

### 个人简介:

李珂, 男, 汉族, 中共党员, 1992年5月出生, 河北邯郸人。

2022年6月毕业于西北农林科技大学果树学专业, 获农学博士学位, 同年11月至今, 于河北工程大学园林与生态工程学院任教。以第一作者身份在学术期刊发表5篇SCI论文和1篇中文核心; 此外, 共参与发表学术论文30余篇, 获授权国家发明专利2项。主持国家青年科学基金项目1项, 河北省青年科学基金项目1项; 作为参研人参与国家苹果产业技术体系岗位项目、国家重点研发计划子课题项目、陕西省留学人员科技活动择优资助项目和“仲英青年学者”项目。



担任河北工程大学果树逆境生理研究中心办公室主任; 内丘县果树种植技术指导顾问; 山西省吉县特色农产品及文旅融合“品牌共创官”; 农业产业高质量发展博士工作站“进站指导专家”。

### 研究方向:

苹果发育生物学与矮砧集约高效栽培技术。主要包括: 苹果砧木不定根发育与调控机制; 苹果转基因; 苹果砧木育种。

### 发表学术论文:

Li K, Tian H, Tahir MM, Li S, Chen S, Fan L, Liu, ZM, ; Mao, JP& Zhang D\*. (2022). Transcriptome analysis reveals that cytokinins inhibit adventitious root formation through the MdRR12-MdCRF8 module in apple rootstock. *Plant Science*, 318, 111220.

Li K, Tian HY, Mao JP, Khan A, Tahir, MM, Li SH, Chen SY, Shao Y, Zhang D\*. (2022). Effect of darkness treatment on the morphology, hormone status and gene expression of development adventitious root in apple rootstock. *Plant Cell, Tissue and Organ Culture (PCTOC)*, 1-16.

Li K, Wei H, Wang RH, Mao JP, Tian HY, Chen SY, Li SH, Tahir MM, Zhang, Dong\*. (2021). Mdm-MIR393b-mediated adventitious root formation by targeted regulation of MdTIR1A expression and weakened sensitivity to auxin in apple rootstock. *Plant Science*, 308, 110909.

Li K, Liu Z, Xing LB, Wei YH, Mao JP, Meng Y, Bao L, Han MY, Zhao CP, Zhang D\*. (2019). miRNAs associated with auxin signaling, stress response, and cellular activities mediate adventitious root formation in apple rootstocks. *Plant Physiology and Biochemistry*, 139, 66-81.

Li K, Liang Y, Mao J, Liu Z, Dong F, Meng Y, Han MY, Zhao CP & Zhang D\*. (2018). Transcriptome analysis reveals multiple hormones, wounding and sugar signaling pathways

mediate adventitious root formation in apple rootstock. *International journal of molecular sciences*, 19(8), 2201.

李珂, 刘桢, 雷超, 左超然, 董凤, 孟媛, 毛江萍, 韩明玉, 张东\*. (2018). 苹果全基因组 CRF 家族成员鉴定及在不定根发育过程中的表达分析. *园艺学报*, 45(4), 627-640.

Mao JP, Niu CD, Li K, Fan L, Liu ZM, Li SH, Ma DD, Tahir MM, Xing LB, Zhao CP, Ma JJ, An N, Han MY, Ren XL & Zhang D\*. (2022). Cytokinin-responsive MdTCP17 interacts with MdWOX11 to repress adventitious root primordium formation in apple rootstocks. *The Plant cell*, 35(4), 1202-1221.

Tahir MM, Tong L, Fan L, Liu Z, Li S, Zhang X, Li K, Shao Y, Zhang D\* & Mao J\*. (2022). Insights into the complicated networks contribute to adventitious rooting in transgenic MdWOX11 apple microshoots under nitrate treatments. *Plant, Cell & environment*, 45(10), 3134–3156.

Mao J, Ma D, Niu C, Ma X, Li K, Tahir MM, Chen S, Liu X, & Zhang D\*. (2022). Transcriptome analysis reveals the regulatory mechanism by which MdWOX11 suppresses adventitious shoot formation in apple. *Horticulture Research*, 9, uhac080.

Zuo X, Xiang W, Li K, Liu Y, Zheng S, Khan A, & Zhang, D\*. (2022). MdGRF11, a growth-regulating factor, participates in the regulation of flowering time and interacts with MdTFL1/MdFT1 in apple. *Plant Science*, 321, 111339.

Tahir MM, Mao JP, Li SH, Li K, Liu Y, Shao Y, Zhang D,\* & Zhang XY\*. (2022). Insights into Factors Controlling Adventitious Root Formation in Apples. *Horticulturae*, 2022, 8, 276.

Tahir MM, Li S, Mao J, Liu Y, Li K, Zhang X, Lu X, Ma X, Zhao C, Zhang D\*. (2021). High nitrate inhibited adventitious roots formation in apple rootstock by altering hormonal contents and miRNAs expression profiles. *Scientia Horticulture*, 286, 110230.

Mao J, Niu C, Li K, Chen S., Mobeen Tahir, M., Han, M, Zhang, D\*. (2020). Melatonin promotes adventitious root formation in apple by promoting the function of *MdWOX11*. *BMC Plant Biology*, 20(1), 1-11.

Mao JP, Niu CD, Li K, Tahir MM, Khan A, Wang H, Li S, Liang Y, Li G, Yang Z, Zuo L, Han M, Ren X, An N, Zhang D\*. (2020). Exogenous 6-benzyladenine application affects root morphology by altering hormone status and gene expression of developing lateral roots in *Malus hupehensis*. *Plant Biology*, 22(6), 1150-1159.

Wang H, Tahir M, Nawazb A, Mao J, Li K, Wei Y, Ma D, Lu X, Zhao C, Zhang, D\*. (2020). Spermidine application affects the adventitious root formation and root morphology of apple

rootstock by altering the hormonal profile and regulating the gene expression pattern. *Scientia Horticulturae*, 266, 109310.

Meng Y, Xing L, **Li K**, Wei Y, Wang H, Mao J, Dong F, Ma D, Zhang Z, Han M, Zhao C, Tahir M, Zhang D\*. (2019). Genome-wide identification, characterization and expression analysis of novel long non-coding RNAs that mediate IBA-induced adventitious root formation in apple rootstocks. *Plant Growth Regulation*, 87, 287-302.

Mao J, Zhang D, Zhang X, **Li K**, Liu Z, Liu X, Meng Y, Lei C, Han M\*. (2018). Inhibition of adventitious root development in apple rootstocks by cytokinin is based on its suppression of adventitious root primordia. *Physiologia Plantarum*, 166(2), 663-676.

Lei C, Fan, S, **Li, K**, Meng, Y, Mao, J, Han, M, Zhao, C, Bao, L, Zhang, D\*. (2018). iTRAQ- Based Proteomic Analysis Reveals Potential Regulation Networks of IBA-Induced Adventitious Root Formation in Apple. *International Journal of Molecular Sciences*, 19(3), 667.

Mao J, Zhang D, **Li K**, Liu Z, Liu X, Song C, Li G, Zhao C, Ma J, Han M\*. (2017). Effect of exogenous Brassinolide (BR) application on the morphology, hormone status, and gene expression of developing lateral roots in *Malus hupehensis*. *Plant Growth Regulation*, 82, 391-401.

Mao J, Zhang D, Zhang X, **Li K**, Liu Z, Liu X, Meng Y, Lei C, Han M\*. (2018). Effect of exogenous indole-3-butanoic acid (IBA) application on the morphology, hormone status, and gene expression of developing lateral roots in *Malus hupehensis*. *Scientia Horticulturae*, 232, 112-120.

Chen HF, Shao HX, **Li K**, Zhang D, Fan S, Li Y, Han MY\*. (2017). Genome-wide identification, evolution, and expression analysis of GATA transcription factors in apple (*Malus × domestica* Borkh.). *Gene*, 627, 460-472.

Bao, L, **Li, K**, Teng, Y, Zhang, D\*. (2017). Characterization of the complete chloroplast genome of the wild Himalayan pear *Pyrus pashia* (Rosales: Rosaceae: Maloideae). *Conservation Genet Resources*, 9, 569-571.

Bao L, **Li K**, Liu Z, Han M, Zhang D\*. (2016). Characterization of the complete chloroplast genome of the Chinese crabapple *Malus prunifolia*, (Rosales: Rosaceae: Maloideae). *Conservation Genetics Resources*, 8, 227-229.

韦燕红, 刘桢, **李珂**, 孟媛, 汪蕙, 毛江萍, 马豆豆, 李少欢, 马娟娟, 卢显, 张东\*. (2020). 苹果 *miR396* 家族鉴定及在不定根发育过程中的表达分析. *园艺学报*, 47(7):1237-1252.

获授权国家发明专利:

张东, 毛江萍, 韩明玉, **李珂**, 宋春晖, 刘祯. 一种提高苹果转基因材料再生效率的方法. CN106857245A.

韩明玉, 毛江萍, 张东, **李珂**, 宋春晖, & 刘祯. 一种抑制平邑甜茶侧根发育的方法. CN106577218 A.

**主持和参与课题:**

1、国家青年科学基金项目“苹果 MdAGR 与 MdRR12 互作介导生长素运输调控不定根发生的分子机制”，2024.01-2026.12，主持人。

2、河北省青年科学基金项目“苹果 MdRR12 结合 MdSHY2 启动子介导生长素运输调控不定根发生的分子机制”，2023.01-2025.12，主持人。

3、河北工程大学青年博士科研启动基金，主持人。

4、国家苹果产业技术体系“苗木繁育与栽培方式”岗位（CARS-27），2016-2025，参与。

5、国家重点研发计划子课题“苹果无病毒苗木繁育”（2019YFD1000803），2019-2022，参与。

6、“仲英青年学者”项目，2017-2020，参与。

7、陕西省留学人员科技活动择优资助项目“细胞分裂素抑制苹果砧木不定根发生的机制”（2020-07），2021-2023，参与。

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