

Dr. Régine DELOURME – Senior Research scientist

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Education/Employment

- From 1998 Senior Scientist-DR2 (Plant Genetics and Genomics) UMR1349 INRA-Agrocampus Ouest Université Rennes 1, IGEPP, France
- 1986 – 1997 Scientist, UMR 118 INRA-Agrocampus Rennes APBV, France
- 1986 Ph.D. Biology- Genetics and Plant Breeding, University of Rennes 1, France.
- 1982 Engineer in Agronomy, Genetics and Breeding, ENSA Rennes

Research interests and Expertise

Dr R Delourme (RD) has strong expertise in the field of molecular mapping and application of genomics in genetic analyses and quantitative genetics. RD has specific experience in genetic mapping in Brassica with the development of dense genetic maps of oilseed rape including various types of molecular markers (SSR, SNP) and using Arabidopsis genomic data. RD has long experience of genetic and genomic analyses of various agronomic traits with a special emphasize on disease resistance (resistance to *Leptosphaeria maculans*, *Pyrenopeziza brassicae* & *Plasmodiophora brassicae*). These include positional gene cloning, quantitative genetics studies (QTL analyses, Association mapping), comparative genomics and underlying mechanisms investigation.

RD had the coordination of several research projects (public/private funding: Génoplante, PROMOSOL, PRIR Région Bretagne) and have developed international collaborations in the field of genetic mapping, genetic analyses and disease resistance.

A selection of relevant Publications

- Huang, Y. J., Jestin, C., Welham, S. J., King, G. J., Manzanares-Dauleux, M. J., Fitt, B. D. L., **Delourme, R.** 2016. Identification of environmentally stable QTL for resistance against *Leptosphaeria maculans* in oilseed rape (*Brassica napus*). Theor Appl Genet, 129 (1), 169-180.
- Hervé, M., **Delourme, R.**, Cortesero, A.-M. 2016. Plant genotype affects the quality of oilseed rape (*Brassica napus*) for adults and larvae of the pollen beetle (*Meligethes aeneus*). Physiol Entomol, 41(3): 202-209.
- Hervé M.R., Garcia N., Tralalon M., Le Ralec A., **Delourme R.** & Cortesero A.M. 2015. Oviposition behavior of the pollen beetle (*Meligethes aeneus*): a functional study. Journal of Insect Behavior 28(2): 107-119.
- Jestin C., Bardol N., Lodé M., Duffé P., Domin C., Vallée P., Mangin B., Manzanares-Dauleux M.J. & **Delourme R.** 2015. Connected populations for detecting quantitative resistance factors to Phoma stem canker in oilseed rape (*Brassica napus* L.). Molecular Breeding 35 : 167
- Fopa Fomeju B, Falentin C, Lassalle G, Manzanares-Dauleux MJ, **Delourme R** 2015. Comparative genomic analysis of duplicated homoeologous regions involved in the resistance of *Brassica napus* to stem canker. Front. Plant Sci. 6:772.
- Lavaud, C., Lesne, A., Piriou, C., Le Roy, G., Boutet, G., Moussart, A., Poncet, C., **Delourme, R.**, Baranger, A., Pilet-Nayel, M.-L. 2015. Validation of QTL for resistance to *Aphanomyces euteiches* in different pea genetic backgrounds using near-isogenic lines . Theor Appl Genet, 128 (11): 2273-2288.
- Delourme R**, Bousset L, Ermel M, Duffé P, Besnard AL, Marquer B, Fudal I, Linglin J, Chadœuf J, Brun H. 2014. Quantitative resistance affects the speed of frequency increase but not the diversity of the virulence alleles

- overcoming a major resistance gene to *Leptosphaeria maculans* in oilseed rape. *Infection, Genetics and Evolution*, 27 (2014) 490–499.
- Fopa Fomeju B, Falentin C, Lassalle G, Manzanares-Dauleux M, **Delourme R**. 2014. Homoeologous duplicated regions are involved in quantitative resistance of *Brassica napus* to stem canker. *BMC Genomics*, 15(498).
- Chalhoub B., Denoeud F., Liu S., Parkin I.A.P., Tang H.B., Wang X.X., Chiquet J., Belcram H., Tong C., Samans B., Corr ea M., Da Silva C., Just J., Falentin C., Koh C.S., Le Clainche I., Bernard M., Bento P., Noel B., Labadie K., Alberti A., Charles M., Arnaud D., Guo H., Daviaud C., Alamery S., Jabbari K., Zhao M., Edger P.P., Chelaifa H., Tack D., Lassalle G., Mestiri I., Schnel N., Le Paslier M.C., Fan G., Renault V., Bayer P.E., Golicz A.A., Manoli S., Lee T.H., Thi V.H.C., Chalabi S., Hu Q., Fan C., Tollenaere R., Lu Y., Battail C., Shen J., Sidebottom C.H.D., Wang X.X., Canaguier A., Chauveau A., B rard A., Deniot G., Guan M., Liu Z., Sun F., Lim Y.P., Lyons E., Town C.D., Bancroft I., Wang X.X., Meng J., Ma J., Pires J.C., King G.J., Brunel D., **Delourme R.**, Renard M., Aury J.M., Adams K.L., Batley J., Snowdon R.J., Tost J., Edwards D., Zhou Y., Hua W., Sharpe A.G., Paterson A.H., Guan C. & Wincker P. (2014). Early allopolyploid evolution in the post-Neolithic *Brassica napus* oilseed genome. *Science* 354 : 950-953.
- Herv  M.R., **Delourme R.**, Gravot A., Marnet N., Berardocco S. & Cortesero A.M. 2014. Manipulating feeding stimulation to protect crops against insect pests? *Journal of Chemical Ecology* 40(11-12): 1220-1231.
- Herv  M.R., **Delourme R.**, Leclair M., Marnet N. & Cortesero A.M. 2014. How oilseed rape (*Brassica napus*) genotype influences pollen beetle (*Meligethes aeneus*) oviposition. *Arthropod-Plant Interactions*, 8(5): 393-392.
- Jubault M, Lariagon C, Taconnat L, Renou JP, Gravot A, **Delourme R** and Manzanares-Dauleux MJ, 2013. Partial resistance to clubroot in *Arabidopsis* is based on changes in the host primary metabolism and targeted cell division and expansion capacity. *Functional & Integrative Genomics* 13: 191-205.
- Hamon C, Coyne CJ, McGee RJ, Lesn  A, Esnault R, Mangin P, Herv  M, Le Goff I, Deniot G, Roux-Duparque M, Morin G, McPhee KE, **Delourme R**, Baranger A, Pilet-Nayel ML. 2013. QTL meta-analysis provides a comprehensive view of loci controlling partial resistance to *Aphanomyces euteiches* in four sources of resistance in pea. *BMC Plant Biology* 13: 45
- Delourme R**, Falentin C, Fopa Fomeju B, Boillot M, Lassalle G, Andr  I, Duarte J, Gauthier V, Lucante N, Marty A, Pauchon M, Pichon JP, Rib re N, Trotoux G, Blanchard P, Riv re N, Martinant JP, Pauquet J. 2013. High-density SNP-based genetic map development and linkage disequilibrium assessment in *Brassica napus* L. *BMC Genomics* 14:120.
- Lu YH, Belcram H, Falentin C, Piel N, Rouault P, Lucas MO, Just J, Renard M, **Delourme R**, Chalhoub B. 2012. A Dominant Point Mutation in a RINGv E3 Ubiquitin Ligase Homoeologous Gene Leads to Cleistogamy in *Brassica napus*. *Plant Cell* 24: 4875-4891.
- Jestin C., Vall e P., Domin C., Manzanares-Dauleux M.J. & **Delourme R**. 2012. Assessment of a new strategy for selective phenotyping applied to complex traits in *Brassica napus*. *Open Journal of Genetics*, 2(4): 190-201.
- Wagner G, Charton S, Lariagon C, Laperche A, Lugan R , Frenedo P, Bouchereau A, **Delourme R**, Gravot A , Manzanares-Dauleux MJ. 2012. Metabotyping: a new approach to investigate rapeseed (*Brassica napus* L.) genetic diversity in the metabolic response to clubroot infection. *Molecular Plant-Microbe Interactions* 25: 1478-1491.
- Auger B, Pouvreau JB, Pouponneau K, Yoneyama K, Montiel G, Le Bizec B, Yoneyama K, Delavault P, **Delourme R**, Simier P. 2012. Germination Stimulants of *Phelipanche ramosa* in the Rhizosphere of *Brassica napus* Are Derived from the Glucosinolate Pathway. *Molecular Plant-Microbe Interactions* 25: 993-1004.
- Gravot A, Deleu C, Wagner G, Lariagon C, Lugan R, Todd C, Wendehenne D, **Delourme R**, Bouchereau A, Manzanares-Dauleux MJ. 2012. Arginase Induction Represses Gall Development During Clubroot Infection in *Arabidopsis*. 2012. *Plant Cell Physiol.* 53(5): 901–911.
- Gravot A, Grillet L, Wagner G, Jubault M, Lariagon C, Baron C, Deleu C, **Delourme R**, Bouchereau A, Manzanares-Dauleux MJ, 2011. Genetic and physiological analysis of the relationship between partial resistance to clubroot and tolerance to trehalose in *Arabidopsis thaliana*. *New Phytol* 191: 1083–1094.
- Hamon C, Baranger A, Coyne CJ, Le Goff I, L'Antho ne V, Esnault R, Riv re JP, Klein A, Mangin P, McGee RJ, McPhee KE, Roux-Duparque M, Porter L, Miteul H, Lesn  A, Morin G, Onfroy C, Moussart A, Tivoli B, **Delourme R**, Pilet-Nayel ML. 2011. New consistent QTL in pea associated with partial resistance to *Aphanomyces euteiches* in multiple field and controlled condition environments from France and the United States. *TAG* 123 : 261-281.
- Wang J, Lydiate DJ, Parkin, Falentin C, **Delourme R**, Carion PWC, King GJ. 2011. Integration of linkage maps for the Amphidiploid *Brassica napus* and comparative mapping with *Arabidopsis* and *Brassica rapa*. *BMC Genomics* 12:101.

- Jestin C, Lodé M, Vallée P, Domin C, Falentin C, Horvais R, Coedel S, Manzanares-Dauleux M J., **Delourme R.** 2011. Association mapping of quantitative resistance for *Leptosphaeria maculans* in oilseed rape (*Brassica napus* L.). *Molecular Breeding* 27: 271-287.
- Hamon C., Baranger A., Miteul H., Le Cointe R., Le Goff I., Deniot G., Onfroy C., Moussart A., Prosperi J.M., Tivoli B., **Delourme R.**, Pilet-Nayel M.L. 2010. A complex genetic network involving a broad-spectrum locus and strain-specific loci controls resistance to different pathotypes of *Aphanomyces euteiches* in *Medicago truncatula*. *Theor Appl Genet* 120: 955-970.
- Delourme R.**, Piel N., Horvais R., Pouilly N., Domin C., Vallée P., Falentin C., Manzanares-Dauleux M., Renard M. 2008. Molecular and phenotypic characterization of near isogenic lines at QTL for quantitative resistance to *Leptosphaeria maculans* in oilseed rape (*Brassica napus* L.) *Theor Appl Genet* 117: 1055-1067.
- Jubault M., Lariagon C., Simon M., **Delourme R.**, Manzanares-Dauleux M.J. 2008. Identification of Quantitative Trait Loci controlling partial clubroot resistance in *Arabidopsis thaliana*. *Theor Appl Genet* 117: 191-202.
- Jubault M., Hamon C., Grivot A., Lariagon C., **Delourme R.**, Bouchereau A., Manzanares-Dauleux M.J. 2008. Differential management of root polyamine metabolism and arginine catabolism in clubroot-susceptible and partially resistant genotypes of *Arabidopsis*. *Plant Physiology* 146 (4) 2008-2019.
- Alix K., Lariagon C., **Delourme R.**, Manzanares-Dauleux M. 2007. Exploiting natural genetic diversity and mutant resources of *Arabidopsis thaliana* to study the *A. thaliana-Plasmodiophora brassicae* interaction. *Plant Breeding* 126 : 218-221.
- Manzanares-Dauleux MJ, Rocherieux J., Alix K., Glory P., Giboulot A., Lariagon C., Renou JP, **Delourme R.**, 2006. Deciphering the host mechanisms of resistance in the *Brassicaceae/Plasmodiophora brassicae* pathosystem. *Acta Horticulturae* 706: 317-322.
- Delourme R.**, Chèvre A.M., Brun H., Rouxel T., Balesdent M.H., Dias J.S., Salisbury P., Renard M. and Rimmer S.R. 2006. Major gene and polygenic resistance to *Leptosphaeria maculans* in oilseed rape (*Brassica napus*). *European J. of Plant Pathology* 114: 41-52.
- Delourme R.**, Falentin C., Huteau V., Clouet V., Horvais R., Gandon B., Specel S., Hanneton L., Dheu J.E., Deschamps M., Margale E., Vincourt P., Renard M., 2006. Genetic control of oil content in oilseed rape (*Brassica napus* L.) *Theor. Appl. Genet.* 113 : 1331-1345.