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Zymoseptoria tritici is responsible for leaf blotch disease on wheat that represents the first threat for wheat production in Europe today. Consequently, following the intensive use of chemical control, fungicide resistance was selected and generalized for several modes of action (Leroux et al. 2007; Leroux & Walker 2011), leading to poor efficacy in the field. Towards this threat, the development of compounds with new modes of action is a priority. Among these, new molecules targeting the cytochrome bc1 (complex III of the mitochondrial respiration), at the Qi binding site are being developed. In this context, this poster will present the objectives and approaches of a beginning PhD (2018-2021), aiming to address the following questions: what are the most probable resistance mechanisms to QiIs in *Z. tritici*? What characteristics would the resistant strains present? And what are the most effective anti-resistance strategies? In order to answer these questions, we will produce strains of *Z. tritici* resistant to QiIs, using experimental evolution, to study the resistance at a genetic and a biochemical level, before measuring their fitness and competitiveness and comparing the sustainability of anti-resistance strategies. We will also decipher the impact of active drug efflux and activation of the alternative oxidase (AOX) pathway on QiI resistance.

Leroux P. *et al.*, 2007, Pest Management Science 63, 688-698.

Leroux P. *et al.*, 2011, Pest Management Science 67, 44-59.