

Dr. Dinesh Pandey

Associate Professor

Research papers (in chronological order)

1. **Dinesh Pandey**, Anil Kumar and G. K. Garg. 2001. Antagonism between *Alternaria brassicae* toxin and zeatin in cell culture of *Brassica juncea* (L.) czern and coss cv. Divya. *Physiology and Molecular Biology of Plants*, 7 (2):181-184.
2. Mihir K. Mandal, **Dinesh Pandey**, Shalini Purwar, U.S. Singh and Anil Kumar. 2006. Influence of jasmonic acid as potential activator of induced resistance against Karnal bunt in developing spikes of wheat. *Journal of Biosciences* 31(5):607-627.
3. Arpita Mishra, **Dinesh Pandey**, Anshita Goel, Anil Kumar (2010) Molecular Cloning and *In silico* Analysis of Functional Homologues of Hypersensitive Response Gene(s) Induced During Pathogenesis of *Alternaria* Blight in Two Genotypes of *Brassica*. *J. Proteomics Bioinform* 3: 244-248.
4. Arpita Mishra, **Dinesh Pandey**, Manoj Singh and Anil Kumar. 2011. Involvement of *hsr203J* like gene homologue, protease and protease inhibitors in triggering differential defense response against *Alternaria* blight in *Brassica Australasian Plant Pathology* (2011): 40 (5),461-470 .
5. P. Kannan, **Dinesh Pandey**, A.K.Gupta, H.Punetha, Gohar Taj and Anil Kumar. 2011. Expression analysis of MAP 2K 9 and MAP K 6 during pathogenesis of *Alternaria* blight in *Arabidopsis thaliana* ecotype Columbia. *Molecular Biology Reports*. 39,4, 4439-4444.
6. **Dinesh Pandey**, Anil Kumar, H. Punetha, K.C. Bansal and G.K. Garg. 2012. *Agrobacterium* mediated transformation of *Brassica juncea* with *Arabidopsis* annexin (*AnnAt1*) gene. *Int. J.Agric. Env. Biotech.* 5 (1) : 1-9.
7. Anil Kumar, **Dinesh Pandey**, Gohar Taj, K. C. Bansal and G. K. Garg. 2001. Perceptions about Apoptosis in fungal phytopathogenesis. *J. Pant Biol.* 28 (1): 1-12.
8. N. K. Sethy, **Dinesh Pandey**, U.S.Singh and Anil Kumar. 2003. Caspase-3 like protein in wheat-*Tilletia indica* dual culture system as potential biomarker for host resistance to Karnal bunt. *Indian Journal of Biotechnology*, 2, 596-602.
9. J.M.Seneviratne, Atul K. Gupta, **Dinesh Pandey**, Indu Sharma and Anil Kumar. 2009. Determination of Genetic divergence based on DNA markers amongst monosporidial strains derived from fungal isolates of Karnal bunt of wheat. *Plant Pathol. J.* 25 (4) : 303-316.
10. Gohar Taj, Leena Singh, **Dinesh Pandey**, Anil Kumar, K. C. Bansal and G. K. Garg (2007) Perturbation of signal transduction pathway to develop resistance against *Alternaria* blight in *Brassica juncea* (Indian Mustard). *Science Letters*, 4 (1) :61-71.

11. Shefali Dobhal, **Dinesh Pandey**, Anil Kumar and Sanjeev Agrawal.2010. Studies on plant regeneration and transformation efficiency of *Agrobacterium* mediated transformation using neomycin phosphotransferase II (*nptII*) and glucuronidase (GUS) as a reporter gene *African Journal of Biotechnology* 9(41), 6853-6859.
12. Sriparna Dutt, **Dinesh Pandey**, Anil Kumar. 2011. Jasmonate Signal Induced Expression of Cystatin Genes for Providing Resistance against Karnal Bunt in Wheat . *Plant Signaling & Behaviour*. 6 (6) 821 – 830.
13. Anshita Goel, Gohar Taj, **Dinesh Pandey**, Sanjay Gupta and Anil Kumar. 2011.Genome wide comparative *in silico* analysis of Calcium transporters of Rice and Sorghum. *Genomics Proteomics Bioinformatics*, 9 (4-5) : 138-150.
14. **Dinesh Pandey**, Anil Kumar, H. Punetha, K.C. Bansal and G.K. Garg. 2012. *Agrobacterium* mediated transformation of *Brassica juncea* with *Arabidopsis* annexin (*AnnAt1*) gene. *Int. J.Agric. Env. Biotech.* 5 (1) : 45-52
15. Marmath KK, Giri P, G, Sharma S, **Pandey D**, Kumar A. Induction of MAPK- 4 during zeatin- *Alternaria Brassicae* challenge in host, non-host and tolerant transgenic brassica against alternaria blight and *In-Silico* prediction of its upstream kinases. *J Nat Sc Biol Med* 2011;2:119.
16. K. Kumar Marmath, P. Giri, G. Taj, **D. Pandey** and A. Kumar. 2013. Effect of zeatin on the infection process and expression of MAPK-4 during pathogenesis of *Alternaria brassicae* in non-host and host *Brassica* plants. *African journal of Biotechnology*. 12(17), 2164-2174.
17. Gohar Taj, Sugandha Sharma, Priyanka Giri, **Dinesh Pandey**, Anil Kumar. 2013.*In silico* approaches for studying the MAP kinase signaling pathways involved in resistance against Alternaria blight of *Brassica*. In Stress signaling in plants : genomics and proteomics perspective, Volume I Sarwat, Maryam; Ahmad, Altaf; Abdin, MZ (Eds.), 233p.
18. Atul K. Gupta, G.K. Joshi, J.M.Seneviratne, **Dinesh Pandey** and Anil Kumar. 2013. Cloning, in silico characterization and induction of TiKpp2 MAP kinase in *Tilletia indica* under the influence of host factor(s) from wheat spikes. *Mol. Biol. Rep.* (doi:10.1007/s11033-013-2597-0)
19. S. Purwar, S. Sundaram, **D. Pandey** & A. Kumar (2013): Basal expression of abscisic acid inducing immunity against Karnal bunt of wheat, *Plant Biosystems - An International Journal Dealing with all Aspects of Plant Biology: Official Journal of the Societa Botanica Italiana*, DOI:10.1080/11263504.2013.793752.
20. Manoj Singh, Sadhna Singh, **Dinesh Pandey**, Pramesh Chandra Lakhera & Anil Kumar , Food and Agricultural Immunology (2014): Generation of diagnostic anti-teliospore antibodies for development of specific immunodiagnostic format for detection of Karnal bunt (*Tilletia indica*) of wheat, *Food and Agricultural Immunology*, DOI: 10.1080/09540105.2013.873020

21. G.S.Jeena, H.Punetha, O.Prakash, **Dinesh Pandey** and K.P.S. Kushwaha. 2013. Investigation on nutritional characterization and element profiling of some *Pleurotus* species (Dingri Mushroom). *Pantnagar Journal Of Research*. 11(3): 405-408.
22. Shefali Dobhal , V.K. Chaudhary, A. Singh, **Dinesh Pandey**, Anil Kumar and Sanjeev Agarwal. 2013. Expression of recombinant antibody (single chain antibody fragment) in transgenic plant *Nicotiana tabacum* cv. Xanthi. *Mol Biol Rep* (2013) 40:7027–7037
23. B. Kalyana Babu , **Dinesh Pandey** , P. K. Agrawal, Salej Sood and Anil Kumar. 2014. In-silico mining, type and frequency analysis of genic microsatellites of finger millet (*Eleusine coracana* (L.) Gaertn.): a comparative genomic analysis of NBS–LRR regions of fingermillet with rice. *Mol Biol Rep*: DOI 10.1007/s11033-014-3168-8.
24. Pathak RK, Taj G, **Dinesh Pandey**, Arora S, Kumar A. 2013. Modeling of the MAPK machinery activation in response to various abiotic and biotic stresses in plants by a system biology approach. *Bioinformation*; 9(9): 443-449.
25. Lalan Kumar, **Dinesh Pandey**, Sandeep Taumer, Priyanka Giri and Anil Kumar (2014) Plant Immunity: A New Paradigm Of Broad Spectrum Disease Resistance In Plants, IJAEB
26. B. Kalyana Babu, P.K. Agarwal **Dinesh Pandey**, Anil Kumar (2014) Comparative genomics and association mapping approaches for *opaque2* modifier genes in finger millet accessions using genic, genomic and candidate gene based SSR markers. *Molecular Breeding*, DOI: 10.1007/s11032-014-0115-2.
27. B. Kalyana Babu, **Dinesh Pandey**, P.K. Agarwal, S. Sood, C. Chandrashekara, J.C. Bhatt and Anil Kumar (2014) Comparative genomics and association mapping approaches for blast resistant genes in finger millet accessions using genic and genomics SSRs. *PLoS ONE* 9(6): e99182. doi:10.1371/journal.pone.0099182
28. B. Kalyana Babu, **Dinesh Pandey**, P.K. Agarwal, J.P. Jaiswal, Anil Kumar(2014) Association mapping of important agro-morphological characters among the global collection of finger millet genotypes using SSR markers. *Molecular Biology Reports* , 41 : 5287-5297
29. Anil Kumar, Ajay Goyal, Anshita Goel & **Dinesh Pandey**.2014. Seed Pro-Nutra Care: A tool for characterization of seed storage proteins and database of bioactive peptides having potential health benefits. *Bioinformation* ,10(9): 592-594
30. S. Garg, **D. Pandey**, G. Taj, A. Goel, A. Kumar. 2014. TRIPATH: A Biological Genetic and Genomic Database of Three Economically Important Fungal Pathogen of Wheat–Rust: Smut: Bunt. *Bioinformation* 10 (7), 466.

31. B. K. Babu, P. K. Agrawal, **D. Pandey**, S. Sood, C. Chandrashekara and A. Kumar. 2014. Molecular analysis of world collection of Finger millet accessions for Blast disease resistance using functional SSR markers. *SABRAO Journal of Breeding and Genetics*. 46 (2) 202-216, 2014
32. A. Mishra, **D. Pandey**, H. Punetha, R. Prabhusankar, A. K. Gupta, G. Taj & A. Kumar. 2015. Expression analysis of MAP K 4 and MAP K 6 during pathogenesis of *Alternaria* blight in susceptible and tolerant genotypes of *Brassica juncea*. *Eur J Plant Pathol*. 142 (3) : 633-643.
33. Subin Raj Cheri Kunnimal Rajendran, Yuan-Yeu Yau, **Dinesh Pandey**, and Anil Kumar. 2015. CRISPR-Cas9 Based Genome Engineering: Opportunities in Agri-Food-Nutrition and Healthcare. *OMICS A Journal of Integrative Biology*. 19 (5) :261-275.
34. Anil Kumar, Rajesh Kumar Pathak, Sanjay Mohan Gupta, Vikram Singh Gaur and **Dinesh Pandey**. 2015. System Biology for smart crops and Agricultural innovation : Filling the gaps between genotype and phenotype for complex traits linked with robust agricultural productivity and sustainability. *OMICS : Journal of Integrative Biology*, 19 (10) : 581-601.
35. H Punetha, **Dinesh Pandey**, Pooran Bhatt, Heena Sagar, B Rawat. 2015. Biochemical Investigation on Antioxidative and Antinutritional Characters of Yellow Seeded Brassica Genotypes for Quality Assessment. *International Journal of Agriculture, Environment and Biotechnology*. 8(2): 253-264
36. D. Jeena, M. Baunthiyal, **Dinesh Pandey** and A.K. Gupta. 2015. ATMPK4 and ATMPK6 Transcript and Protein Profiling in *Arabidopsis thaliana* Plants Challenged with Zeatin and *Alternaria brassicae*. *Plant Pathology Journal* 14 (3): 97-112.
37. Gohar Taj, P.D. Meena, Priyanka Giri, **Dinesh Pandey**, Arvind Kumar and Anil Kumar. 2015. Pathogenesis mechanisms employed by *Alternaria* species. *Journal of Oilseed Brassica*, 6 (2): 213-240.
38. **Pandey, D**, Rajendran, S.R.C.K., Gaur, M. and A. Kumar. 2016. Plant Defense Signalling and responses to necrotrophic fungal pathogens. *J Plant Growth Regul*. doi:10.1007/s00344-016-9600-7
Pandey, D., Rajendran, S.R.C.K., Gaur, M. et al. *J Plant Growth Regul* (2016) 35: 1159.
39. Rakesh Mondal, **Dinesh Pandey**, Gohar Taj and Anil Kumar. 2016. Reciprocal relationship between expression of MAP Kinase 4 and MAP Kinase 6 during pathogenesis of *Alternaria* Blight in *Arabidopsis thaliana*. *Biotech Today* 6 (1) : 60-64.
40. Rajesh Kumar Pathak, Gohar Taj, **Dinesh Pandey**, Virendra Kumar Kasana, Mamta Baunthiyal and Anil Kumar. 2016. Molecular modeling and docking studies of phytoalexin(s) with pathogenic protein(s) as molecular targets for designing the derivatives with anti-fungal action on *Alternaria* spp. of *Brassica*. *Plant Omics Journal* 9(3):172-182

41. Sood S, Kumar A, Kalyana Babu B, Gaur VS, **Pandey D**, Kant L and Pattnayak A (2016) Gene Discovery and Advances in Finger Millet [*Eleusine coracana* (L.) Gaertn.] Genomics—An Important Nutri-Cereal of Future. *Front. Plant Sci.* 7:1634. doi: 10.3389/fpls.2016.01634
42. Anil Kumar Apoorv Tiwari Rajesh Kumar Pathak Gohar Taj A.K. Tewari **Dinesh Pandey** B.R. Singh Sandeep Arora and N.K. Singh. 2017. Addressing the complexity of Stress Biology through Hi-throughput Omics Data Analysis using Bioinformatics Tools: A National Bioinformatics Workshop Report. *International Journal of Computational Bioinformatics and In Silico Modeling* 6, 1 : 906-910
43. Kumar A, Pandey V, Singh M, **Pandey D**, Saharan MS, Marla SS (2017) Draft genome sequence of Karnal bunt pathogen (*Tilletia indica*) of wheat provides insights into the pathogenic mechanisms of quarantined fungus. *PLoS ONE* 12(2): e0171323. doi:10.1371/journal.pone.0171323
44. Pathak RK, Baunthiyal M, Shukla R, **Pandey D**, Taj G and Kumar A (2017) *In Silico* Identification of Mimicking Molecules as Defense Inducers Triggering Jasmonic Acid Mediated Immunity against *Alternaria* Blight Disease in *Brassica* Species. **Front. Plant Sci.** 8:609.
45. Kumar, L., **Pandey, D.**, & Kumar, A. (2017). Isolation, characterization and expression analysis of a nutritionally enhanced α -prolamin gene and protein during developing spikes of finger millet (*Eleusine coracana*). *Seed Science Research*, 1-11. doi:10.1017/S096025851700023X
46. Snigdha Tiwari, **Dinesh Pandey**, Manu Gaur and Anil Kumar. 2017. Effect of Methyl Jasmonate on Disease Severity and Expression of Plant Defensin Gene during *Alternaria brassicae* Infection in *Arabidopsis*. *Int.J.Curr.Microbiol.App.Sci* 6(7): 857-865
47. **Dinesh Pandey**, H Punetha, Anil Kumar. 2017. Annexin Signaling in Plants. **Biotech Today**, 7(1) : 52-57.
48. Anoop Singh, Mridula Sharma, Shiv Prasad, Yaqoob Bhat, Anil Kumar, **Dinesh Pandey**, SK Shukla. 2017. Effect of Butylated Hydroxytoluene on Acrosome Integrity and Viability of Crossbred Bull Spermatozoa. **International journal of Livestock Research.** 7(7) : 82-91
49. Pandey V, Singh M, **Pandey D**, Marla S, Kumar A. 2018. Secretome Analysis Identifies Potential Pathogenicity/Virulence Factors of *Tilletia indica*, a Quarantined Fungal Pathogen Inciting Karnal Bunt Disease in Wheat. **Proteomics** 18(8):e1700473. <https://doi.org/10.1002/pmic.201700473>.
50. Pandey V, Singh M, **Pandey D**, Kumar A. 2018. Integrated proteomics, genomics, metabolomics approaches reveal oxalic acid as pathogenicity factor in *Tilletia indica* inciting Karnal bunt disease of wheat. **Scientific Reports** 8(1):7826. <https://doi:10.1038/s41598-018-26257-z>.

51. Manu Gaur, Apoorv Tiwari, Ravendra P. Chauhan, **Dinesh Pandey** and Anil Kumar. 2018. Molecular modeling, docking and protein-protein interaction analysis of MAPK signalling cascade involved in Camalexin biosynthesis in *Brassica rapa* . **Bioinformatics** 14(4): 145
52. Pathak, R.K., Baunthiyal, M. **Dinesh Pandey** and Kumar A. 2018. Augmentation of crop productivity through interventions of omics technologies in India: challenges and opportunities. **3 Biotech** 8:454, <https://doi.org/10.1007/s13205-018-1473-y>
53. VS Gaur, S Kumar, L: Gupta, JP Jaiswal, **Dinesh Pandey**, A Kumar. 2018. Identification and characterization of finger millet OPAQUE2 transcription factor gene under different nitrogen inputs for understanding their role during accumulation of prolamin seed storage protein. **3Biotech**. 8(3): 163.
54. Pandey, V., Gupta, A.K., Singh, M. **Dinesh Pandey** and Anil Kumar. 2019. Complementary Proteomics, Genomics approaches identifies potential pathogenicity/virulence factors in *Tilletia indica* induced under the influence of host factor. *Sci Rep* **9**, 553 doi:10.1038/s41598-018-37810-1.
55. Rini Joshi, Meenu Paul, Anil Kumar and **Dinesh Pandey**. 2019. Role of calreticulin in biotic and abiotic stress signalling and tolerance mechanisms in plants. *Gene*. 714 : 14404. <https://doi.org/10.1016/j.gene.2019.144004>
56. Jyoti Kumari, H.Punetha, Gohar Taj, A.K. Tewari and **Dinesh Pandey**. 2018. Probing the involvement of protease and protease inhibitors during disease progression of Alternaria Blight of *Brassica* . *Biotech Today* 8 (2) : 75-79.
57. H.Punetha, Neha Sajwan and **Dinesh Pandey**. 2018. Phytochemical evaluation and assessment of potential nutrients from defatted meal of promising genotypes of *Brassica juncea* (Indian mustard). *Biotech Today* 8 (2) : 33-36.
58. H.Punetha, Syed Saif N and Dinesh Pandey. 2019. Glucosinolates in oilseed *Brassica*: Nutraceuticals with tremendous Health Benefits. *Biotech Today* 9(2) 26-32.
59. Ajay K Chandra, **Dinesh Pandey**, Apoorv Tiwari, Divya Sharma, Aparna Agarwal, Salej Sood and Anil Kumar. 2020. An Omics Study of Iron and Zinc Homeostasis in Finger Millet: Biofortified Foods for Micronutrient Deficiency in an Era of Climate Change?. *OMICS A journal of Integrative Biology*. 24 (12) :688-705
60. Kavita Gururani, , Anil Kumar, , Apoorv Tiwari, Aparna Agarwal, Supriya Gupta and **Dinesh Pandey**. 2020. Transcriptome wide identification and characterization of regulatory genes involved in EAA metabolism and validation through expression analysis in different developmental stages of finger millet spikes. *3 Biotech* 10, 347.
61. Rajesh K. Pathak, Mamta Baunthiyal, **Dinesh Pandey** and Anil Kumar. 2020. Computational analysis of microarray data of *Arabidopsis thaliana* challenged with

Alternaria brassicicola for identification of key genes in *Brassica*. *Journal of Genetic Engineering and Biotechnology*. 18 (1) :1-20.

62. Rajeev Kumar, H.Punetha and **Dinesh Pandey**. 2020. Polymerase chain reaction (PCR) based cloning of Mitogen activated protein kinase (MAPK3) in expression vector for isolation and purification of MAPK3 protein. *Biotech Today* 10(1) : 7-11.
63. Ajay Kumar Chandra, **Dinesh Pandey**, Apoorv Tiwari, Kavita Gururani, Aparna Agarwal, Anupam Dhasmana, Anil Kumar. 2021. Metal based nanoparticles trigger the differential expression of key regulatory genes which regulate iron and zinc homeostasis mechanism in finger millet. *Journal of Cereal Science* (100)103235 p
64. Kavita Gururani, Salej Sood, Anil Kumar, **Dinesh Pandey**, Dinesh Joshi, AR Sharma.2021. Mainstreaming Barahnaja cultivation for food and nutritional security in the Himalayan region. *Biodiversity and Conservation*.pp 1-24.
65. Sneha Adhikari, Anjali Joshi, Amarjeet Kumar, N.K.Singh, J.P.Jaiswal, A.S.Jeena, R.P.Singh and **Dinesh Pandey**. 2022. Identification of QTL for Banded leaf and sheath blight in Teosinite derived maize population. *Agriculture Research*. 11 (2), 155-163.
66. V Sharma, AK Verma, P Sharma, **Dinesh Pandey**, M Sharma. 2022. Differential proteomic profile of X-and Y-sorted Sahiwal bull semen. *Research in Veterinary Science* 144, 181-189.
67. C Bahuguna, D Arya, **Dinesh Pandey**, AK Verma, M Sharma. 2022. Protein profile of serum and urine during early pregnancy in sahiwal cows. *Indian Journal of Animal Sciences* 92 (5), 570-57.
68. VP Kapale, C Patel, AK Verma, RM Srivastava, **Dinesh Pandey**, MK Nautiyal, Sanjeev Agarwal. 2022. Effect of seed priming with salicylic acid and methyl jasmonate on germination and primary root length of cowpea genotypes. *The Pharma Innovation Journal* SP-11(6): 2085-2088.