P.06 - Effect of resistance sources on the infection process and epidemics of Puccinia striiformis on wheat

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Yellow rust, caused by the fungal pathogen *Puccinia striiformis* f.sp. *tritici* West. (PST), is among the most damaging diseases affecting bread wheat in temperate regions. Although good control of the disease may be achieved through fungicide treatment, the development of cultivars with durable resistance is a key point for sustainable wheat production. One such cultivar, Renan, has been cultivated for almost 20 years in France and despite being grown in environments favouring strong yellow rust epidemics; it has maintained an effective genetic control of yellow rust. A RILs population (Renan x Récital) has been developed at INRA-APBV (Le Rheu) and allowed the identification of the genetic factors conferring the resistance to yellow rust. The resistance of Renan is polygenic and efficient only at the adult plant stage. A set of 8 SSD (single seed descent) lines was selected, carrying different combinations of specific resistance genes and QTLs identified in this cultivar. In addition, we included Pavon 76, released by CIMMYT, containing *Yr29* which confers moderate levels of adult plant resistance to the pathogen population in North America, Ethiopia and Australia. Furthermore, a number of European cultivars have been identified to possess valuable sources of resistance. The objectives of the work presented here were: i) to determine genetic factors which may contribute to partial yellow rust resistance with extended durability, ii) to determine the specificity of these resistance factors or combinations of resistance factors in the cultivars/lines and iii) to test the influence of resistance factors on the infection processes, latent period, and spore production. Preliminary results will be presented.