

# Integration of genetic, genomic and marker-assisted selection approaches to build durable resistance to *Phytophthora* in new cocoa varieties

## PERSPECTIVES

This project has provided numerous molecular resources, publically available, and original results which have opened new fields of research, and which will continue to be valorised. We can mention particularly : the candidate gene validation, the deciphering of metabolic pathways involved in the phytophthora resistance mechanism using gene network approaches, and the marker assisted selection based on a high marker density, along all the genome, to predict and improve more efficiently the resistance level of new cocoa varieties.

Liste des publications liées au projet RTRA :

Publications dans des revues de rang A :

Mathilde Allegre†, Xavier Argout†, Michel Boccara, Olivier Fouet, Yolande Roguet, Aurelie Berard, Jean Marc Thevenin, Aurelie Chauveau, Ronan Rivallan, Didier Clement, Brigitte Courtois, Karina Gramacho, Anne Boland-Auge, Mathias Tah, Pathmanathan Umaharan, Dominique Brunel, and Claire Lanaud. 2011. Discovery and mapping of a new expressed sequence tag-single nucleotide polymorphism and simple sequence repeat panel for large-scale genetic studies and breeding of *Theobroma cacao* L. *Dna Research* pp. 1–13, (2011). doi:10.1093/dnares/dsr039  
Olivier Fouet, Mathilde Allegre, Xavier Argout, Mélanie Jeanneau, Arnaud Lemainque, Sylvana Pavek, Anne Boland, Ange Marie Risterucci, Gaston Loor, Mathias Tah, Xavier Sabau, Brigitte Courtois, Claire Lanaud. 2011. Structural characterization and mapping of functional EST-SSR markers in *Theobroma cacao*. *Tree Genetics & Genomes* 1-19 (2011)

Xavier Argout, Jerome Salse, Jean Marc Aury, Mark J. Guiltinan, Gaetan Droc, Jerome Gouzy, Mathilde Allegre, Cristian Chaparro, Thierry Legavre, , Siela Maximova, Michael Abrouk, Florent Murat, Olivier Fouet, Julie Poulain, Manuel Ruiz, Yolande Roguet, Maguy Rodier-Goud, Jose Fernandes Barbosa-Neto, Francois Sabot, Dave Kudrna, Jetty Siva S. Ammiraju, Stephan C. Schuster, John E. Carlson, Erika Sallet, Schiex T., Anne Dievert, Melissa Kramer, Laura Gelley, Shi Z., Aurélie Bérard, Christopher Viot, Michel Boccara, Ange Marie Risterucci, Valentin Guignon, Xavier Sabau, Axtell MJ., Ma Z., Zhang Y., Spencer Brown, Mickael Bourge, Wolfgang Golser, Xiang Song, Didier Clement, Ronan Rivalan, Mathias Tah, Joseph Moroh Akaza, Bertrand Pitollat, Karina Gramacho, Angélique D'Hont, Dominique Brunel, Diogenes Infante, Ismael Kebe, Pierre Costet, Rod Wing, W. Richard McCombie, Emmanuel Guiderdoni, Francis Quetier, Olivier Panaud, Patrick Wincker, Stephanie Sidibe-Bocs, Claire Lanaud. 2011. The genome of *Theobroma cacao*. *Nature Genetics* 43, 101–108 (2011) doi:10.1038/ng.736

Xavier Argout, et al. Deciphering the genome structure and paleohistory of *Theobroma cacao*. *Nature preceedings* 16 sept. 2010

<http://preceedings.nature.com/documents/4908/version/1>