

Candidate QTLs for durable resistance to *Melampsora larici-populina* leaf rust identified in hybrid poplars.

Arnaud Dowkiw, Véronique Jorge, Patricia Faivre-Rampant, Marie-Claude Lesage Descauses, Vanina Guérin, Caroline Saintagne, Marie-Christine Mourrier, Daniel Lacan, Patrick Poursat, Catherine Bastien

► **To cite this version:**

Arnaud Dowkiw, Véronique Jorge, Patricia Faivre-Rampant, Marie-Claude Lesage Descauses, Vanina Guérin, et al.. Candidate QTLs for durable resistance to *Melampsora larici-populina* leaf rust identified in hybrid poplars.. 10.Plant and Animal Genome (PAG), Jan 2002, San Diego, United States. 2002. hal-02762337

HAL Id: hal-02762337

<https://hal.inrae.fr/hal-02762337>

Submitted on 4 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

PAG-X Plant, Animal & Microbe Genomes X Conference

January 12-16, 2002
Town & Country Convention Center
San Diego, CA

Poster: Forest Trees

CANDIDATE QTLs FOR DURABLE RESISTANCE TO *Melampsora larici-populina* LEAF RUST IDENTIFIED IN HYBRID POPLARS

[Arnaud DOWKIW](#)¹, [Véronique JORGE](#)¹, [Patricia FAIVRE-RAMPANT](#)², [Marie-Claude LESAGE](#)¹, [Vanina BENOIT](#)¹, [Caroline SAINTAGNE](#)³, [Marie-Christine MOURIER](#)¹, [Daniel LACAN](#)¹, [Patrick POURSAT](#)¹, [Catherine BASTIEN](#)¹

¹ INRA, Unité Amélioration Génétique et Physiologie Forestières, Av de la pomme de pin, BP 20619 ARDON, 45166 OLIVET Cedex, FRANCE

² Université de Nancy 1, Laboratoire de Biologie Forestière, BP239, 54506 VANDOEUVRE Cedex, FRANCE

³ INRA, Unité Génétique et Amélioration des Arbres Forestiers, BP45, 33610 PIERROTON, FRANCE

Melampsora larici-populina is one of the main parasites affecting cultivated poplar stands in Europe. Selection for durable resistance has become a main target for breeders since previous selections for total resistance failed due to the adaptability of the pathogen. As part of a new breeding approach based on selection for partial resistance and for tolerance developed at the INRA, an interspecific *P.deltoides* x *P.trichocarpa* full-sib family (342 genotypes) is being characterised for these traits while a genetic linkage map is being constructed for the two involved parents (double pseudo testcross strategy). Several QTLs independently involved in the expression of partial resistance and tolerance have been identified in both parental genomes. Some of them appear to be highly relevant for selection as they explain more than 25% of phenotypic variation of tolerance and more than 50% of phenotypic variation of sporulation intensity. A validation of these QTL is being conducted in 9 other interspecific backgrounds.
