

1. Prof. Dr. Ahmad Sattar Khan

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Sultan Qaboos University, Sultanate of Oman.
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4. Prof. Dr. Mark Taylor

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5. Prof. Dr. M. A. Germana

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