

# DIFFERENTIAL INTERACTION OF *XANTHOMONAS AXONOPODIS* PV *PHASEOLI* ISOLATES AND COMMON BEANS GENOTYPES

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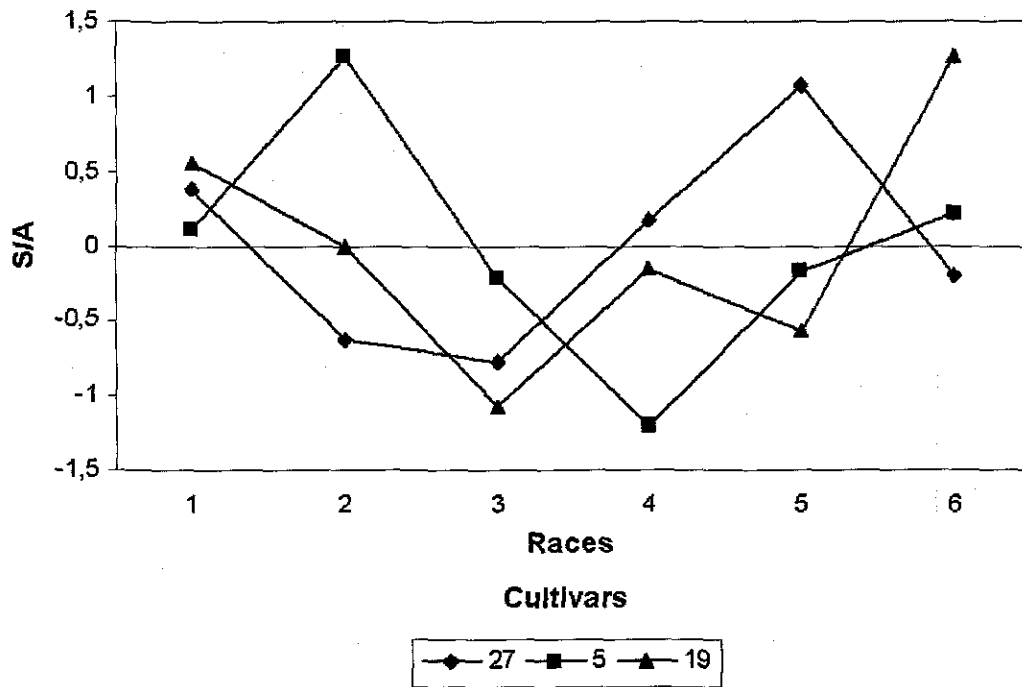
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Bacterial common blight caused by *Xanthomonas axonopodis* pv. *phaseoli* (*Xap*) affect common beans yields. Aiming to evaluate significant differential interaction 33 cultivars and lines of common bean were inoculated with six *Xap* isolates (*Xap* 1, *Xap* 2 *Xap* 3 *Xap* 4, *Xap* 5 e *Xap* 6) proceeding from Ponta Grossa-Paraná State. These inoculations were made under greenhouse conditions at Embrapa Rice & Beans, on a complete randomized block design, with three replicates. Inoculation was carried out by cutting the first trifoliolate leaves using scissor previously plunged into a bacterial suspension ( $10^8$  c.f.u. ml<sup>-1</sup>) at 10 days after emergence. There were done two cuts facing each other at a distance of two cm on a perpendicular orientation in relation to the central vein. Evaluation of disease severity was done at eight and ten days after inoculation by using a severity notes scale varying from zero to six. Data were analyzed by variance analysis and it was used the mean of disease severity to perform a partial diallel analysis. The determination of the estimative of horizontal and vertical resistance of the genotypes and the virulence of *Xap* isolates was done according to the model proposed by Melo and Santos (1999). Races x genotypes interaction were significant being strongest for BRS Esplendor, BRS Executivo and BRS Pioneiro (Figure 1) when inoculated with six *Xap* isolates. Differences in virulence of the pathogen was observed, for example, the isolate *Xap* 2 was the most pathogenic for the cultivar BRS Esplendor and the isolate *Xap* 4 showed the lowest virulence (Figure 1). The cultivars BRS Esplendor, BRS Pontal, Corrente, BRS Vereda, BRS Campeiro showed great horizontal resistance (Table 1). The pronounced interaction for races x cultivars concerning the association of virulence/vertical resistance in this pathosystem suggest the necessity of establishment of a differential series of common bean genotypes for the classification of *Xanthomonas axonopodis* pv. *phaseoli* races.

**Table 1.** Horizontal resistance and notes of the 10 common beans cultivars inoculated with six *Xap* races.

Cultivar	Horizontal resistance	notes (mean)
BRS Esplendor	-0,90	2,40
BRS Pontal	-0,81	2,41
BRS Vereda	-0,63	2,68
Corrente	-0,57	2,67
BRS Campeiro	-0,38	2,78
BRS Marfim	-0,37	2,79
BRS Pitanga	-0,27	3,07
BRS Executivo	-0,22	3,07
Aporé	-0,21	3,02
Pérola	-0,18	3,03



**Figure 1.** Differential interaction of the common bean cultivars (27- BRS Pioneiro, 5- BRS Esplendor e 19- BRS Executivo) inoculated with six *Xap* races.

**REFERENCE**

MELO, L.C.; SANTOS, J.B. Identification of resistant genotypes considering polygenic systems in host-pathogen interaction. *Genetics and Molecular Biology*, 22(4):601-608, 1999.