Agroscope | 2019

Different methods of evaluation of *Monilinia laxa* on apricot flowers and branches

J. Del Cueto[1], P. Stefani[2], T. Oberhänsli[2], G. Roch[3], L. Brun[4], J.-M. Audergon[5], D. Christen[1]

[1]Agroscope Changins-Wädenswil Research Station ACW, Schloss, P.O. Box 185, 8820 Wädenswil, Switzerland.

[2]Department of Crop Sciences, FiBL, Ackerstrasse 113 CH-5070 Frick, Switzerland.

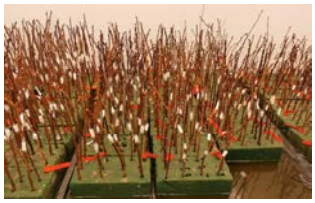
[3]CEP Innovation, 23 rue Jean Baldassini, F-69364 Lyon, France.

[4]INRA, UERI, Domaine de Gotheron, 26320 Saint-Marcel-lès-Valence, France.

[5]UR1052 GAFL Unité de Génétique et d'Amélioration des Fruits et Légumes, INRA, 84143 Montfavet, France.

State of the art

- ✓ Organic apricot production is currently not profitable.
- ✓ The main obstacle to sustainable profitability is brown rot caused by the fungus *Monilinia laxa* (Aderh. & Ruhl).
- ✓ In the current apricot germplasm no source of total resistance has been shown, but some varieties are expressing interesting levels of tolerance.
- ✓ A good evaluation of the *M. laxa* symptoms is essential for a precise diagnosis of the infection and to appreciate differences between tolerant and susceptible varieties and genotypes.



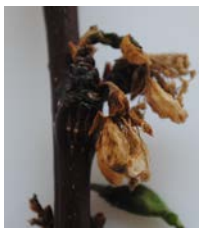
Materials and methods

- ✓ Different evaluation methods were carried out on a bi-parental population between Bakour (tolerant to *M. laxa*) and Bergeron (susceptible):

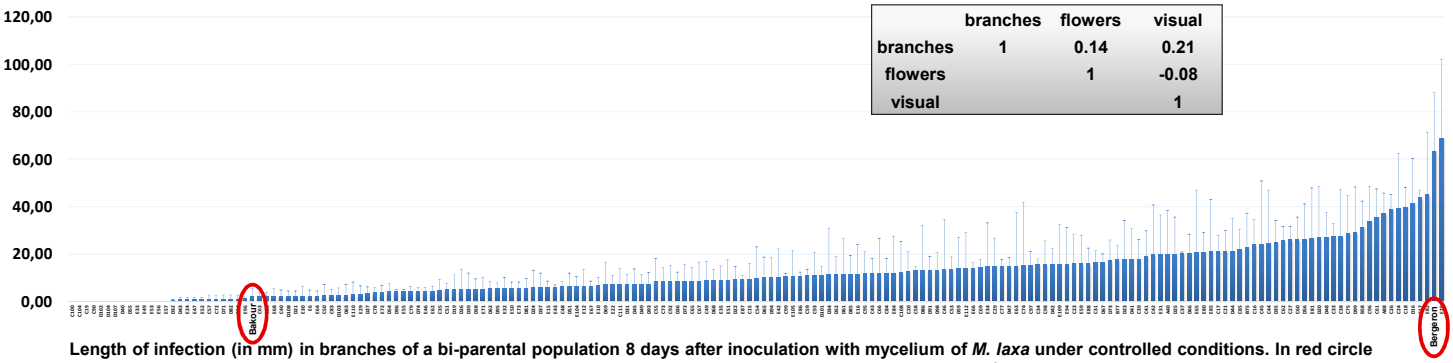
1) Visual evaluation of *Monilinia* symptoms was carried on the trees (from 0 to 100% of infection) 35 days after full blossom. Wheater dependant method.
2) Evaluations Under controlled conditions on each genotype:
   a) A spore suspension (10^4 / ml) of *M. laxa* was sprayed on flowers (20°C, 90% HR, 14 hours day), and % of infected flowers (necrotic petals) was measured 36 hours after.
   b) A drop of spores (10^5 /ml) was inoculated with a pipette directly on the pistil when the flower was in stage F. Flower / branches infection was evaluated.
   c) A plug of *M. laxa* mycelium was added on branches (20°C, 80% HR, darkness), and 8 days after the length of the reaction was measured.

Results and Conclusions

- ✓ Different levels of infection were observed within the bi-parental population for the three controlled phenotyping evaluations.
- ✓ Symptoms in petals were not linked with the *Monilinia* infection according to our observations. The infection with the spores on the pistil test was very low.
- ✓ Good segregation was observed for the visual assessment and for the evaluation test on branches.
- ✓ There was not a good correlation between the visual assessment in the field compare with the evaluation of branches and flowers.
- ✓ There was not a good correlation neither between the three evaluations under controlled conditions.
- ✓ Based onto the observed variability, a QTL approach can be applied for assessing the genetic components involved in *Monilinia* resistance.



	branches	flowers	visual
branches	1	0.14	0.21
flowers		1	-0.08
visual			1



Length of infection (in mm) in branches of a bi-parental population 8 days after inoculation with mycelium of *M. laxa* under controlled conditions. In red circle the two parental Bergeron (susceptible) and Bakour (tolerant). Grey box indicates the Correlation Coefficient (R^2) between the three evaluations.

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