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Virulence of *Bremia lactucae* populations in Southern France between 2006 and 2011

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Bremia isolates collected in the Avignon area between 2006 and 2011 were studied for virulence spectrum and compared to some isolates from other French areas. The collection processed from different origins: (1) isolates collected in protected culture of 4 growers on lettuce cultivars which were rather new varieties with large resistance, and also in air with "trap boxes"; (2) isolates from other growers near Avignon; (3) many isolates collected in INRA lettuce cultures on accessions of old and new varieties in plastic tunnels in winter or in open field in May and (4) several isolates harvested on *Lactuca serriola* often neighbour to lettuce cultures. The virulence was studied in artificial inoculation on 19 to 25 differential hosts.

In Avignon, 70 isolates were collected on lettuce cultivars, 25 were collected in "trap boxes" and 8 came from *L. serriola*; in other place of Vaucluse, 16 isolates were collected on cultivars, 4 on *L. serriola* and 2 in "trap boxes". All these 125 isolates could be classified in 2 groups present from fall 2006 to spring 2011. One group was collected only on *L. serriola* and cv Kigalie. These isolates were not virulent on Cobham green, neither on *Dm1* to *Dm6*, neither *Dm10* to *Dm13*; but they were virulent on *Dm7*, *Dm15*, *Dm16*, *R17*, *R18*, *R38*. The other group was collected on many cultivars with different resistances. These isolates were similar to Bl: 22, Bl: 24 or Bl: 25, not virulent on Dandie (*Dm3*) and LS102 (*R17*); some were virulent on Discovery (*Dm7*, *Rsa1*), some others were not.

Only in March 2010 and in 2011, few collected isolates were virulent on Dandie (*Dm3*); these isolates were collected on 2 cultivars, on *L. serriola* or in "trap boxes". These 7 isolates were also virulent on LS102 (*R17*), but were not virulent on LSE/18 (*Dm16*), Colorado (*R18*) and Discovery (*Dm7*, *Rsa1*). These types of isolates were collected also near Lyon in March 2009 on 2 other lettuce cultivars.

The isolates collected on the farm of one grower showed a global stability of virulence for 4 years on 5 cultivars with different resistances and in "trap boxes". Isolates collected on *L. serriola* and on "trap-plants" in INRA culture, or in "trap-boxes" placed in grower culture, show the presence of *Bremia* strains that were not collected in cultivated varieties. The *Bremia* isolates collected in one open field on old varieties were similar with those harvested on new cultivars.

These results will be discussed in relation with the virulence of European BI strains.