

Differential Sets

Xanthomonas campestris pv. *vesicatoria* (Xcv) – Pepper

Four bacterial species (*Xanthomonas euvesicatoria*, *X. vesicatoria*, *X. perforans* and *X. gardneri*) have been reported to cause bacterial spot on pepper and/or tomato. Unfortunately, these species are not distinguished pathogenically. Until simple techniques are available to characterize these species, *Xanthomonas* strains causing bacterial spot on pepper and/or tomato will probably continue to be referred as *Xanthomonas campestris* pv. *vesicatoria* (Xcv) by the seed industry.

Different Xcv races have been identified on pepper. The race affiliation of an Xcv isolate is determined by the disease reaction profile this isolate will have following inoculation on a set of pepper lines (see table below). The disease reaction profile is determined by the avirulence gene(s) carried by the Xcv isolate.

Different varieties or lines with the same resistance gene(s) can give the same reaction to a given race or strain of pathogen. Therefore, the differential varieties or lines used by various researchers may differ. The differential sets presented here may be different than those found in the scientific literature and other sources.

Pathogenicity profile of Xcv races on pepper lines carrying different resistance genes

Pepper race	Avirulence gene(s) (carried by <i>X. c. vesicatoria</i>)	Differential pepper lines (resistance gene(s))					
		ECW [*]	ECW-10R [*] (Bs1)	ECW-20R [*] (Bs2)	ECW-30R [*] (Bs3)	PI 235047 (Bs4)	ECW-12346 [*] (Bs1, Bs2, Bs3, bs5, bs6)
0	<i>avrBs1, avrBs2, avrBs3, avrBs4</i>	St	HR	HR	HR	HR	HR
1	<i>avrBs2, avrBs3, avrBs4</i>	S	S	HR	HR	HR	HR
2	<i>avrBs1, avrBs2</i>	S	HR	HR	S	S	HR
3	<i>avrBs2, avrBs4</i>	S	S	HR	S	HR	HR
4	<i>avrBs3, avrBs4</i>	S	S	S	HR	HR	HR
5	<i>avrBs1</i>	S	HR	S	S	S	HR
6	<i>avrBs4</i>	S	S	S	S	HR	R
7	<i>avrBs2, avrBs3</i>	S	S	HR	HR	S	HR
8	<i>avrBs2</i>	S	S	HR	S	S	HR
9	<i>avrBs3</i>	S	S	S	HR	S	HR
10	not identified	S	S	S	S	S	R

* ECW = Early Calwonder; ECW-10R, ECW-20R, ECW-30R, and ECW-12346 are near-isogenic lines that differ solely by the presence of the corresponding resistance genes (e.g., *Bs1*, *Bs2*, etc.)

† Disease reaction: S = susceptible; HR = resistant (hypersensitive-reaction); R = resistant (non-hypersensitive reaction)

References

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