**Supplementary Material: Reference list citing the PhaseolusGenes Molecular Marker Database**

(by topic in Fig. 1, in chronological order within topic) (Google Scholar: 2008-2023)

**General description and potential links**

Gepts, P.; Lin, D. Development of Phaseolusgenes, a genome database for marker discovery and candidate gene identification in common. Cooperative 2010, 30.

Osorno, J.M.; McClean, P.E. Common bean genomics and its applications in breeding programs. Legumes in the omic era 2014, 185-206.

González, A.M.; Yuste-Lisbona, F.J.; Fernández-Lozano, A.; Lozano, R.; Santalla, M. Genetic mapping and QTL analysis in common bean. The Common Bean Genome 2017, 69-107.

Kole, C.; Muthamilarasan, M.; Henry, R.; Edwards, D.; Sharma, R.; Abberton, M.; Batley, J.; Bentley, A.; Blakeney, M.; Bryant, J.; et al. Application of genomics-assisted breeding for generation of climate resilient crops: progress and prospects. Front Plant Sci 2015, 6, 563, doi:10.3389/fpls.2015.00563.

Li, J.; Dai, X.; Zhuang, Z.; Zhao, P.X. LegumeIP 2.0—a platform for the study of gene function and genome evolution in legumes. Nucleic acids research 2016, 44, D1189-D1194.

Miller, T.; Gepts, P.; Kimno, S.; Arunga, E.; Chilagane, L.A.; Nchimbi-Msolla, S.; Namusoke, A.; Namayanja, A.; Tedla, Y.R. Alternative markers linked to the *Phg-2* angular leaf spot resistance locus in common bean using the Phaseolusgenes marker database. African Journal of Biotechnology 2018, 17, 818-828.

Parker, T.A.; Gepts, P. Population genomics of *Phaseolus* spp.: A domestication hotspot. Springer: 2021.

**Genetic/genomic analyses and development of new markers for disease resistances**

**Anthracnose**

Oblessuc, P.R.; Baroni, R.M.; da Silva Pereira, G.; Chiorato, A.F.; Carbonell, S.A.M.; Briñez, B.; Da Costa E Silva, L.; Garcia, A.A.F.; Camargo, L.E.A.; Kelly, J.D. Quantitative analysis of race-specific resistance to *Colletotrichum lindemuthianum* in common bean. Molecular Breeding 2014, 34, 1313-1329.

Sousa, L.L.; Cruz, A.S.; Vidigal Filho, P.S.; Vallejo, V.A.; Kelly, J.D.; Gonçalves-Vidigal, M.C. Genetic mapping of the resistance allele Co-5 to *Colletotrichum lindemuthianum* in the common bean MSU 7-1 line. Australian Journal of Crop Science 2014, 8, 317-323.

Oblessuc, P.R.; Francisco, C.; Melotto, M. The *Co-4* locus on chromosome Pv08 contains a unique cluster of 18 *COK-4* genes and is regulated by immune response in common bean. Theoretical and Applied Genetics 2015, 128, 1193-1208.

Sousa, L.L.; Gonçalves, A.O.; Gonçalves‐Vidigal, M.C.; Lacanallo, G.F.; Fernandez, A.C.; Awale, H.; Kelly, J.D. Genetic characterization and mapping of anthracnose resistance of common bean landrace cultivar Corinthiano. Crop Science 2015, 55, 1900-1910.

Coimbra‐Gonçalves, G.K.; Gonçalves‐Vidigal, M.C.; Coelho, R.T.; Valentini, G.; Vidigal Filho, P.S.; Lacanallo, G.F.; Sousa, L.L.; Elias, H.T. Characterization and mapping of anthracnose resistance gene in Mesoamerican common bean cultivar Crioulo 159. Crop Science 2016, 56, 2904-2915.

Perseguini, J.M.K.C.; Oblessuc, P.R.; Rosa, J.R.B.F.; Gomes, K.A.; Chiorato, A.F.; Carbonell, S.A.M.; Garcia, A.A.F.; Vianello, R.P.; Benchimol-Reis, L.L. Genome-wide association studies of anthracnose and angular leaf spot resistance in common bean (*Phaseolus vulgaris* L.). PLoS One 2016, 11, e0150506.

Murube, E.; Campa, A.; Ferreira, J.J. Integrating genetic and physical positions of the anthracnose resistance genes described in bean chromosomes Pv01 and Pv04. PLoS One 2019, 14, e0212298.

Maldonado-Mota, C.; Moghaddam, S.; Schröder, S.; Hurtado-Gonzales, O.; McClean, P.; Pasche, J.; Lamppa, R.; Pastor-Corrales, M.; Tobar-Piñón, M.; Osorno, J. Genomic regions associated with resistance to anthracnose in the Guatemalan climbing bean (*Phaseolus vulgaris* L.) germplasm collection. Genetic Resources and Crop Evolution 2021, 68, 1073-1083.

**Genetic/genomic analyses and development of new markers for disease resistances**

Anthracnose

Gonçalves-Vidigal, M.C.; Cruz, A.S.; Garcia, A.; Kami, J.; Vidigal Filho, P.S.; Sousa, L.L.; McClean, P.; Gepts, P.; Pastor-Corrales, M. Linkage mapping of the *Phg-1* and *Co-14* genes for resistance to angular leaf spot and anthracnose in the common bean cultivar AND 277. Theoretical and Applied Genetics 2011, 122, 893-903.

Gonçalves-Vidigal, M.; Cruz, A.; Lacanallo, G.; Vidigal Filho, P.; Sousa, L.; Pacheco, C.; McClean, P.; Gepts, P.; Pastor-Corrales, M. Co-segregation analysis and mapping of the anthracnose Co-10 and angular leaf spot *Phg-ON* disease-resistance genes in the common bean cultivar Ouro Negro. Theoretical and Applied Genetics 2013, 126, 2245-2255.

Oblessuc, P.R.; Cardoso Perseguini, J.M.K.; Baroni, R.M.; Chiorato, A.F.; Carbonell, S.A.M.; Mondego, J.M.C.; Vidal, R.O.; Camargo, L.E.A.; Benchimol-Reis, L.L. Increasing the density of markers around a major QTL controlling resistance to angular leaf spot in common bean. Theoretical and Applied Genetics 2013, 126, 2451-2465.

Keller, B.; Manzanares, C.; Jara, C.; Lobaton, J.D.; Studer, B.; Raatz, B. Fine-mapping of a major QTL controlling angular leaf spot resistance in common bean (*Phaseolus vulgaris* L.). Theoretical and Applied Genetics 2015, 128, 813-826.

Miller, T.; Gepts, P.; Kimno, S.; Arunga, E.; Chilagane, L.A.; Nchimbi-Msolla, S.; Namusoke, A.; Namayanja, A.; Tedla, Y.R. Alternative markers linked to the *Phg-2* angular leaf spot resistance locus in common bean using the Phaseolusgenes marker database. African Journal of Biotechnology 2018, 17, 818-828.

Okii, D.; Badji, A.; Odong, T.; Talwana, H.; Tukamuhabwa, P.; Male, A.; Mukankusi, C.; Gepts, P. Recombination fraction and genetic linkage among key disease resistance genes (*Co-42/Phg-2* and *Co-5*/“P. ult”) in common bean. African journal of biotechnology 2019, 18.

Common bacterial blight

Xie, W.; Khanal, R.; McClymont, S.; Stonehouse, R.; Bett, K.; Yu, K.; Pauls, K.P.; Navabi, A. Interaction of quantitative trait loci for resistance to common bacterial blight and pathogen isolates in *Phaseolus vulgaris* L. Molecular breeding 2017, 37, 1-14.

Foucher, J.; Ruh, M.; Préveaux, A.; Carrère, S.; Pelletier, S.; Briand, M.; Serre, R.-F.; Jacques, M.-A.; Chen, N.W. Common bean resistance to Xanthomonas is associated with upregulation of the salicylic acid pathway and downregulation of photosynthesis. BMC genomics 2020, 21, 1-19.

*Fusarium* root rot

Wang, W.; Jacobs, J.L.; Chilvers, M.I.; Mukankusi, C.M.; Kelly, J.D.; Cichy, K.A. QTL analysis of Fusarium root rot resistance in an Andean× middle American common bean RIL population. Crop Science 2018, 58, 1166-1180.

Halo blight

Miklas, P.N.; Fourie, D.; Trapp, J.; Larsen, R.C.; Chavarro, C.; Blair, M.W.; Gepts, P. Genetic characterization and molecular mapping *Pse-2* gene for resistance to halo blight in common bean. Crop science 2011, 51, 2439-2448.

Miklas, P.N.; Fourie, D.; Trapp, J.; Davis, J.; Myers, J.R. New Loci Including Pse‐6 Conferring Resistance to Halo Bacterial Blight on Chromosome Pv04 in Common Bean. Crop Science 2014, 54, 2099-2108.

González, A.M.; Godoy, L.; Santalla, M. Dissection of resistance genes to *Pseudomonas syringae pv. phaseolicola* in UI3 common bean cultivar. International Journal of Molecular Sciences 2017, 18, 2503.

Powdery mildew

Pérez-Vega, E.; Trabanco, N.; Campa, A.; Ferreira, J.J. Genetic mapping of two genes conferring resistance to powdery mildew in common bean (*Phaseolus vulgaris* L.). Theoretical and applied genetics 2013, 126, 1503-1512.

Rust

Melmaiee, K.; Todd, A.; McClean, P.; Lee, R.; Schlueter, J.; Jackson, S.; Kalavacharla, V. Identification of molecular markers associated with the deleted region in common bean (*Phaseolus vulgaris*) ur-3 mutants. Australian Journal of Crop Science 2013, 7, 354-360.

**Genetic/genomic analyses and development of new markers for traits other than disease resistances**

Silué, S.; Diarrasouba, N.; Fofana, I.J.; Muhovski, Y.; Toussaint, A.; Mergeai, G.; Jacquemin, J.-M.; Baudoin, J.-P. Description of *Phaseolus vulgaris* L. aborting embryos from ethyl methanesulfonate (EMS) mutagenized plants. Biotechnologie, agronomie, société et environnement 2013, 17.

Aranda, L.; Porch, T.G.; Bassett, M.J.; Lara, L.; Cregan, P.B. Genetics and mapping of the Cl Gene for circumlineated pattern in common bean using AFLP-based bulk segregant analysis and SNP-based bidirectional selective genotyping. Journal of the American Society for Horticultural Science 2014, 139, 213-218.

Morais, S.R.P.d.; Vieira, A.F.; Almeida, L.C.d.S.; Rodrigues, L.A.; Melo, P.G.S.; Faria, L.C.d.; Melo, L.C.; Pereira, H.S.; Souza, T.L.P.O.d. Application of microsatellite markers to confirm controlled crosses and assess genetic identity in common bean. Crop Breeding and Applied Biotechnology 2016, 16, 234-239.

Xie, W.; Perry, G.; Martin, C.J.; Shim, Y.-S.; Navabi, A.; Pauls, K.P. Molecular characterization of dihydroneopterin aldolase and aminodeoxychorismate synthase in common bean—genes coding for enzymes in the folate synthesis pathway. Genome 2017, 60, 588-600.

Okii, D.; Tukamuhabwa, P.; Tusiime, G.; Talwana, H.; Odong, T.; Mukankusi, C.; Male, A.; Amongi, W.; Sebuliba, S.; Paparu, P. Agronomic qualities of genetic pyramids of common bean developed for multiple-disease-resistance. African Crop Science Journal 2017, 25, 457-472.

Izquierdo, P.; Astudillo, C.; Blair, M.W.; Iqbal, A.M.; Raatz, B.; Cichy, K.A. Meta-QTL analysis of seed iron and zinc concentration and content in common bean (*Phaseolus vulgaris* L.). Theoretical and Applied Genetics 2018, 131, 1645-1658.

Nabateregga, M.; Mukankusi, C.; Raatz, B.; Edema, R.; Nkalubo, S.; Alladassi, B. Quantitative trait loci (QTL) mapping for intermittent drought tolerance in BRB 191× SEQ 1027 Andean Intragene cross recombinant inbred line population of common bean (*Phaseolus vulgaris* L.). African Journal of Biotechnology 2019, 18.

Oladzad, A.; Porch, T.; Rosas, J.C.; Moghaddam, S.M.; Beaver, J.; Beebe, S.E.; Burridge, J.; Jochua, C.N.; Miguel, M.A.; Miklas, P.N. Single and multi-trait GWAS identify genetic factors associated with production traits in common bean under abiotic stress environments. G3: Genes, Genomes, Genetics 2019, 9, 1881-1892.

Wu, L.; Chang, Y.; Wang, L.; Wang, S.; Wu, J. Genome‐wide association analysis of drought resistance based on seed germination vigor and germination rate at the bud stage in common bean. Agronomy Journal 2021, 113, 2980-2990.

**Genomics**

Phaseolus

Schmutz, J.; McClean, P.E.; Mamidi, S.; Wu, G.A.; Cannon, S.B.; Grimwood, J.; Jenkins, J.; Shu, S.; Song, Q.; Chavarro, C. A reference genome for common bean and genome-wide analysis of dual domestications. Nature genetics 2014, 46, 707-713.

Moghaddam, S.M.; Song, Q.; Mamidi, S.; Schmutz, J.; Lee, R.; Cregan, P.; Osorno, J.M.; McClean, P.E. Developing market class specific InDel markers from next generation sequence data in *Phaseolus vulgaris* L. Frontiers in Plant Science 2014, 5, 185.

Vlasova, A.; Capella-Gutiérrez, S.; Rendón-Anaya, M.; Hernández-Oñate, M.; Minoche, A.E.; Erb, I.; Câmara, F.; Prieto-Barja, P.; Corvelo, A.; Sanseverino, W. Genome and transcriptome analysis of the Mesoamerican common bean and the role of gene duplications in establishing tissue and temporal specialization of genes. Genome biology 2016, 17, 1-18.

Song, Q.; Jia, G.; Hyten, D.L.; Jenkins, J.; Hwang, E.-Y.; Schroeder, S.G.; Osorno, J.M.; Schmutz, J.; Jackson, S.A.; McClean, P.E. SNP assay development for linkage map construction, anchoring whole-genome sequence, and other genetic and genomic applications in common bean. G3: Genes, Genomes, Genetics 2015, 5, 2285-2290.

Ferreira, J.J.; Murube, E.; Campa, A. Introgressed genomic regions in a set of near‐isogenic lines of common bean revealed by genotyping‐by‐sequencing. The Plant Genome 2017, 10.

González, A.M.; Yuste-Lisbona, F.J.; Fernández-Lozano, A.; Lozano, R.; Santalla, M. Genetic mapping and QTL analysis in common bean. The Common Bean Genome 2017, 69-107.

Schwember, A.; Carrasco, B.; Gepts, P. Unraveling agronomic and genetic aspects of runner bean (*Phaseolus coccineus* L.). Field Crops Research 2017, 206, 86-94.

Assefa, T.; Assibi Mahama, A.; Brown, A.V.; Cannon, E.K.; Rubyogo, J.C.; Rao, I.M.; Blair, M.W.; Cannon, S.B. A review of breeding objectives, genomic resources, and marker-assisted methods in common bean (*Phaseolus vulgaris* L.). Molecular Breeding 2019, 39, 1-23.

Shobhanee, M.; Ram, S. Organizing Common Bean (*Phaseolus vulgaris*) Research: A Model for Information Resources Integration. Proceedings of the Association for Information Science and Technology 2022, 59, 797-799.

Legumes

Bharadwaj, C.; Soren, K.; Parida, S.; Patil, B.; Jain, P.; Thudi, M.; Varshney, R. Breeding for abiotic stress tolerance in pulses using genomic tools. In Proceedings of the National Seminar on OMIC Technologies for Better Food and Nutrition, 2016.

**Genetic diversity**

Okii, D.; Tukamuhabwa, P.; Kami, J.; Namayanja, A.; Paparu, P.; Ugen, M.; Gepts, P. The genetic diversity and population structure of common bean (*Phaseolus vulgaris* L) germplasm in Uganda. African Journal of Biotechnology 2014, 13.

Müller, B.S.; Pappas, G.J.; Valdisser, P.A.; Coelho, G.R.; de Menezes, I.P.; Abreu, A.G.; Borba, T.C.; Sakamoto, T.; Brondani, C.; Barros, E.G. An operational SNP panel integrated to SSR marker for the assessment of genetic diversity and population structure of the common bean. Plant molecular biology reporter 2015, 33, 1697-1711.

Lobaton, J.D.; Miller, T.; Gil, J.; Ariza, D.; de la Hoz, J.F.; Soler, A.; Beebe, S.; Duitama, J.; Gepts, P.; Raatz, B. Resequencing of common bean identifies regions of inter–gene pool introgression and provides comprehensive resources for molecular breeding. The plant genome 2018, 11, 170068.

Wilkus, E.L.; Berny Mier y Teran, J.C.; Mukankusi, C.M.; Gepts, P. Genetic patterns of common-bean seed acquisition and early-stage adoption among farmer groups in western Uganda. Frontiers in Plant Science 2018, 9, 301055.

Pereira, H.S.; Mota, A.P.S.; Rodrigues, L.A.; de Souza, T.L.P.O.; Melo, L.C. Genetic diversity among common bean cultivars based on agronomic traits and molecular markers and application to recommendation of parent lines. Euphytica 2019, 215, 38.

**Other Species**

Other Phaseolus species

Garcia, T.; Duitama, J.; Zullo, S.S.; Gil, J.; Ariani, A.; Dohle, S.; Palkovic, A.; Skeen, P.; Bermudez-Santana, C.I.; Debouck, D.G. Comprehensive genomic resources related to domestication and crop improvement traits in Lima bean. Nature Communications 2021, 12, 702.

Non-Phaseolus species

Avcı, S.; Ilhan, E.; Erayman, M.; Sancak, C. Analysis of Onobrychis Genetic diversity using SSR markers from related legume species. 2014.

**Theses**

Qi, Y. Characterization of a Putative Yield-related Gene in Common Bean (*Phaseolus vulgaris* L.). University of Guelph, 2015.

Quiroga, G. Identification of candidate genes involved in the photoperiod response in common bean (*Phaseolus vulgaris* L.). 2015.

Pereira, H.S. Mapeamento de locos de resistência ao crestamento bacteriano comum do feijoeiro (Phaseolus vulgaris L.). Universidade Federal de Goiás, Escola de Agronomia, Goiânia., 2016.

Dohle, S. Development of resources for Lima bean (Phaseolus lunatus) breeding and genetics research; University of California, Davis: 2017.

Maldonado-Mota, C.R. Identification of new sources of resistance to anthracnose in climbing bean germplasm from Guatemala. North Dakota State University, 2017.

Mateos Suárez, B. Identification of genomic regions involved in the control of the size and weight in common bean seed using GWAS. Universitat Politècnica de València & SERIDA, València, 2019.

Miller, T.I. Toward Genomics-Based Breeding in Phaseolus vulgaris and Quantitative Trait Locus Mapping of Angular Leaf Spot Resistance; University of California, Davis: 2019.

Kabeja, A. Gene ecology of the climbing common bean (Phaseolus vulgaris)-Bean Common Mosaic Virus/Bean Common Mosaic Necrosis Virus (BCMV/BCMNV) relationship in Rwanda: a key for the development of virus-resistant beans; University of California, Davis: 2020.

Zullo, S.S. Developing a molecular linkage map for and understanding the biochemical mechanisms and underlying genetic architecture of biotic stress resistance in lima bean (Phaseolus lunatus L.); University of California, Davis: 2021.

Izquierdo, P. Exploring the Genetic Architecture and Improving Genomic Prediction Accuracy for Yield, Mineral Concentration, and Canning Quality Traits in Common Bean (*Phaseolus vulgaris*); Michigan State University: 2023.

Wafula, B.W. Prevalence and host resistance to Common bean rust Disease In Central and Western Kenya. UoEm, 2023.