



## Breeding for carrot resistance to *Alternaria dauci* without compromising taste

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Titre	Breeding for carrot resistance to <i>Alternaria dauci</i> without compromising taste
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Auteur	Le Clerc, Valérie [1], Aubert, Christophe [2], Cottet, Valentine [3], Yovanopoulos, Claire [4], Piquet, Mathilde [5], Suel, Anita [6], Huet, Sébastien [7], Koutouan, Claude [8], Hamama, Latifa [9], Chalot, Guillaume [10], Jost, Michel [11], Pumo, Besnik [12], Briard, Mathilde [13]
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Mots-clés	Bitterness [14], Carrot leaf blight [15], Metabolite QTL [16], Polyacetylenes [17], Terpenes [18]
Résumé en anglais	<p>Developing carrot varieties highly resistant to <i>Alternaria dauci</i> is a top priority for breeders. Meanwhile, consumers are increasingly demanding as regards final product quality, particularly taste. Bitterness is one of the five common taste sensations, but it is rejected by most carrot consumers. Therefore, providing tools for efficient plant breeding of resistant, low bitter carrots would be helpful. While resistance QTLs (rQTLs) have already been identified for carrot resistance to <i>A. dauci</i>, the genetic control and mapping of the metabolites involved in bitterness perception have not been addressed so far. We identified the metabolites most involved in bitterness by combining chemical and sensory analyses of a set of resistant and susceptible carrot genotypes grown in different environments. We evaluated their genetic control and heritability in a segregating F2:3 population over 2 years of field trials and searched for colocalizations between rQTLs and metabolite QTLs (mQTLs) to evaluate the link between bitterness and resistance traits. Our results suggest that it is possible to increase resistance while favoring low bitter varieties by selecting genomic regions involved in the expression of one or the other trait and counter-selecting others when r- and mQTL colocalization is unfavorable.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua19388">http://okina.univ-angers.fr/publications/ua19388</a> [19]
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## Liens

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