

QTL MAPPING FOR FIRE BLIGHT AND PEAR PSYLLA RESISTANCE IN AN INTER-SPECIFIC PEAR POPULATION

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Fire blight, caused by the bacterium *Erwinia amylovora*, is a serious disease of European pear (*Pyrus communis*) and is widely distributed over the world. The chemical control of fire blight is problematic, as the use of antibiotics is not allowed in many countries, and the eradication of infected plants remains the most effective method. *Cacopsylla pyri* (Hemiptera, Psyllidae) is an endemic and damaging pest in European pear orchards. Pesticides are used to fight *C. pyri*, but the insect has shown resistance to a number of compounds and many insecticides are toxic to its natural predators. In this scenario, the development of pear cultivars with sources of resistance is an efficient strategy to enable durable pest and disease control.

An inter-specific segregating population between P128R068T003 (*Pyrus x bretschneideri* x *P. communis*) and 'Moonglow' (*P. communis*) was created in order to study the genetics of pear resistance to four diseases and pests. Asian pears are usually less susceptible to psylla than their European relatives and P128R068T003 was previously demonstrated to be a source of resistance to *C. pyri*. 'Moonglow' originated from five *P. communis* cultivars, two of them being [0]resistant to fire blight: 'Roi Charles Wurtemberg' and 'Seckel'.

Here we describe the phenotyping of this population for fire blight and *C. pyri* resistance at INRA in Angers (France) and the detection of Quantitative Trait Loci (QTLs) by using a linkage map constructed for the P128R068T003 x 'Moonglow' population.